UNIVERSITY OF SOUTHERN QUEENSLAND

DIFFERENCES IN ENVIRONMENTAL DISCLOSURE BETWEEN NATIONAL AND INTERNATIONAL OIL AND GAS CORPORATIONS OPERATING IN THE OIL SECTOR OF ARAB PETROLEUM EXPORTING COUNTRIES

Submitted in fulfilment of the degree of

Doctor of Philosophy

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2013

CERTIFICATION OF DISSERTATION

I certify that the ideas, results, analyses and conclusions reported in this dissertation are entirely my own effort, except where otherwise acknowledged. I also certify that the work is original and has not been previously submitted for any other award, except where otherwise acknowledged.

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Signature of Candidate Date

ENDORSEMENT

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Signature of Supervisor/s Date

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Signature of Supervisor/s Date

Dedication

I dedicate this study to:

My beloved **Mother**

My best sister **Mariam**

Dear wife **Wafa**

For her continuous bear, patient and love

My dear children

Muadth and Reenad

Hoping to be a candle that lights their future

My wonderful brothers, sisters and their families

For their love and kind support

May Allah bless and reward them.

Acknowledgement

Foremost, I would thank Allah - the most exalted who created me and gives me an ability to persevere and the knowledge to complete this study. I bear witness that there is no god but Allah and Mohammed is His servant and messenger.

I am grateful to Allah for giving me wonderful parents who provided me with the best of upbringing where their prayers and blessings provided the greatest support to me during my studies. I call to Allah in order to prolong the life of my mother and give her the health. I pray to Allah to accept my father in his mercy, where my father died during my studies, which caused great pain and grief to me. A great source of solace in my journey with my study are my little angels—my son **Muadth** and daughter **Reenad.** May Allah protect and guide them. I also wish to acknowledge and thank, from the bottom of my heart, the patience and support of my wife, **Wafa,** and for her love and confidence in me during this PhD journey. As well, I would also like to thank my brothers, my sisters and their families for waiting for me to finish this study.

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ABSTRACT

In recent years, environmental disclosure practices have received much attention in the literature. However, a review of previous studies has revealed that the majority of studies have focused on developed countries while developing countries, especially the countries of the Arab region, have received scant attention worldwide (see Figure 2-3). As is well known, the Arab region has become the focus of attention by corporate investment due its huge oil wealth. However, although some studies addressing environmental disclosure practices have been performed in the Arab countries they have ignored the oil sector, which is a vital sector underpinning the economy of the countries in this region. Consequently, this study aims to cover the gap in the accounting literature, especially relating to the Arab region.

Therefore, this dissertation seeks to investigate the differences in environmental disclosure practices between national and international oil and gas corporations. The focus of this study is on quantity and quality of environmental disclosure contained in annual reports of petroleum companies. It is conducted based on a sample comprising 51 national corporations and 98 international corporations. The dependent variables, quantity and quality of environmental disclosure contained in annual reports, were measured by word count and environmental disclosure index score. In contrast, national factors comprising 'political and civil system, legal system, and level of economic development' were used as independent variables to explain differences in quantity and quality of environmental disclosure. Empirical data encompassing 'quantity and quality of environmental disclosure' are extracted using the content analytical methodology and environmental disclosure index. The annual reports of the firms used in this study from 2008 to 2010 amounted to a total of 444 reports. The data are analysed using three different but complementary statistical methods: (1) multiple regressions analysis, (2) Pearson's chi-square statistic and (3) independent t-test analysis.

The results of this research study indicate that there are variations in the level of environmental disclosure practices among national companies and international companies both in terms of quantity and quality of disclosure. The results of this study do not differ significantly from the results of previous studies which indicated low environmental disclosure practices in developing countries compared with developed

countries. However, the findings of this study have a number of important implications for future environmental disclosure practice in Arab region. Additionally, the study is different to previous studies as it focuses on the oil sector in the Arab world which it represents a vital role in the economies of the countries of the region. With regard to the descriptive analysis of the variables used in this study to explain differences in quantity and quality of environmental disclosure, it can be said that the results of the analysis of the independent variables used in this study indicate that the variance in environmental disclosure practices among international and national companies is due to differences in national factors such as political and civil system, legal system and level of economic development of countries that belong to the sample companies. The results of the regression analysis show both the political and civil systems, legal system and level of economic development are statistically significant in explaining the differences. Political and civil system and legal system were associated negatively with environmental disclosure practices in national companies, but positively in international companies. The level of economic development associated with environmental disclosure practices impacted positively in both national companies and international corporations. However, its effect was different in both. Furthermore, findings of independent t-test analysis show that country is one of the important determinants of environmental disclosure practices.

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List of Abbreviations

CIVL	Civil Law
CIVISL	Civil and Islamic Law
COML	Common Law
COMISL	Common and Islamic Law
EDI	Environmental Disclosure Index
EDPs	Environmental Disclosure Practices
IOGCs	International Oil and Gas Corporations
ISL	Islamic Law
LED	Level of Economic Development
LS	Legal System
NOGCs	National Oil and Gas Corporations
MNCs	Multi-National Companies
OAPEC	Organisation of Arab Petroleum Exporting Countries
PCS	Political and Civil System
QLED	Quality of Environmental Disclosure
QTED	Quantity of Environmental Disclosure
SEA	Social and Environmental Accounting
UAE	United Arab Emirates
UK	United Kingdom
USA	United States of America
VIF	Variance Inflation Factor
WWF	World Wide Fund for Nature

PUBLICATIONS ARISING FROM THIS DISSERTATION

Refereed Journal Research Papers

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1.0 CHAPTER ONE: INTRODUCTION

1.1 Introduction

Although the oil industry has become the main focus in economies of most countries worldwide (Al-Moneef 2006; Berument et al. 2010), the environment surrounding the industry has become threatened by oil pollution (Goel 2011; Kadafa et al. 2012). The oil industry is not limited to a particular environment and, as such, the oil industry threatens the environment—whether a marine environment or a wilderness environment. Many oil platforms exist at sea. Pulsipher et al. (2001) indicate that at least 6,500 oil platforms are located in the Gulf of Mexico. In addition, transportation of oil is via sea. On the other hand, thousands of oil pipelines extend underground, especially in oil-producing countries, in order to transport oil from place to place for storage. Moreover, many refineries exist along the coastlines of oil-producing countries.

In relation to the marine environment, there is no doubt throughout history of the importance of the marine environment to humans (Brown et al. 2006). However, at present, the activities carried out by humans have an adverse effect on the marine environment. Environmental impacts on seas and oceans result from adverse activities of the oil industry, including oil spills from platforms or shipping incidents which cause damage to the marine environment and cost countries huge amounts of money in terms cleaning the mess and restoring the environment, and the permanent loss to the environment. For example, the 2010 oil spill incident in the Gulf of Mexico cost British Petroleum more than $20 billion in compensation for the damage caused to the environment in that region (Griggs 2011; Partlett & Weaver 2011). Oil pollution not only threatens the sea, but also threatens the soil.

A serious threat posed by oil related pollution is the impact on underground waters. Oil pollution has a negative effect on groundwater. Spilled oil from oil pipelines mixes with groundwater and it has been found that it takes many years to remedy its effect on polluted underground water. Many countries rely on ground water for their water supply. This is the case in most countries of the Arab world, which constitute a

large part of the desert area. Thus, water pollution can be the cause of disease transmission. Moreover, prospecting and exploration processes, as well as air pollution caused by refineries, may sometimes result in deforestation (Bayode et al. 2011).

Many oil companies and international environmental organisations have sought to document the potential environmental impacts of the activities of the oil and gas industry. International companies are continually seeking ways to reconcile the development of the oil and gas industry with environmental protection. Oil companies earn huge profits from their activities in the petroleum industry. They can obtain their profits in different ways through the adoption of environmental strategies (Miroshnik 2002; Tan 2009). However, many companies in the oil sector have not adopted effective practices to prevent contamination. Oil companies, whether local or international companies, face many challenges regarding environmental issues. Local companies may face competition from international companies in terms of environment protection, therefore, these companies may adopt environmental strategies of global companies (Institutional Theory); or stakeholders, including the community, may put pressure on international and local companies. In addition, ethical and moral obligations may cause companies to consider the effects of environmental pollution.

Consistent with the above context, many countries worldwide have witnessed an increase in environmental legislation, as well as changes in the attitudes of the community and investors over the past few decades towards an environment more appropriate for communities. Escobar and Vredenburg (2011) reported that the United States enacted more than 90,000 regulations related to the use of the 'best available technology' to control and prevent environmental harm in the aftermath of environmental disasters between 1991 and 1995. Therefore, many environmental groups such as Greenpeace, the Australian Conservation Foundation (ACF) and World Wide Fund for Nature (WWF) have emerged during the last forty years. The attention of society, stakeholders and environmental groups contribute to increasing

the pressure on corporations to increase the disclosure of environmental information (Doh & Guay 2006; Elijido-Ten 2007; González-Benito & González-Benito 2010).

1.2 Petroleum Industry and its Environmental Impact

Oil and gas production has spread in the Middle East and North Africa is important to the economy of the region and trade with other countries. It is the most important energy resource for the global economy and modern civilisation. The oil industry includes many activities such as oil research and exploration, extraction of oil, oil transportation by sea or pipelines, and oil refining. Moreover, oil derivatives are evident in many industrial products. In short, many of the oil-producing countries have paid attention to the oil industry because of its prominent role in strengthening their economies.

Consequently, in recent years, much of the world depends on the production or trade of oil in order to support its economy. Therefore, this worldwide dependence on oil leads to an increase in oil consumption. Oil consumption continues to increase day by day. The world needs a hundred years to consume the first trillion barrels of oil, while the second trillion will be consumed during forty years only (KNPC 2005). In other words, with increased consumption and production of oil and gas worldwide, activities associated with the oil industry will increase in countries—whether they are producing or consuming (Longwell 2002). These activities can cause severe damage to the environment, either intentionally or unintentionally. Increased consumption and production of oil and gas worldwide leads to increased oil pollution, either from oil spills or from accidents associated with the process of production, transport and refining of oil.

The ecosystem, human health and agricultural activities are heavily affected by the processes of petroleum industries. Although oil companies seek to search for oil using the very sophisticated technology currently available, the oil industry and its associated processes have an impact on the environment. The environment surrounding oil operations is threatened as a result of these operations, whether on land or sea. As an illustration, the activities of oil exploration in seas housing oil

platforms may result in leakage of oil into the sea, threatening marine organisms—as happened in the Gulf of Mexico in 2010. Likewise, oil spills or leaking of oil derivatives into the seas and oceans from oil tankers as the result of accidents can occur; as happened with the tanker Exxon Valdez in 1989 which is considered the largest oil tanker related incident in the current era. Correspondingly, deforestation is another environmental impact which occurs as the result of searching for and extracting oil; as well as air pollution or explosion of oil pipelines which also contribute to land oil spills (O'Rourke & Connolly 2003). Figure 1-1 shows the various sources of oil pollution.

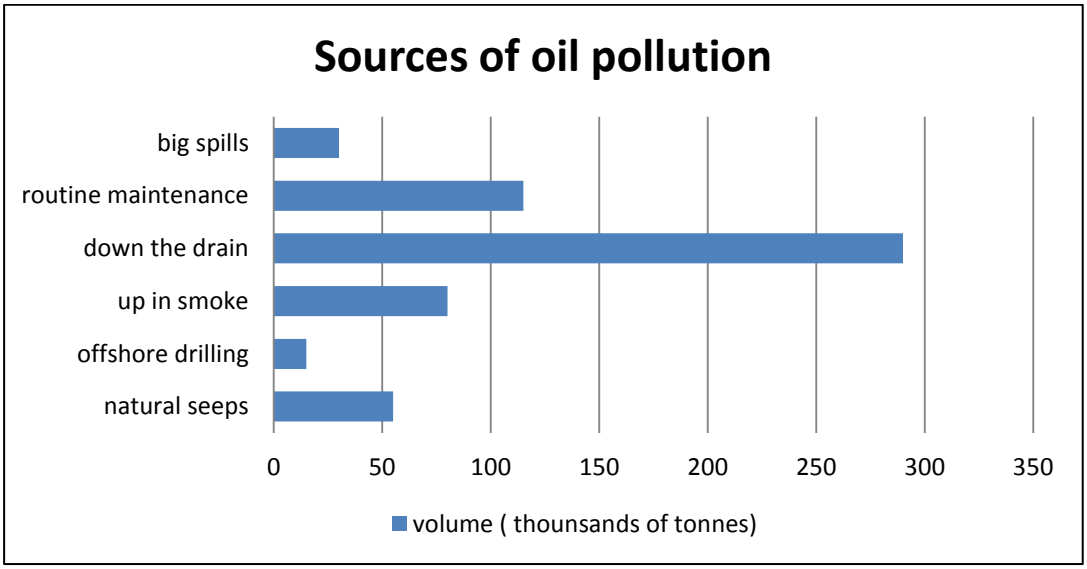

Figure 1-1: Sources of Oil Pollution
Source: http://www.information.org/cgi-bin/gpage.pl?menu=.txt&main=oil_causes.txt&s=oi

With the increasing concern for the environment from the effects of operations of oil companies, many International Oil and Gas Corporations (IOGCs) have sought to adopt strategies to preserve the environment. For example, Shell Oil Company believes that the effects of exploration projects for oil and gas on the health of the environment and water has become an important issue and therefore, it strives daily to reduce its use of clean water in their operations. As well, it works to fight against oil spills in accordance with modern strategies, and adopts strategies to reduce the effects of CO^2 on the environment, protect sensitive environmental areas, and maintain the cleanliness of the water (Shell 2010). In addition, many oil companies work with local governments and international organisations to develop appropriate

strategies to preserve the environment. According to the webpage of the British Petroleum Company (BP), the company works with several international agencies to monitor and control the negative environmental impacts of oil spills, and to develop the necessary plans to reduce these effects. The company seeks to learn from past experiences, and applies the necessary solutions in their operational activities. Moreover, Shell works in partnership with environmental organisations worldwide in order to improve their environmental standards applied in the management of the global energy sector. In 2010 it had worked on more than 30 projects with the International Union for Conservation of Nature (IUCN) and other organisations concerned with the global climate. These projects aim to continue cooperation to preserve the environmental resources in the Gulf of Mexico, and initiate and develop plans to ensure environmental responsibility in the Arctic region (Shell 2010).

Despite the efforts of oil companies, especially international firms, to preserve the environment, oil incidents are of increasing concern to governments and management of corporations. Accidents due to oil operations cause huge environmental disasters. Since the 1960s to the present time, many oil incidents such as oil spills from transport accidents, explosion of platforms and pipelines and accidents associated with refining operations have been witnessed by the world each year. In this respect, the distance between production sites and place of consumption requires the transportation of the oil, either through pipelines or tankers—the latter being the most widespread means between countries. For this reason, in the shipping of oil by sea there is the risk of accidents on ships which may cause leakage of crude oil into seas or oceans. O'Rourke and Connolly (2003) state that over the past twenty years there have been more than 30 oil spills worldwide, causing the leaking of about 10 million gallons or more in spills. Incidents of oil spills are spread across almost all regions of the world. However, there are areas considered hot spots or well-known occurrences of large oil spills. Table 1-1 shows oil incidents that have occurred over varying regions of the world.

Table 1-1: Areas Most Vulnerable to Oil Accidents

Region	Number of spills since 1960
Gulf of Mexico	267
North-eastern United States	140
Mediterranean Sea	127
Arab Gulf	108
Southern North Sea	75

Source: Regions in the World with Most Oil Pollution;
http://response.restoration.noaa.gov/faq_topic.php?faq_topic_id=1#2

Table 1-1 shows certain regions are more prone to oil accidents than other regions. The majority of accidents have occurred in the Gulf of Mexico where the world has witnessed several oil incidents that caused environmental pollution in the region. In the United States, and specifically in the Gulf of Mexico, there are more than 5,600 oil platforms (Pulsipher et al. 2001). The last oil accident to occur in the region was the explosion in 2010 of one of the platforms owned by BP. This accident caused large amounts of crude oil to leak which, in turn, caused substantial damage to the marine environment in the region. In contrast, the Arabian Gulf and North Africa are the most vulnerable to oil pollution as a result of increased amounts of oil borne by vector daily. According to Arabic CCN's website (2003) there are nearly 15 oil tankers loaded passing from the Arabian Gulf, which is approximately 17 million tons of oil. In addition, the International Atomic Energy Agency believes that the amount of oil passing from the Arabian Gulf will double by 2020. Thus, these regions are not free from such incidents as the oil spill that occurred during the second Gulf War which is the most environmentally damaging in this area.

1.3 Role of National and International Corporations in the Petroleum Industry

For the last fifty years the petroleum industry has been dominated by international oil and gas corporations. These firms tend to formulate economic and political conditions for their activities according to trends in the global oil industry. In 1973, 85% of global oil reserves were controlled by these companies. Consequently, multinational oil companies achieved significant progress in turnover and became occupied with advancing their position among the top global companies operating in the oil industry. However, the oil industry continues to change rapidly to face global

challenges in meeting the world's energy demands (Al-Moneef 2006; Escobar & Vredenburg 2011; Stevens 2008).

These changes involve global corporations and national companies, both of which have played a prominent role in the oil industry during recent decades. Despite the dominance of international companies in the oil industry and monopolising the industry for a period of time, the national oil corporations have quickly acquired a significant role in this industry (Pirog 2011; Stevens 2008). In this regard, in the words of Brinded (2007), national companies have become aware of their contemporary role in the oil industry. Thus, it can be said that domination and control in the petroleum industry is no longer by international companies but, rather, the role of national companies has become clearer in recent years. This comes after soaring oil prices and the need for national companies to achieve significantly increased oil revenues. This has increased their economic and political clout both in their region and also globally.

Despite international corporations having financial resources and high technology, national corporations dominate almost 70% of global oil reserves; whereas international companies control only 10% of the total global reserves (Jaffe & Soligo 2007). Furthermore, for the past thirty years national oil companies have played a significant role in determining the amount of oil produced worldwide. Of the top 20 oil companies in the world, there are 14 national oil producers (see Table 1-2). Moreover, the largest oil producer in the world is a national company owned by the Saudi Arabia Government (OPEC 2011). However, many of the major western oil companies continue to achieve a dramatically higher return on capital than national corporations of similar size and with similar operations.

National companies have other goals—which may affect their efficiency compared to global companies. Hartley and Medlock (2008) state that the national companies in many oil countries have non-commercial goals, thus they may be ineffective in achieving revenues compared to global firms (which are characterised as belonging to the private sector). National companies may be forced to sell their products to

local consumers at subsidised prices to implement the policy of the countries to which they belong (Olcott & Endowment 2007; Pirog 2011; Stevens 2008). Furthermore, many national oil companies contribute to the economic development in countries that depend on the oil sector for the development of their economy, for example, Libya, the United Arab Emirates (UAE) and Saudi Arabia. National oil companies have a responsibility towards their communities to promote vital areas of their country. In addition, national companies have become a gateway into the world economy. Olcott and Endowment (2007, p. 3) assert that: 'An example of the development responsibilities of a national oil company is in Kazakhstan, where KMG has clearly stated its aims. These objectives include integrating Kazakhstan into the world economy and ensuring that KMG's growth and development translates into more general economic growth in the nation'.

Table 1-2: Largest Oil Companies Ranked by 2010 Oil Equivalent Reserves

No	Name of Company	Worldwide Liquids Reserves (MB)	Worldwide natural Gas Reserves (BCF)	Total Reserves in Oil Equivalent Barrels, (MB)
1	National Iranian Oil Company (Iran)	137,010	1,045,670	315,757
2	Saudi Arabian Oil Company (Saudi)	260,100	275,200	307,143
3	Petroleos de Venezuela.S.A. (Venezuela)	211,170	178,860	241,744
4	Qatar General Petroleum Corporation (Qatar)	25,380	895,800	178,508
5	Iraq National Oil Company (Iraq)	115,000	119,940	135,503
6	Abu Dhabi National Oil Company (UAE)	92,200	212,000	128,439
7	Kuwait Petroleum Corporation (Kuwait)	101,500	63,000	112,269
8	Nigerian National Petroleum Corp. (Nigeria)	37,200	186,880	69,145
9	National Oil Company (Libya)	46,420	54,680	55,767
10	Sonatrach (Algeria)	12,200	159,000	39,379
11	OAO Gazprom (Russia)	0	171,176	29,261
12	OAO Rosneft (Russia)	18,110	27,933	22,885
13	Petro China Co. Ltd. (China)	11,278	65,503	22,475
14	BP Corporation (UK)	10,530	44,700	17,829
15	Egyptian General Petroleum Corp. (Egypt)	4,400	77,200	17,597
16	ExxonMobil Corporation (USA)	9,418	46,813	17,420
17	Petroleos Mexicanos (Mexico)	10,359	17,316	13,319
18	OAO Lukoil (Russia)	13,025	23.3	13,029
19	Royal Dutch/Shell (Netherlands)	4,528	47,135	12,585
20	Petroleo Brasilerio S.A. (Brazil)	10,302	13,039	12,531

Source: http://www.petrostrategies.org/Links/worlds_largest_oil_and_gas_companies.htm

However, international companies seek to deal with national companies in order to promote common interests. International oil and gas corporations have large financial resources, as well as the modern technology required to develop the oil industry. On the other side, national companies have the right of the concession for exploration and the search for oil. Thus, many international companies seek to obtain rights to prospecting for oil in the oil producing countries in conjunction with national companies. Brinded (2007, p. 2) indicated that Shell was delighted to be a partner of the National Oil Corporation in Libya where 'we look forward to contributing our capabilities in long-term projects to help meet the country's goals, including helping to build local capabilities'.

In recent years, specifically since the 1990s, there have been many fluctuations in the oil industry both in terms of oil prices and corporate structures. Oil prices were volatile in the 1990s, which impacted on the economies of some countries. In 1995 the market saw the price of crude oil falling to its lowest level in recent times. However, from the beginning of 2000 the price of oil has reached its highest level at $125 which contributed to the recovery of the economy of the oil-producing countries, including Arab petroleum exporting countries (Al-Moneef 2006; Berument et al. 2010; Malik & Awadallah 2011; Wilson 2012).

1.4 Arab Petroleum Exporting Countries

1.4.1 Overview of Arab Region

Arab Petroleum Exporting Countries are members of the Organisation of Arab Petroleum Exporting Countries (OAPEC). These countries are the UAE, Saudi Arabia, Bahrain, Qatar, Kuwait, Iraq, Syria, Egypt, Libya, Tunisia and Algeria. These countries are part of the Arab world, consisting of 23 countries (Al-Fityani & Padden 2010). There are many characteristics shared among each Arab Petroleum Exporting Countries, including religion and language.

In terms of language, the Arabic language is the main language in all members of Arab petroleum exporting countries. All Arab people speak Arabic which is the official language in all dealings within government departments. Besides, English is

in common use, particularly among educated classes, in tourist areas and in international business centres in most of those countries. On the contrary, Tunisia and Algeria use French as a second language after Arabic. Linguistic influence in almost all Arab countries is the result of the colonial period for these countries. For example, in Tunisia and Algeria, as a result of French colonisation, the use of the French language has become common, unlike other countries such as Kuwait and Qatar where the use of the English language is common as a result of British colonisation (Al-Khatib 2000).

Coupled with that, it is interesting to point out that religion is one of the most important aspects in Arab society as most Arabians are religious. Religion has thus shaped these countries' cultural background. All native Arabians are Muslim, but a very small percentage follows Christianity and Judaism. Most of this community of Christians are living in Egypt, whereas the Jews mainly live in Tunisia. There are churches and other places of worship for most of these religious groups. Most constitutions in Arab countries declare that Islam is the official state religion. Therefore, the laws in most Arab countries are inspired by the Islamic religion, especially in commercial transactions.

1.4.2 Oil and Gas in Arab Petroleum Exporting Countries

The lifeblood of the planet Earth is energy, which assists in expanding the global economy. Since the discovery of oil, the main resource of energy worldwide is oil and gas. Therefore, in the last few decades the oil and gas industry has become a global industry, where operations related to this industry are conducted in every corner of the globe; and many other industries also depend on petroleum products. However, as a result of the conflict relating to the acquisition of natural resources between developed countries and producing countries, international oil and gas corporations seek to acquire investment opportunities in oil rich countries. Accordingly, the importance of the Arab region lies in their oil and gas wealth which has enabled it to play an important role in the world’s oil and gas industry. This role has enabled many national firms to play a greater role in the global oil industry,

especially in oil-producing countries such as those located in the Middle East and North Africa (Pirog 2011; Stevens 2008).

In recent years, the world has become aware that oil is still the major source of energy. According to OPEC (2011), the world abounds with globally proven reserves estimated at almost 1,193 billion barrels. The share of national oil companies in these reserves is estimated at 88.33%, while 18.67% of reserves are controlled by international corporations. For this reason, many national companies seek to re-evaluate their strategies in line with the evolution of the global oil industry in order to advance their position in the oil industry which was previously under the control of international companies for a long period of time. It should be noted that according to the *Oil and Gas Journal* (2012), among the 20 largest oil companies in the world there are 14 national companies, including 10 national companies owned by the governments of countries in the Middle East and North Africa.

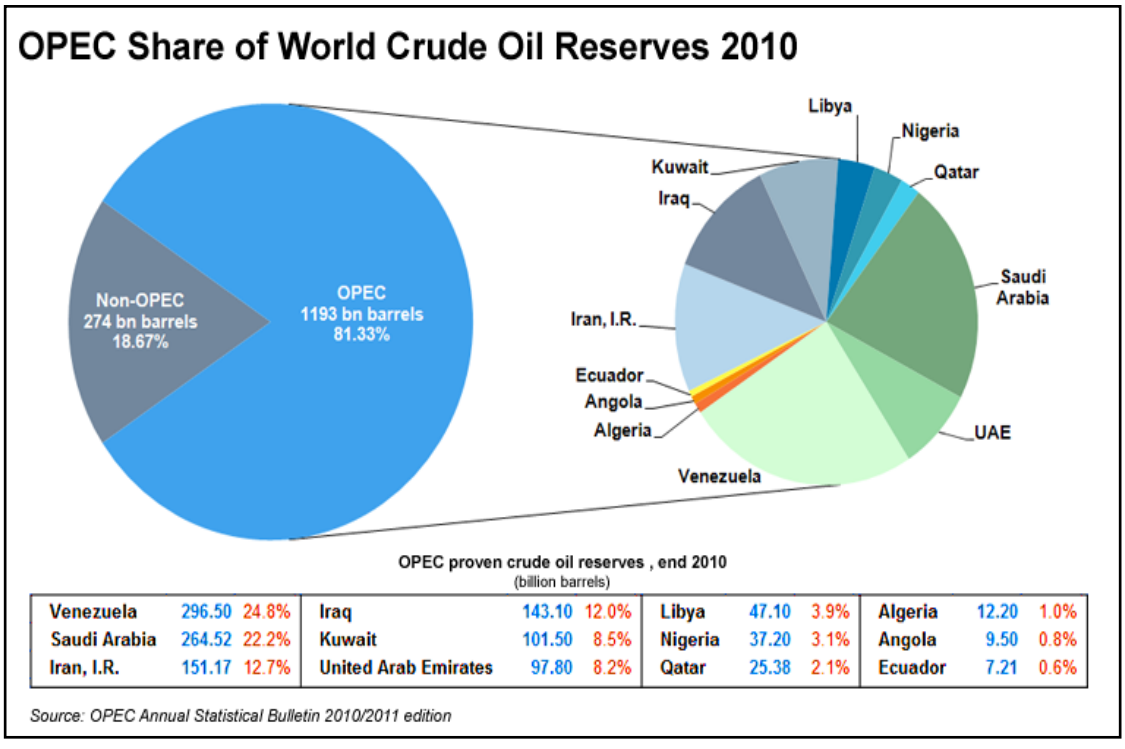

Figure 1-2: OPEC Share of World Crude Oil Reserves 2010

The Middle East and North Africa is a global centre of the oil industry. Two-thirds of members of the OPEC are from the Middle East and Africa. Thus, Arab petroleum

exporting countries dominate (at 57%) the world's oil reserves (OAPEC 2011), where proportions to the Arab countries are distributed as follows: Saudi Arabia 22.2%; Iraq 12%; Kuwait 8.5%; UAE 8.2%; Libya 3.9%; Qatar 2.1%; and Algeria 1.0%. This is an addition to Syria 0.18%; Egypt 0.36%; Tunisia 0.03%; and Bahrain 0.01%—which are not members of OPEC, but are members of OAPEC. Furthermore, oil experts estimate that the Middle East has the highest rate for a reserve to production (R/P), estimated at 80 years, while Libya has the highest rate in Africa at 60 years.

With respect to the production of oil, the Arab countries exporting oil provide about 27% of global oil production, which was measured at almost 72 million barrels per day in 2010. Daily production of crude oil by exporting Arab countries was 19.5 million barrels in 2010. Saudi Arabia has the largest oil production among the Middle East and North Africa nations at almost 8 million barrels per day (OAPEC 2011). However, production in general declined from 21.563 million barrels in 2006 to 19.773 million barrels in 2010.

In contrast, in respect to natural gas, less than half the world's natural gas reserves exist in the Middle East and North Africa and they produce about 17% of the world’s gas supply. The proven natural gas in OAPEC is estimated at 53,157 billion cubic metres. In 2010, Qatar had the largest natural gas reserves, estimated to be approximately 47% of total OAPEC reserves. Of equal importance is that the natural gas reserves of Arab Petroleum Exporting Countries increased by more than 112% for the year 2006. This increase in gas reserves has enabled some countries in the Arab world such as Qatar and Saudi Arabia to occupy an advanced position in the world regarding proven natural gas reserves where they are ranked third and fourth respectively after Russia and Iran.

Table 1-3: Proven Crude Oil Reserves in OAPEC 2006-2010

Country	2006	2007	2008	2009	2010
UAE	97.9	97.9	97.9	97.9	97.9
Bahrain	0.1	0.1	0.1	0.1	0.1
Tunisia	0.4	0.4	0.4	0.4	0.4
Algeria	12.2	12.2	12.2	12.2	12.2
Saudi	264.3	264.2	264.1	264.6	264.5
Syria	3	2.3	2.3	2.3	2.3
Iraq	115	115	115	115	143.1
Qatar	26.2	25.1	25.4	25.4	25.4
Kuwait	101.5	101.5	101.5	101.5	101.5
Libya	41.5	43.7	43.3	46.42	47.1
Egypt	3.7	3.9	4.2	4.4	4.5
OAPEC	665.6	666.1	667.2	670.1	698.9
OPEC	935.8	948.1	950.5	952.5	996.1
Total World	1151.6	1170.8	1169.1	1148.1	1232.3
% OAPEC to OPEC	0.71126	0.70256	0.70195	0.70352	0.70164
% OAPEC to world	0.57798	0.56893	0.5707	0.58366	0.56715

Source: Annual report 2011, OAPEC

From the beginning of the second decade of the third millennium, the Arab region has witnessed popular uprisings against power regimes. These popular uprisings represent a historic turning point in the Arab region. Because the Arab region represents economic importance, these events have economic impacts on the region firstly and then on whole world in a second phase (Malik & Awadallah 2011). These implications have become clear on the oil markets. Malik and Awadallah (2011) established that the Arab Spring has impacted on economies of countries worldwide due largely to global oil markets. The oil price witnessed sharp run-ups as well as fluctuations in the pattern of oil production. For example, oil revenues in Arab petroleum exporting countries, excluding Libya, have seen growth contrary to oil-importing countries which experienced slower growth. On this basis, the expected growth of some oil-exporting countries increased from 5.1% in 2010 to 6.5% in 2011 accompanied by increases in levels of oil production. On the other hand, political turmoil has affected Arab countries where real GDP growth slumped from an average of 4.4% in 2010 to -0.5% in 2011.

Table 1-4: Crude Oil Production in OAPEC 2006-2010

Country	2006	2007	2008	2009	2010
UAE	2568	2529	2572.2	2241.6	2323.8
Bahrain	183.3	184.3	182.2	182.4	181.1
Tunisia	96.5	70	85	82	81.7
Algeria	1426	1398	1356	1216	1189.8
Saudi	9208	8978.6	8532	8184	8165.6
Syria	377.1	370	390	375.1	387
Iraq	1952.2	2035.2	2280.5	2336.2	2358.1
Qatar	802.9	845.7	842.8	733	733.4
Kuwait	2644.5	2574.5	2676	2261.6	2312.1
Libya	1751.2	1673.9	1721.5	1473.9	1486.6
Egypt	554	562	528.2	564.3	554.3
OAPEC	21563.7	21221.2	21166.4	19650.1	19773.5
OPEC	31841.6	31342.2	31570.3	28927.1	29830
Total World	80651.3	85606.3	84049.2	70908.6	72365.5
% OAPEC to World	0.26737	0.24789	0.25183	0.27712	0.27324
% OAPEC to OPEC	0.67722	0.67708	0.67045	0.6793	0.66287

Source: Annual report 2011, OAPEC

Table 1-5: Proven Natural Gas in OAPEC 2006-2010

Country	2006	2007	2008	2009	2010
UAE	6040	6072	6091	6091	6091
Bahrain	92	92	92	92	92
Tunisia	64	55	65	65	65
Algeria	4504	4504	4504	4504	4504
Saudi	7153	7305	7570	7920	8016
Syria	290	290	285	285	285
Iraq	3170	3170	3170	3170	3158
Qatar	25636	25636	25466	25366	25201
Kuwait	1780	1784	1784	1784	1784
Libya	1420	1540	1540	1549	1495
Egypt	1910	2024	2152	2186	2466
OAPEC	25059	52472	52719	53012	53157
OPEC	86747	87140	90290	90669	94292
Total World	178320	172939	176362	188254	191893
% OAPEC to world	0.14053	0.30341	0.29892	0.2816	0.27701
% OAPEC to OPEC	0.28887	0.60216	0.58389	0.58468	0.56375

Source: Annual report 2011, OAPEC

1.5 Background and Purpose of the Study

Over the last few decades corporate social accounting has developed to include environmental activities and environmental issues such as environmental litigation and environmental pollution (Parker 2011; Yusoff & Lehman 2005). These issues have emerged as more prominent economic, social and political problems throughout the world (Joshi & Gao 2009; Yusoff & Lehman 2005). Therefore, environmental accounting has emerged to attract attention of international communities and environmental bodies for its role in increasing transparency and disclosure in corporations about these environmental activities and environmental issues (Mahadeo et al. 2011). This, in turn, has created the prompt attention of international corporations to demonstrate their activities and practices, particularly with regard to environmental activities (Aerts et al. 2008; Islam 2011; Williams 2004). Industrial companies, particularly in the oil industry, may be involved in environmental calamities resulting from environmental incidents which affect the surrounding environment (O'Rourke & Connolly 2003; Summerhays & De Villiers 2012). These environmental incidents yield to an increase in public concern and pressure on companies to disclose environmental activities which may cause environmental incidents (Cormier et al. 2011; Cormier et al. 2005; Islam 2010). Accordingly, society has pressured companies to make more efforts to avoid accidents that cause environmental damage and to disclose information about environmental disasters.

On the other hand, international companies face many problems in terms of legality of information and compliance with the regulations of the local region when disclosing environmental information in dissimilar countries because of the variation in economic conditions and government regulations (Tan 2009). In such a situation, Islam (2010) states that when conflict arises between international companies and local communities regarding disclosure of environmental activities, international companies must adopt clear strategies for the disclosure of environmental activities as a result of industrial operations, whether their operations are in developed countries or developing countries. Accounting literature has pointed to the existence of differences in accounting practices for environmental disclosure between countries

(Holland & Boon Foo 2003; Yusoff & Lehman 2005). In the last two decades, there have been increased calls for further scrutiny and international comparisons of environmental disclosure practices. Moreover, studies on environmental disclosures by companies have increased in developed countries such as the United States of America (USA), the United Kingdom (UK), Australia, Canada, Japan, and the European Union (Bhasin 2012; Buniamin 2010; Haider 2012; Ismail & Ibrahim 2012). It is likely that the increase in these studies in developed countries is due to the expansion in the demands of stakeholders for companies to include social and environmental aspects; in addition to the development of the social role in developed societies (Stakeholder Theory) (Elijido-Ten 2007; Huang & Kung 2010) and the role of organisational structures of companies operating in the same sector (Institutional Theory) (Cormier et al 2005; Yang & Rivers 2009). In contrast, there is still limited awareness of environmental issues in developing countries. Therefore, developing countries suffer from lower social expectations and stakeholder demands regarding the awareness of environmental issues. In response to the limited amount of literature which focuses on developing countries, this study will examine whether local companies in the Arab world make environmental disclosures in their annual reports as international firms. Environmental issues have received considerable attention from the public in the Arab world because of gaps between business activities or actions and local community concerns (Al-Janadi et al. 2011; Ismail & Ibrahim 2012).

Over the past century there has been a dramatic increase in attention to the oil sector in many countries that have petroleum resources which provide facilities for international corporations to invest in the oil sector (Elbadawi & Gelb 2010; Longwell 2002; Stevens 2008). Oil-producing countries have become heavily dependent on the industry in its economy, such as oil producing Arab countries for oil. The oil sector is one of the most important economic sectors in Arab Petroleum Exporting Countries, where many local and international companies operate. The economy in the Arab world is a consumer economy, relying mainly on the resources (oil and gas) being depleted, despite the strong push towards programs of development of the economy post-1970s. The economies of most Arab petroleum

exporting countries are still linked organically, mainly to the oil and gas sector, and in particular in the provision of financial resources. The resources of oil contribute to economic and social development as a source of funding or energy. The oil sector in this region has witnessed a remarkable development in recent years in various fields starting from exploration, production and manufacturing processes. In the last few years, the daily production rate of crude oil has increased due to increased investment by governments and foreign companies in this sector (OAPEC 2011). The oil sector contributed approximately 92% of revenue in many Arab petroleum exporting countries during the period from 2005-2008 (Al-Moneef 2006; Elbadawi & Gelb 2010). This development in the oil sector and increased oil investment has resulted in various international companies working and investing in the industry in the Arab world. Thus, it is very probable that there is a difference in accounting procedures and disclosure practices between different companies.

To date, researchers have argued that national differences in practices between firms in the same business are not particularly significant, but the differences between overseas firms are very important (Joshi & Gao 2009; Miroshnik 2002). The impact of existing differing practices should be recognised, whether big or small or in international or local companies. Thus, disclosure processes are expected to differ between local and international companies operating in the oil sector (Islam 2011; Saida 2009). This remains the case, despite the impact of the oil sector in improving economies and multi-national relationships. Due to a lack of research relating to how environmental information is disclosed in annual reports of national and international companies operating in developing countries (including the Arab region), further investigation is required (Ahmad 2004; Al-Tuwaijri et al. 2004; Seetharaman et al. 2010).

Therefore, this study aims to rectify this gap in the literature regarding the accounting practices of environmental disclosure between countries. Thus, it focuses on the explanatory factors such as level of economic development of countries, political and civil systems, and their legal systems. Through the interaction of these variables, socio-political and economic pressure may, therefore, explain the variation

in the extent of environmental disclosure information presented in annual reports across national boundaries. On the other side, Arab countries exporting oil are of particular interest to environmental studies. In spite of some shared cultural factors, economic and political life vary somewhat. These dissimilarities support the study and give impetus to a broader study. Evidence of comprehensive research in the Arab world into corporate environmental disclosure is scant (Al-Janadi et al. 2011; Ismail & Ibrahim 2012). In particular, the researcher is not aware of any previous detailed study of environmental disclosure practices of international oil and gas corporations in the Arab region. Furthermore, despite several comparative studies of cross-country practices in Western Europe, USA and Canada, it has to be recognised that there has not, until now, been any detailed comparative analysis of corporate environmental disclosure between local companies and international corporations in the oil sector specifically.

This thesis compares National Oil and Gas Corporations (NOGCs) belonging to the Arab petroleum exporting countries; (1) Algeria; (2) Bahrain; (3) Egypt; (4) Kuwait; (5) Libya; (6) Qatar (7) Saudi Arabia; (8) Tunisia; and (9) United Arab Emirates (UAE) and International Oil and Gas corporations (IOGCs) operating in Arab petroleum exporting countries: (1) Australia; (2) Canada; (3) France; (4) Germany; (5) Italy; (6) Japan; (7) Russia; (8) UK; and (9) USA. As with the majority of other environmental disclosure information studies (Beattie et al. 2004; Ebimobowei 2011; Suttipun & Stanton 2012b; Zunker 2011), annual reports are examined for details related to specific items of environmental disclosure. These items are listed in Table 4-2. Items of environmental disclosure found in annual reports are measured using unit of analysis (word) associated with content analysis and an environmental disclosure index (EDI). These two different measurement bases are adopted to examine if their usage leads to potentially different results in variations in the conclusions drawn from the research study.

1.6 Research Questions and Objectives

There has been pressure on companies, particularly international corporations in the oil sector, concerning their environmental activities because of the increase in

environmental accidents, particularly in the oil industry. Moreover, there is a growing role for national companies in the oil sector currently, especially in oil-producing countries. Therefore, this study examines the possible factors that may have some level of impact on differences or similarities in environmental disclosure. It aims to identify the similarities and/or differences between local and international corporations. Prior studies such as those conducted by Islam et al. (2008) and Jenkins and Yakovleva (2006) tend to stop at descriptions of cross-country differences in levels of environmental disclosure information in annual reports. This study attempts to go one step further by explaining observed differences in this field. Most specifically, the main concern of this study is to examine the notion that disclosure by international corporations requires disclosing not only environmental impacts on the home country's society, but also environmental information by their subsidiaries to the host country's society (Petkoski & Twose 2003).

National and international companies disclose their environmental practices to achieve their objectives of disclosure. However, it is not obvious whether companies operating in the oil sector are following similar procedures and techniques in disclosure processes. The main research questions have been designed as follows:

RQ1: To what extent are there differences between national oil and gas corporations (NOGCs) and international oil and gas corporations (IOGCs) in regard to the quantity of environmental disclosure (QTED) and quality of environmental disclosure (QLED) in their annual reports?

RQ2: What are the factors that explain differences between environmental disclosure practices (EDPs) in national oil and gas corporations (NOGCs) and international oil and gas corporations (IOGCs) in the oil sector?

RQ 3: What are the differences between national oil and gas corporations (NOGCs) and international oil and gas corporations (IOGCs) in regard to the disclosure of environmental data in their annual reports and the quality of that data?

To answer these questions the study will investigate environmental information in annual reports of companies, national and international, operating in Arab petroleum exporting countries and then test for a possible relationship between the quantity and quality of environmental disclosure and a variety of factors determined by the above questions. Annual reports from 2008, 2009 and 2010 will be used in this study. In this context, annual reports of 2011 and 2012 are excluded because some Arab countries such as Egypt, Libya and Tunisia have witnessed the Arab Spring revolution in 2011 which caused international companies to cease their operations in the region. Therefore, the researcher has distanced the effect of the Arab Spring revolution on the results of the study. With regard to the annual reports for 2012, most of the national companies have yet to publish these. Content analysis by word count will be employed to investigate and measure environmental disclosures. The study will use both descriptive and quantitative analysis methods to answer the research questions.

To derive a final score and answer the questions the study, this research study has four major objectives. Firstly, it will evaluate the level of environmental disclosure relating to annual reporting by international oil and gas corporations in Arab petroleum exporting countries. Secondly, the study will explore whether corporate environmental disclosure in national oil and gas corporations is different from that of international oil and gas corporations. Thirdly, it will investigate corporate disclosure practices and the role of stakeholders in disclosure processes using stakeholder theory and institutional theory in the host country's context (Arab World). Finally, this research will provide outcomes to assist local firms by informing them about the nature of the relationship between international oil and gas corporations in terms of environmental information and methods of disclosure in annual reports.

1.7 Research Approach

In order to achieve the goals of the research, the research methodology is divided into two parts. The first part is aimed at measuring the quantity and quality of environmental disclosure; whereas the second part is aimed at analysing the effect of

national variables on the quantity and quality of environmental disclosure by companies.

1.7.1 Quantity and Quality of Environmental Disclosure

Content analysis is used in this research as a technique to examine the quantity of environmental disclosure and the quality of environmental disclosure in annual reports. According to Krippendorff (2004, p. 21), content analysis is 'a research technique for making replicable and valid inferences from data'. Moreover, Aribi (2009) justified the use of content analysis as a relatively objective approach. Furthermore, it has been widely used in accounting literature generally and in studies of social and environmental disclosure specifically (Ahmad et al. 2003; Buniamin 2010; Campbell et al. 2003; Chen & Bouvain 2009; Cowan & Gadenne 2005; Da Silva Monteiro & Aibar-Guzmán 2010; De Villiers & Van Staden 2006; Elijido-Ten 2009; Islam 2011; Kuasirikun & Sherer 2004; Tilt 2001).

To examine the differences between the quantity of environmental disclosure and the quality of environmental disclosure in companies' annual reports, both indexing and unitising content analysis procedures are adopted using words as the recording unit and the measurement unit. Using words as a record and measure in social and environmental research has been discussed extensively by many researchers (Ahmad 2004; Campbell et al. 2003; Islam et al. 2010; Ratanajongkol et al. 2006). In this study, environmental disclosure practices are measured through the number of words disclosed and classified into 16 items as shown in Table 4-2 and three categories of evidence (monetary, quantitative, and qualitative). This approach was derived from an extensive review of the previous literature.

In this research study, the disclosure medium used to address the objectives related to disclosure of environmental information is annual reports. Furthermore, use of annual reports allows for comparisons with previous studies on environmental disclosure in annual reports of companies.

1.7.2 National Factors and Quantity and Quality of Environmental Disclosure

This study seeks to analyse the relationship between the quantity and quality of environmental disclosure and the national factors—Political and Civil System (PCS); Legal System (LS) and Level of Economic Development (LED). The objective of this analysis is to explain the difference in the quantity and quality of environmental disclosure using the national variables in surveyed countries where the national variables could contribute to explaining these differences. To achieve this, this study adopts the following variables: (1) level of political rights and level of civil freedom as a measure for political and civil system; (2) Common Law (COML); (3) Civil Law (CIVL); (4) Islamic Law (ISL); (5) Common and Islamic Law (COMISL); (6) Civil Law and Islamic law (CIVISL) as dummy variables to measure for Legal System; and (7) Index of Economic Freedom (IEF) as a measure for level of economic development. Adoption of these variables in this study is in accordance with many previous studies (Archambault & Archambault 2003; Barniv et al. 2010; Cormier et al. 2005).

1.8 Scope of this Study

This study is limited to identifying the level of environmental disclosure by companies. This research will involve annual reports of all companies in the OAPEC, including local firms and international firms which operate in the oil sector to investigate differences in environmental disclosure. This study will compare national oil and gas corporations and international oil and gas corporations, taking into account the political factors and economic and cultural relations between the Arab region and the mother country of international companies. By adopting this focus, the researcher hopes to limit the impact of internal factors upon the results.

1.9 Contribution and Benefits of this Study

The need for research of this type is acknowledged in the Arab World and contributes to accounting literature in the region in general. The contribution of this study is not confined to one country in particular, but extends to most Arab

petroleum exporting countries. Additionally, it is intended to provide an overview of some developed countries and those corporations operating in the Arab region. Therefore, this study contributes to the literature on environmental disclosure practices in several ways. First, this study contributes to the literature regarding developing countries and the relationship between local firms and international corporations regarding environmental disclosure practices in the Arab region. Moreover, the research also attempts to explain how and to what extent the annual reports of local companies and international companies differ. It is expected that this study will provide information to organisations interested in the environment to clarify the picture regarding environmental pollution in the oil sector in the Arab region. Furthermore, this study seeks to highlight the relationship between investment in the oil sector and the environmental performance of oil companies.

The study is conducted in more than one country and will enhance current knowledge about economic and political influences on organisational activities, in particular the petroleum industry. Conclusions derived from the study will assist international companies in how to deal with the local environment; similarly, local companies can also enhance their knowledge on how global companies deal with environmental issues so that they can adopt the effective environmental practices of international companies. This study seeks to identify these differences in dealing with environmental issues and provide some practical recommendations.

This study also contributes to the literature with regard to disclosure of the environmental practices in the annual reports and the use of these reports in the local oil companies. Most local oil companies operate in the domestic environment. Therefore, this study seeks to highlight the importance of these reports to the disclosure of the environmental activities of oil companies to the local communities. This study seeks to increase environmental awareness among communities through the disclosure of corporate environmental activities in their annual reports and the extent of the commitment of these companies to the community in preserving the environment. On the other hand, this study contributes to increasing environmental awareness among managers of local companies by showing differences in the extent

of environmental information disclosed between local companies and international corporations. Thus, this study contributes to the adoption of environmental policies that will help reduce the environmental impacts of the activities of local companies on the surrounding environment. Moreover, this research provides a benefit from methods of disclosure in annual reports in international companies about their environmental activities which contributes to find criteria for disclosure of environmental information in the annual reports to suit local environmental and local companies.

Furthermore, this research helps to further the knowledge relating to the process of environmental disclosure in the oil sector in line with the political dimensions and economic development of Arab countries. Therefore, studying the different practices of environmental disclosure and the effects of political and economic dimensions facilitates and enables management in Arab companies to obtain greater benefits in managing their operations and demonstrate how they can implement programs that will portray a positive image of their companies with respect to environmental activities. Furthermore, results of this study can be used to provide insight to OAPEC members on environmental disclosure practices and therefore an understanding of the environmental disclosure strategies in international companies and compare them with companies in member countries.

1.10 Outline of Thesis

The material developed for this study is structured into seven chapters as follows:

Chapter 1: Introduction

This chapter provides an overview of the petroleum industry and the role of national and international corporations in this industry. Furthermore, it highlights the research problems and background of this study and explains its purpose and objectives. After that, it poses the research questions. A summary of the research approach used and contribution of the thesis to the literature is provided. Finally, the outline of the thesis is reviewed.

Chapter 2: Overview of Environmental Disclosure in the Literature

This chapter provides an overview of studies that addressed environmental disclosure practices in many countries worldwide in order to understand the focus of these studies and the sectors covered in the research and then determine if there are any gaps in the current literature. Furthermore, national factors have been considered in this chapter to examine the influence of these factors on environmental disclosure practices.

Chapter 3: Theoretical Framework and Development of Hypotheses

Stakeholder theory and institutional theory are reviewed in order to give an overview of the most significant environmental studies addressing these theories and justification for the application of those theories in accounting studies. In addition, the hypotheses that may explain solutions to the research problem have been formulated in this chapter.

Chapter 4: Research Methodology

The methodology used in this study, namely, content analysis and environmental disclosure index are described in this chapter. The study population is also discussed in this chapter.

Chapters 5: Findings of Quantity and Quality of Environmental Disclosure

This study comprises two parts relating to the study findings. Chapter 5 presents the first part of the results, whereas the second part will be presented in chapter 6. Chapter 5 reviews the most significant results relating to the quantity and quality of environmental disclosure contained in the annual reports for both national companies and international corporations down to the differences between them in the practice of environmental disclosure.

Chapters 6: Influence of National Factors on Quantity and Quality of Environmental Disclosure

Chapter 6 highlights the impact of national factors on environmental disclosure practices in both national and international corporations. Results of statistical tests such as multiple regression analysis and independent t-test are presented in this chapter in order to explain the differences between the quantity and quality of environmental disclosure, based on the independent variables.

Chapter 7: Summary and Conclusions

This chapter discusses in detail the findings summarised in chapters 5 and 6. Possible explanations and implications for various environmental disclosure practices among national and international organisations and the influence of national factors on these practices in these organisations are considered. The contributions and limitations of this research are also discussed. Finally, suggestions for future research regarding environmental disclosure practices in petroleum organisations context are offered.

2.0 CHAPTER TWO: OVERVIEW OF ENVIRONMENTAL DISCLOSURE IN THE LITERATURE

One of the most significant current discussions in accounting philosophy is social and environmental disclosure. In recent years, social and environmental disclosure has received much attention by many researchers, academics, governments, and international organisations and bodies. Growing interest in social and environmental accounting is due to an expansion in the activities of companies and the impact of these activities on the environment surrounding these companies; as well as the emergence of issues such as workers, trade unions, sustainability and the environment. Gray (2008, p. 8) reported that 'employee, employment and union issues experienced this attention in the 1970s and into the early 1980s. Environmental issues - together with sustainability - have experienced this attention since 1990'. During the stages of development of accounting literature, social and environmental disclosure had appeared as a companion to social responsibility during the period 1960-1970. Environmental disclosure had not appeared separately, but was part of social disclosure.

The main aims of this chapter are (1) to provide an overview of social and environmental accounting through a review of prior accounting studies and research and (2) to review existing theories in the accounting literature in order to understand management motivations underlying organisations' environmental disclosure practices. This chapter seeks to identify some significant gaps in the social and environmental accounting field in relation to research within the context of developing countries. Moreover, a review of environmental disclosure practices in corporations operating in developing countries compared with corporations operating in developed countries is presented.

2.1 A Historical Overview of the Development of Environmental Accounting

Over the past 40 years accounting literature has witnessed a growth in studies addressing social and environmental accounting (SEA) (Parker 2011). It is worth noting that many accounting studies have paid attention to the study of social and environmental disclosure in companies in recent years (Belal et al. 2011; Haider 2012; Parker 2011). Parker (2011, p. 1) stated that 'SEA research is moving from the margins of accounting literature to centre stage' after it was considered underdeveloped at the beginning of the 1970s (Parker 2005). A number of issues arising during that period, such as those relating to workers, employees and trade unions, contributed to the emergence of social studies, as well as pressure from stakeholders as a result of the expansion in the activities of companies. Therefore, there had been some studies (such as Ehsan & Kaleem 2012; Mahmood & Riaz 2008; Sarmento et al. 2006) conducted to explain the relationship between corporations and society. Carmona and Ezzamel (2009) established the importance of studying environmental and social accounting to identify the relationship between organisations and society and thus determine the role of organisations in communities towards their responsibility regarding activities carried out by them and having an impact on the surrounding community. However, at the beginning of the seventies, there was not a significant change in accounting structures and environmental matters where it was not often identified separately at this time (Haider 2012; Parker 2011).

Accounting is a social science which affects society and provides its services to broad categories of society. Therefore, social and environmental accounting aims to achieve the same objectives as any other field of accounting where it seeks to measure and analyse the events in the social and environmental sphere of companies in order to provide information to stakeholders (Bebbington & Thomson 2007). Arvidsson (2010) asserted that social information provided by companies contribute to decision-making by stakeholders. This view is supported by Ball (2007) who claimed that organisations provide information about products; and the interests of

consumers and the interests of employees, community activities and environmental impacts of stakeholders are part of the accounting function of social and environmental disclosure. Therefore, given the importance of environmental accounting and social accounting as a facet of accounting, many accounting researchers have examined the issue and sought to provide different definitions of SEA. Table 2-1 shows the principal definitions of social and environmental accounting in accounting literature.

Table 2-1: Definitions of Social and Environmental Accounting in Accounting Literature

Source	Definitions
Gray, Owen & Maunders (1987, p. 9)	Social and environmental accounting is the process of communicating the social and environmental effects of organisations' economic actions to particular interest groups within society and to society at large.
Mathews and Perera (1996, p. 364)	At the very least, social accounting means an extension of disclosure into non-traditional areas such as providing information about employees, products, community services and the prevention and reduction of pollution. However, the term 'social accounting' is also used to describe a comprehensive form of accounting which takes into account externalities.
Gauthier et al. (1997, p. 1)	Environmental accounting is that aspect of accountancy which, while indistinguishable from financial and management accounting, deals more specifically with environmental concerns; that is, it is an aspect of the information system that enables data collection and analysis, performance follow-up, decision-making and accountability for the management of environmental costs and risks.
Schaltegger and Burritt (2000, p. 30)	Environmental accounting is a branch of accounting that deals with activities, methods and systems; recording, analysis and reporting; and the environmentally induced financial impacts and ecological impacts of a defined economic system.
Deegan et al. (2003, p. 3)	Environmental accounting is a broader term that relates to the provision of environmental-performance related information to stakeholders both within, and outside, the organisation

Environmental and social accounting has passed through several stages during its development. The first of these stages focused on social accounting (Hecht 2007),

involving social issues, workers and social welfare (Hecht 2007; Mathews 2009; Seetharaman et al. 2010). Attention to these issues by social accounting was not at the expense of the economic interests of companies and their stakeholders, but sought balance between social issues and achieving the goals of stakeholders (Hibbitt & Collison 2004). During the 1970s, many accounting researchers focused on the concept of socio-economic development, but this concept was later replaced by social accounting. Gray and Laughlin (2012) asserted that attempts to explain corporate social accounting begun at the end of the 1970s in order to provide the same concepts as social accounting. In this context, Parker (2005, 2011) established that the general trend of many studies between 1970 and 1980 focused on social accounting rather than environmental accounting. However, by the year 1980 accounting studies began to focus on environmental issues in many communities in developed countries (O'Connor 2006). Kaya and Yayla (2007, p. 5) state that 'during the 1980s, the public stature of environmentalism had increased significantly and this was reflected in some authors broadening of the term 'social accounting' to 'social and environmental accounting'. Parker (2011) undertook a study that addressed social and environmental accounting where the results of the study showed that studies in environmental accounting became of interest to many researchers during the period between the end of the 1980s and the beginning of the third millennium (See Figure 2-1).

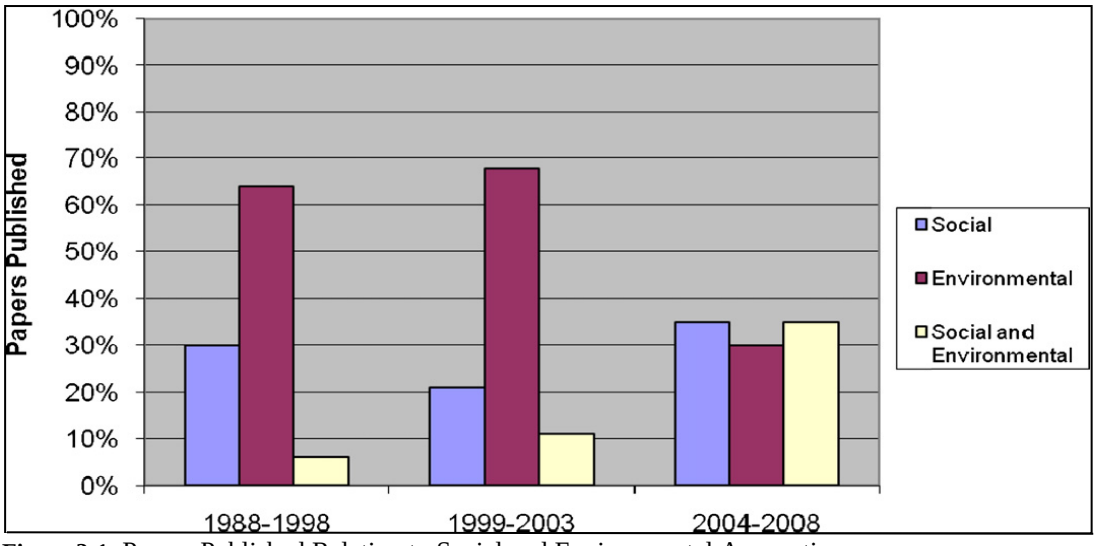

Figure 2-1: Papers Published Relating to Social and Environmental Accounting

During this period, the accounting literature focused on environmental issues in corporations by providing information related to environmental activities in annual reports of corporations (Ismail & Ibrahim 2012). During the 1990s there was increased growth in sustainable business and environmental awareness in corporations, as well as the roles and responsibilities of firms towards environmental protection (Parker 2011). Additionally, some corporations began to provide social and environmental reports in order to improve the image of their companies regarding social activities. Deehan, C, et al (2002) concluded that the annual reports of some corporations contain social information in response to perceived community concerns as measured by media attention. However, large companies keep under the pressure of public scrutiny regarding the disclosures in the financial reports. Liu, X (2009, p. 597) reports that "The literature suggests that larger firms are more likely to be under public scrutiny and are expected to have higher propensity on environmental disclosure". Kaya and Yayla (2007) believe that providing social and environmental reporting, as well as economic performance, is an important way for companies to communicate their corporate responsibility to stakeholders and improve transparency and public trust. Moreover, accounting studies have adopted and used theories to explain the results of research on environmental accounting. Cho et al. (2009) indicated that the use of theories such as political economy theory, legitimacy theory and stakeholder theory contributes to discussions regarding social and environmental practices.

The period post 2000 has witnessed an increased growth of studies in the social and environmental accounting field. During this period most studies covered social and environmental practices and sought to examine the faithfulness of social and environmental reporting practices, as well as using these studies as multiple sources of data (O'Connor 2006). Moreover, social and environmental accounting is still used in the augmentation of theoretical frameworks (Deegan 2002). Social and environmental accounting fields have provided explanations on the different theoretical perspectives at the policy implementation level (Parker 2005). As well as this, the studies in this period sought to show determinants of social and environmental disclosure and the motivations behind decisions of social and

environmental disclosure. Some studies indicate a firm's size as a factor of disclosure (See e.g. Ahmad et al. 2003; Liu & Anbumozhi 2009; Naser et al. 2006), as well as ownership and its effect on the quality of social and environmental information (Guthrie & Abeysekera 2006; Rashid & Lodh 2009), while others such as Campbell et al. (2006) and Hassan and Ibrahim (2012) studied public profiles as disclosure drivers.

Furthermore, attention of stakeholders in organisations to social and environmental issues provides the motivation for many accounting researchers and academics to study whether the impact of stakeholders on accountability has a role on disclosure practices. Parker (2005) notes in his research that researchers in accounting fields tend to focus their research on social and environmental issues as a result of increased pressure on organisations from lobby groups, governments and other sectors of the business community. Some studies investigated stakeholders' needs, recognition and perceptions in relation to social and environmental disclosures (Belal & Roberts 2010; Huang & Kung 2010). Other studies focused on the influence of non-government organisations on social and environmental disclosure (Deegan & Blomquist 2006; Doh & Guay 2006).

In conclusion, in recent years there has been a growing interest in environmental accounting studies to standardise disclosure practices. Owen (2004) reported that there are great efforts occurring at the present time by professional companies for the standardisation of practice. For example, the Sustainability Reporting Guidelines have become commonly used in many companies. Kaya and Yayla (2007) reported that, currently, there are more than 660 companies in 50 countries using Sustainability Reporting Guidelines. However, it is interesting to point out that most of the recent studies relating to environmental or social accounting have focused on developed countries rather than developing countries, and have reflected positively on environmental accounting practices in developed countries such as the USA, the UK, Australia, Japan, EU countries and Canada (Belal et al. 2011; Haider 2012; Ismail & Ibrahim 2012; Kaya & Yayla 2007).

2.2 Environmental Disclosure and Levels of Disclosure

With the growing interest in environmental accounting in recent years, environmental reporting is at the forefront of developments in accounting disclosure. Rizk et al. (2008) reported that environmental accounting and reporting are not simply recent phenomena. Many studies observed that disclosure had increased steadily during the late 1980s. For example, in Spain, García-Ayuso and Larrinaga-Gonzélez (2003) concluded that since the early 1990s, Spanish firms have witnessed a significant increase in environmental reporting. Moreover, in another study conducted on USA firms by Holland and Boon Foo (2003), they found that environmental disclosure in annual reports has increased since 1989. However, this increase in providing environmental information is not limited to a particular country, but has occurred on a global level. Moneva and Llena (2000, p. 14) state: 'We have found that environmental information has significantly increased at the global level'. Additionally, a study by KPMG (2002) to investigate disclosing environmental information, which included 19 countries, indicated that the practice of providing environmental information has increased among most surveyed firms (García-Ayuso et al. 2003). Thus, it can be said that environmental disclosure has increased worldwide since 1990 (García-Ayuso & Larrinaga-Gonzélez 2003; Parker 2011). It is also worth noting that the number of organisations which provide environmental disclosure has increased in many countries as pressure increases from many interest groups to provide environmental information.

Studies conducted on environmental disclosure in companies indicate that the number of companies providing environmental information has steadily increased in many countries, especially in developed countries (Akrout & Othman 2013; Criado-Jiménez et al. 2008; Da Silva Monteiro & Aibar-Guzmán 2010). Jose and Lee (2007) also concluded that there has been an increase in the number of companies providing environmental disclosures. Moreover, Suttipun (2012, p. 1) stated that 'a significant increase in the number of companies providing environmental disclosures in their annual reports and other communication media in the last two decades has been reported'. Likewise, other studies (See e.g. Heflin & Wallace 2011; Summerhays &

De Villiers 2012) indicate an increase in the number of companies providing environmental information, especially after the 2010 oil spill incident in the Gulf of Mexico. Studies have noted an increase in the disclosure of a number of oil companies, especially those operating in environmentally sensitive industries (Ahmad et al. 2003; Kolk 2003). On the other hand, the increase in environmental disclosure and the number of companies involved are impacted by several factors, including pressure on companies from various interest groups. In this respect, governments of many countries have exerted pressure on companies to direct more of their efforts toward environmental protection. For example, the UK government has recently claimed that environmental reporting is deemed to be crucial in corporate reporting and companies must now report essential environmental issues in their annual reports and accounts under the amendment to the Companies Act 2006 (Sun et al. 2010). In light of this, there has been an increase in the number of countries (e.g. Japan, Denmark, New Zealand, and The Netherlands) that have passed regulations requiring some sort of public disclosure of corporate environmental information (Jose & Lee 2007; Kolk 2003). Therefore, it has to be recognised that improved environmental disclosure practices is expected as a result of this increased pressure on companies. Yet, there are other pressures besides governmental pressure contributing to the response of organisations in offering environmental information.

The increased demand for corporate environmental information (such as in the form of corporate environmental responsibilities from non-governmental actors and other parties) has stimulated the demand for disclosure. Many organisations responded to pressures in order to meet the requirements of all parties, including stakeholders, environmental protection groups, and international organisations where they exercise political and legal pressure and economic sanctions on companies to urge them to adopt practices that will protect the environment. According to Cormier et al. (2005, p. 4), ‘public pressures directly influence the level of corporate environmental disclosure’. Similarly, Elijido-Ten et al. (2010), Deegan and Blomquist (2006) and Cormier et al. (2005) reported that environmental disclosure is seen as a response to the pressure exerted by various stakeholders on corporate managers with respect to

environmental performance. In support of stakeholders exerting pressure, in findings by KPMG (2005, p. 140), their analysis shows that the 'majority of disclosures made were around the motive of stakeholders' concern'. On the other hand, it has to be recognised that pressures contribute to greater attention to environmental issues in countries in terms of formalised environmental performance of companies. Qian et al. (2011) purport that governments have played an encouraging role in the establishment of appropriate management systems while seeking to formulate and plan environmental policies aimed at achieving environmental goals.

In conclusion, it can be said that environmental disclosure has recently witnessed growth in published environmental reports and information related to environmental issues in annual reports. However, pressures on companies should not be exerted solely to increase the overall level of disclosure, but disclosed information and related environmental issues must be value-adding for the user of the information. Additionally, an increase in the production of reports on environment issues and the information contained therein should contribute positively to the quality and quantity of information disclosed. Supporting the study, it can be said that levels of disclosure differ between countries, especially in developed countries that have experienced a more significant growth in the level of environmental disclosure than developing countries.

In the social and environmental literature, many researchers have conducted studies on levels of disclosure, whether in one sector in a country or different sectors, as well as levels of disclosure across countries. According to Tilt (2001), during the past thirty years many studies have examined the level of disclosure and researchers have agreed that disclosure has gradually increased in corporate annual reports. This is reinforced by Campbell (2004) who conducted a study covering 27 years from 1974 to 2000, concluding that disclosure had increased in UK companies but it increased at a faster pace in the period between 1980 and 1990. The increase in the level of environmental disclosure in corporations may be due to accidents occurring and their effect on the environment or the emergence of legislation from governments requiring companies to disclose. Patten (1992) and Heflin and Wallace (2011) found

that the level of disclosure in oil companies increased after oil accidents involving the oil tanker Exxon Valdez in Alaskan waters and the oil spill from the drilling platform in the Gulf of Mexico.

Further, environmental disclosure may be different in terms of level and content. This difference may be between firms in the same country or between countries. Sen et al. (2011) indicate that the level of disclosure of environmental information varies across industries and that information in annual reports is found to be more qualitative than quantitative. Brammer and Pavelin (2004, 2006) detected significant variation in environmental disclosure across sectors in the UK. Furthermore, levels of environmental disclosure in large companies and in companies operating in environmentally sensitive industries may be higher. In terms of the role of legislation in increasing the level of disclosure, Hibbitt and Collison (2004) noted in their study that European countries took a prominent place among the countries of the world in terms of the development of standards required for corporate environmental disclosure.

Studies conducted recently indicate that disclosure differs between countries. Ionel-Alin (2012), in his study conducted in 27 countries in the European Union, concluded that there were significant variations in environmental disclosure between countries in accordance with some factors. In addition, Holland and Boon Foo (2003) found that in both the USA and the UK environmental reporting practices increased as a result of increases in the volume of environmental legislation, regardless of some of the determinants of culture and legality—which will be addressed in detail later. Buhr and Freedman (2001) pointed out that the natural Canadian society adopted the production of a higher level of environmental disclosure more so than the American society, especially in environmental reports.

In summary, environmental reporting and levels of disclosure continues to gain the attention of researchers in the field of environmental accounting. However, studies addressing this subject suggest that differences exist in the preparation of environmental reports and the levels of disclosure between countries; and even

between the same industrial sectors in one country. This is probably due, in part, to the fact that companies located in different countries have varying regulatory and cultural environments and report to many dissimilar groups of stakeholders.

2.3 Environmental Disclosure across Countries

There is general consensus among accountants and academics that financial reporting differs between countries according to accounting standards in each country (Hopwood 2009; Lopes & Rodrigues 2007). Therefore, accounting researchers who conduct studies on social and environmental disclosure find that, due to the various determinants in each country, social and environmental disclosure varies between countries. These determinants depend on the stages of economic development, culture and political life of a country (Cormier et al. 2005). Williams (1999) found that national culture and political and civil systems are important determinants in determining differences relating to voluntary environmental and social accounting between countries. Conversely, other studies suggest size, profitability, industry, country of ownership, reporting country, capital intensity, senior executive attitudes and company age are determinants for environmental disclosure in many countries (Da Silva Monteiro & Aibar-Guzmán 2010; Gao et al. 2005; Liu & Anbumozhi 2009). Therefore, many researchers have insisted that environmental disclosure has become a global issue throughout the world, but there is still tremendous variation in the types and amount of information disclosed between countries (Alazzani & Wan-Hussin 2013; Ali & Rizwan 2013; Jia & Sulkowski 2011).

In recent years, developed countries have given greater attention to environmental accounting, in particular corporate environmental disclosure (Hasseldine et al. 2005; Hecht 2007; Jorgensen & Soderstrom 2006; Seetharaman et al. 2010; Williams 2004). Many researchers in developed countries such as the USA, the UK, Australia, Japan, Canada and other European countries have addressed the subject of environmental disclosure from various aspects (Brammer & Pavelin 2006; Parker 2011). Some studies have addressed the relationship between environmental disclosure and environmental and financial performance (Al-Tuwaijri et al. 2004), while other studies have examined determinants of disclosure (Gamerschlag et al.

2011; Gao et al. 2005; García-Ayuso & Larrinaga-González 2003). Other researchers have tried to provide comparisons between countries (Holland & Boon Foo 2003). In contrast, compared to developed countries few studies have been conducted on developing countries (Ahmad & Gao 2005; Belal et al. 2011; Elijido-Ten 2009).

2.3.1 Environmental Disclosure Practice in Developed Countries

Environmental issues and problems arising from the environmental activities of companies have gained the attention of societies in developed countries more than developing communities over the past few decades. The accounting studies that addressed environmental issues have focused on developed countries such as the UK, the USA, Australia, Japan, Canada and the European Union. Growing interest in environmental issues by companies in developed countries has contributed to an increase in the amount of environmental information in annual reports of companies. Mitchell et al. (2006) also found that the amount of environmental information has increased in annual reports, as well as establishing that many corporations are starting to issue voluntary independent environmental statements in their annual reports.

In North America, the USA and Canada, attention to environmental accounting has witnessed a boom in growth over recent decades. USA companies are giving special attention to the environment in terms of identifying environmental impacts on commercial activities in public and private sectors and trying to reverse these effects via their annual reports (Aerts et al. 2008). In addition, governments and professional organisations in North America have played a significant role in encouraging companies to increase disclosure. In 1993, a workshop was organised with a group of experts, academics, businessmen, professional organisations and non-profit organisations in order to develop an action plan to encourage and motivate businesses to fully understand the importance of environmental accounting, including environmental costs and how to make corresponding decisions (Hopwood 2009; Sawani 2009). Furthermore, Kraft (2011) reported that since the 1980s environmental information disclosure has emerged in the United States although environmental performance varies widely among the fifty states of the USA.

As for the UK, Campbell (2004) indicated in his study covering a period of 27 years from 1974 to 2000 that the amount of disclosure in companies has increased over time, where all companies have paid attention to the level of disclosure as of late 1980 (see Figure 2-2). Moreover, Hasseldine et al. (2005) concluded in their research on UK firms that disclosure is not directly related to the quality of actual performance in order to disclose environmental information. Further, another study including firms in the UK showed that the rate of environmental information disclosed has increased among UK companies (Brammer & Pavelin 2004, 2006, 2008). On the other hand, Brammer and Pavelin (2006) examined voluntary environmental disclosures made by a sample of large UK companies during 2000. Their findings indicated that the quality of disclosures is positively associated with firm size and corporate environmental impact. Furthermore, Salama et al. (2012) established that UK firms have paid considerable attention to the amount of environmental information disclosed. His study was conducted in 1999 and included 169 firms. Findings show that 138 (out of 169) companies disclosed environmental statements (81%).

Similar to studies conducted in other European countries, an early response to corporate environmental reporting practices in Portuguese companies has been witnessed since the 1990s. Da Silva Monteiro and Aibar-Guzmán (2010) concluded that the extent of environmental disclosure has increased, as well as the number of Portuguese companies that disclose environmental information—although the level of environmental information disclosed is low according to a study of 109 large firms operating in Portugal during the period 2002–04.

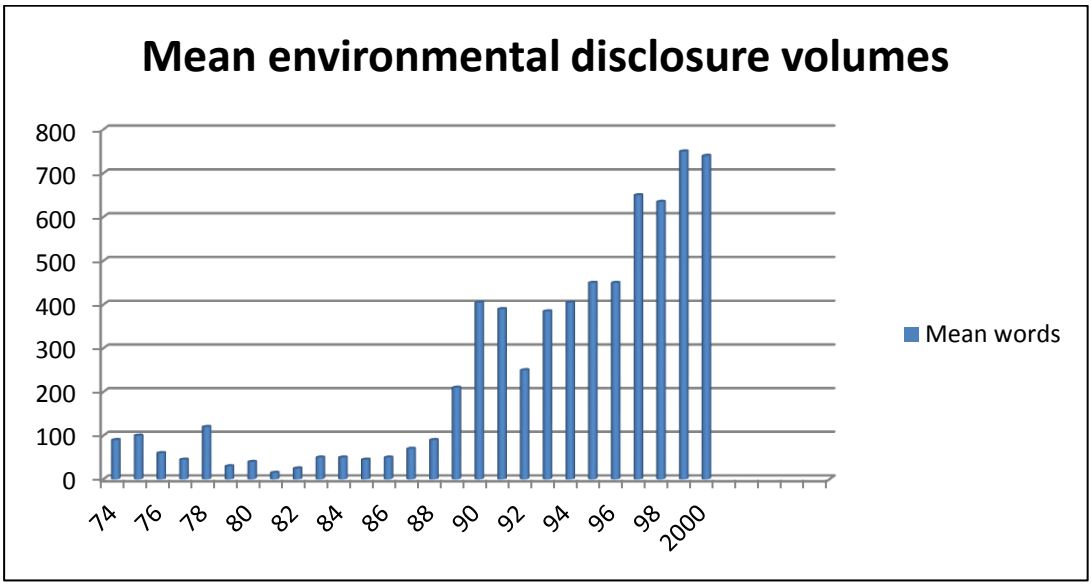

Figure 2-2: Mean Environmental Disclosure Volumes in UK Firms
Source: D. Campbell / The British Accounting Review 36 (2004, p.111).

German corporations also have positive environmental and social disclosure where companies from 'polluting industries' tend to have higher levels of environmental disclosure (Gamerschlag et al. 2011). Ionel-Alin (2012) studied environmental reporting within European countries. In his study, the author analysed factors that explained environmental disclosure practices across 27 European Union countries. This study concluded that in order to increase the quantity and the quality of environmental disclosure at the European Union level, environmental disclosure should be mandatory.

In an Australian context, the attitudes of all sections of society, including investors, employees and environmentalists towards the environment has contributed to an increase in environmental awareness. Tilt (2001, p. 1) stated that 'Over the past twenty or so years interest in the relationship between business and the environment has grown dramatically, mirroring the increasing importance of the environment to broader society'. Interest in environmental disclosure in the Australian context has witnessed a significant increase by companies disclosing over the last decade (KPMG 2008). In addition, there has been an increase in environmental reporting by governments and corporations. Lynch (2007) found that environmental reporting in Australian state government departments increased during a five year period from

2000 to 2005. It is relevant to point out that the issuing of separate environmental reports has increased and recommendations have been put forth to change the direction of environmental disclosure research (Cowan & Gadenne 2005). In a recent study by Rao et al. (2012) of 100 Australian firms listed on the Australian Stock Exchange, they concluded that environmental reporting in Australia is associated with positive corporate governance attributes; and 96 firms out of 100 had some level of environmental reporting.

In Japan, Stanwick and Stanwick (2006) examined environmental disclosure in Japanese corporations during the period 1997 and 2005. This study covered 30 firms and results indicated that all companies had increased environmental disclosure during the years of the study. In addition, the highest level of environmental disclosure was in consumer product firms, whereas heavy manufacturing firms registered the lowest level of environmental disclosure. Moreover, Hirayama et al. (2001) established that foreign environmental guidelines have contributed to increases in environmental disclosure in Japan year by year. In this context, the authors concluded that the number of companies presenting environmental reports has increased year by year—where companies publishing environmental reports increased from 236 in 2000 to 297 companies in 2001.

2.3.2 Environmental Disclosure Practice in Developing Countries

Over the last twenty years, studies conducted in developing countries indicate that the level of environmental disclosure in developing countries is still low (Haider 2012; Islam 2010; Ismail & Ibrahim 2012). Research conducted over three decades did not contribute to social and environmental accounting literature adequately (Hassan 2010; Solomon and Solomon 2006). Supporting this view, Haider (2012) and Islam (2010) concluded that corporations operating in developing countries provide insufficient information and poor quality information regarding environmental issues in their annual reports. Further, Buniamin (2010) mentioned that the quantity and quality of social and environmental disclosure was inadequate in developing countries.

Due to increasing pressure on companies as a result of the increase in environmental accidents, the past decade has seen a boom in studies on environmental issues in companies and the extent of disclosure in annual reports or environmental reports (Suttipun & Stanton 2012b). These studies show that environmental disclosure practices in developing countries are generally very low and descriptive in nature (Belal 2001; Belal et al. 2011; Haider 2012; Obeng-Nyarko & Grigore 2011; Sumiani et al. 2007). However, although environmental disclosure practices are still inadequate compared with western countries, including Australia, there are observed trends in some developing countries about a slight improvement in the number of studies on the disclosure of environmental accounting (Ahmad & Mousa 2011; Haider 2012; Ratanajongkol et al. 2006; Sumiani et al. 2007). In short, studies which addressed the subject of environmental disclosure indicate some reasons for environmental disclosure practices such as improved corporate reputation and image, managing powerful stakeholders, sustaining competitive advantage and legitimising corporate activities to society (Belal et al. 2007). Conversely, absence of legal requirements, lack of stakeholders' demands, high costs rather than benefits, attitudes relating to secrecy, competitors' poor performance, non-consideration of performance measurement, poor performance and fear of bad publicity are reasons for non-disclosure (Belal et al. 2011; Belal et al. 2007). Furthermore, these studies have focused on general descriptions of corporate social and environmental disclosure practices. Thus, consistent with the findings of research in developing countries, prior research in the context of developing countries shows companies disclose limited amounts of social and environmental information (Belal et al. 2007; Haider 2012). Therefore, in order to understand the findings of the previous research on social and environmental disclosure in organisations, it is worth providing a brief review of some relevant studies within the context of developing countries.

Elijido-Ten (2009) and Haniffa and Cooke (2005) conducted research about social and environmental disclosure accounting practices across Malaysian companies. These studies focused on environmental disclosure in annual reports in the context of Malaysian corporations. The results of these studies indicate that Malaysian corporations show varied disclosure between firms according to different variables

such as type of industry, size and corporate governance. In another study related to Malaysian firms it was concluded that larger companies and companies in environmentally sensitive areas published more information and provided higher quality disclosure. Companies with high levels of quantity environmental reporting also have a high level of quality environmental reporting (Buniamin 2010). In a recent study in Malaysia, Buniamin et al. (2011) found that environmental reporting is low, with only 28% out of 243 of the companies disclosing environmental information.

The situation is similar in China and environmental disclosure studies need to study the situation in-depth in the future, although existing studies have sought to study most determinants concerning environmental disclosure practices (Kuo et al. 2011; Zeng et al. 2010). Other researchers have noted in their studies that the environmental reports of companies are still in the early stages and, with respect to the preparation of environmental reports, research results point out it is predominantly non-mandatory (Fugui & Bing 2008; Xiao & HU 2004). However, although environmental reporting in China is uncommon, governmental organisations and other public agencies contribute somewhat to encouraging the use of environmental information by users such as financial institutions and investors (Fugui & Bing 2008).

Regarding companies in Bangladesh, most studies conducted recently indicate that the level of environmental disclosure is still fairly low. Belal (2001) used secondary data in order to study social and environmental disclosure in publicly traded companies in Bangladesh. In this study, the researcher indicated that the percentage of the average total number of social and environmental disclosures in annual reports of a sample was 0.5%. Hossain et al. (2006) conducted a study about environmental disclosure in annual reports of 150 firms for the period 2002-2003. Results show that companies in Bangladesh appeared to have the lowest levels of social and environmental disclosure. Moreover, BelalKabir, et al. (2010) examined the nature and extent of corporate environmental disclosure in Bangladesh. Their studies included annual reports of the 100 largest firms for the year 2008. The main finding

of this study indicated that the level of environmental and climate change disclosure is very low in Bangladesh Results of analysis showed that 91% of companies disclosed only one item in their annual report, namely, 'energy usage'—which is a mandatory requirement.

Concerning Thailand, Suttipun and Stanton (2012a) maintain that few studies relating to environmental disclosure have been conducted in the context of Thailand. Kuasirikun and Sherer (2004) found that there was a slight increase in environmental disclosure by Thai companies during the years 1993 and 1994 where he examined the annual reports of 63 Thai firms in 1993, and 84 in 1994. Along similar lines, Ratanajongkol et al. (2006) conducted a study of the 40 largest corporations during 1997, 1999 and 2001. The findings from this study indicate that environmental disclosure decreased over the study period. Furthermore, Thai firms provide environmental reports only when it is mandatory (Suttipun & Stanton 2012a).

As for environmental accounting studies in African countries, it should be borne in mind there is a lack of available references related to African countries. Findings from the few available studies indicate that environmental disclosure in African countries is still in its early stages, as is the case in Asian countries. Studies conducted in African countries indicate that attention to environmental accounting is still poor compared to developed countries (De Villiers & Van Staden 2006; Ngwakwe 2009; Uwalomwa & Marte Uadiale 2011). Coetzee and Van Staden (2011) reported that the levels of disclosure have not received particular interest from companies operating in South Africa, although there is a significant increase in social concerns in terms of employee safety and stakeholder scrutiny in recent years. Uwalomwa and Marte Uadiale (2011) recommend that in order to develop the themes of social and environmental disclosure, evidence should be presented to provide the foundation for improving environmental information disclosures among companies. Ebimobowei (2011) concluded that companies should adopt social accounting as a moral duty. In addition, the development of legislation for companies to disclose social accounting information is required. As well, professional

accounting bodies in countries such as Nigeria should collaborate to expand research into social accounting.

In another study conducted on companies in Ghana, Obeng-Nyarko and Grigore (2011) indicate that there are few companies that publish a social and environmental report, while others include social aspects in their annual reports. Further, De Villiers and Van Staden (2006) provided data about environmental disclosure using content analysis for annual reports of corporations in South Africa. They indicated that in the first three years of the study period (the entire period of study was nine years) they witnessed an increase in environmental disclosure—unlike the last years of the study period. Moreover, there was a difference between general and specific disclosure information. The general and specific disclosure information had increased between 1994 and 1999, and specific disclosure information had decreased five times more than the decline in disclosure of general information. The authors used the legitimacy theory to interpret the results of their study and the motives behind the disclosure of social and environmental practices in developing countries.

2.3.3 Environmental Disclosure Practices in the Arab Region

Unlike other countries of the world, social and environmental research in Arab countries is still scarce compared with the rest of the world, including developing countries. O'Connor (2006) reported that published studies according to the regions of the world indicate that the Middle East is the lowest among the regions of the world in published studies dealing with environmental issues (Figure 2-3). However, during the current decade some research has been conducted in Arab countries to attempt to fill a gap in accounting literature in regard to environmental issues.

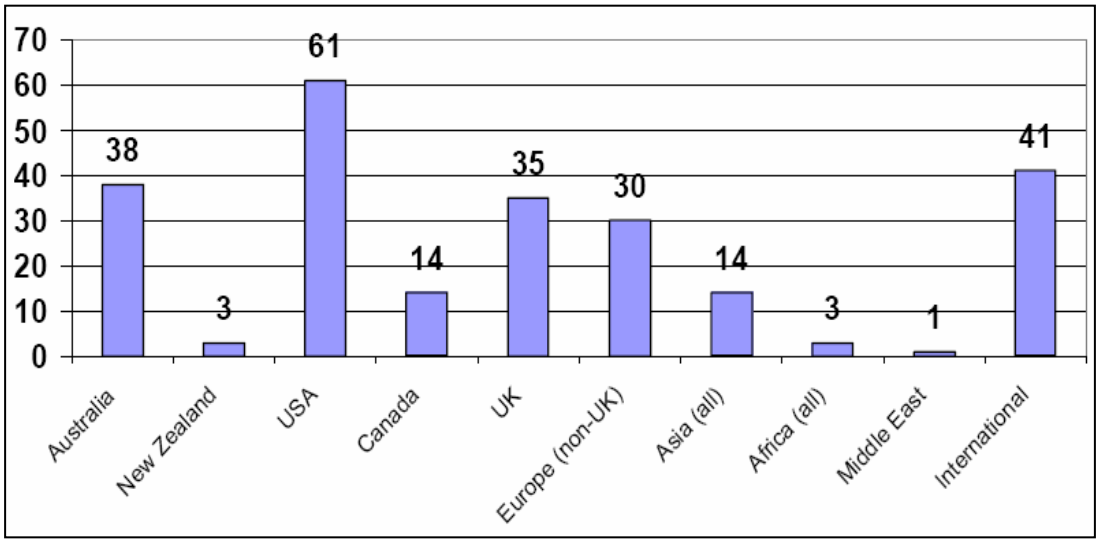

Figure 2-3: Countries of Origin of Published Studies.
Source: O'Connor, 2006, p.16.

In the Middle East and North Africa, Jahamani (2003) studied annual reports of Jordanian firms and UAE firms in 1998. The findings indicate that only 9 and 11 companies respectively presented environmental disclosures in annual reports out of 86 and 94 surveyed firms in Jordan and the UAE respectively. In another study conducted in Qatar, Al-Khater and Naser (2003) examined different aspects of corporate social responsibility disclosure according to perceptions of various user groups. They concluded that the inclusion of corporate social and environmental disclosure in annual reports would reflect social responsibility to the public, and companies seek to justify their existence within society by highlighting the social responsibility of the company in their reports. These results confirm the low level of disclosure in companies in the developing world, including companies in the Arab region. The results of a study by Jahamani (2003) on environmental reporting in UAE companies showed that only 12% of the companies in the UAE issued environmental reports. The results of the low level of disclosure in companies in the developing world include companies in the Arab region. In Libya, Ahmad (2004) conducted a study on environmental disclosure of 18 companies from major industrial companies in Libya and the results indicated that there was no evidence of environmental disclosure in annual reports of industrial companies in Libya.

Kamla (2007) conducted a study in nine Arab Middle Eastern countries to examine the volume, quality and nature of social reporting practices in the annual reports of 68 companies. The findings indicated that only 10 companies, 15% of the sample, provided some form of environmental information. In addition, most disclosed information related to employee issues. In another study conducted in the Egyptian context, Rizk et al. (2008) studied corporate social and environmental reporting practices of Egyptian corporate entities. Findings of the study indicate a significant variation regarding environmental disclosure practices in 60 companies operating in industrial segments. The researchers also mentioned that reviews of disclosure practices in different parts of the world are always welcome and are arguably somewhat limited in developing countries.

Furthermore, Hossain and Hammami (2009) and Naser et al. (2006) conducted studies in Qatar regarding environmental disclosure, including companies listed on the Doha Securities Market. These studies concluded that there are variations in corporate social disclosure in the sampled Qatari companies. The results also indicate that disclosure is associated with firm size measured by the firm's market capitalisation, business risk measured by leverage and corporate growth. In addition, the findings indicate that age, size, complexity, and assets-in-place are significant and the variable profitability is insignificant in explaining the level of voluntary disclosure.

During 2010, a study conducted by Elsayed and Hoque (2010) found that 55 out of 100 Egyptian corporations provided environmental information. In the Saudi Arabia, Al-Gamrh (2010) concluded that the level of disclosure in the annual reports of 93 companies surveyed is very low. Results of the study concluded that only one company disclosed all items of disclosure (the study included 25 items of environmental and social disclosure); while another 13 companies did not record any disclosure items. In 2011, Al-Janadi et al. (2011) investigated annual reports for the available financial years 2006 and 2007 in Saudi Arabia and the UAE. They ascertained that the level of voluntary disclosure is low, with an average of approximately 36 per cent for the whole sample of companies. Voluntary disclosure

was found to be lacking for most of the items of social and environmental information. In addition, the results of Ahmad and Mousa's (2011) research confirmed the notion that a small increase in corporate environmental disclosure occurred in Libya between 2001 and 2007 compared to results of a study conducted during the period 1998-2000.

Furthermore, in Jordan, Islam (2011) examined the level of environmental disclosure in Jordanian firms using a sample of 60 companies in the manufacturing and service sectors. Results refer to 85% of the companies, in one way or another, disclosing social and environmental information. Islam (2011) commented on the results of his studies which showed an improvement in reporting levels compared to other studies conducted on Jordanian companies such as the study by Al-Khadash (2003) which concluded that 26% of companies covered in the study were known to report environmental information; and a study by Jahamani (2003) who found that 10% (of 86 Jordanian firms) presented environmental reports as part of their annual reports in a study which examined the extent, awareness and level of environmental responsibility of Jordanian companies.

Two studies conducted in the Tunisian context by Gana and Dakhlaoui (2011) during 2011 concluded that the average disclosure rate slightly improved over the years of study. This finding was concluded from analysis of 36 Tunisian firms over the period 2000 to 2005. Belhaj and Damak-Ayadi (2011) also examined environmental disclosure in 31 Tunisian firms and related it with financial performance and environmental performance in 2007. The findings indicate that the mean disclosure score is 9.77 and firms from industries with higher sensitivity to the environment tend to provide more environmental disclosure than firms from less environmentally sensitive industries. It is worth noting that out of 500 of Tunisia's largest firms only 53 have published environmental information in their annual reports or on their websites (Belhaj & Damak-Ayadi 2011).

During the year of 2012, there was evidence of some attempts by various researchers to undertake studies dealing with environmental issues. For example, Ismail and

Ibrahim (2012) found that, in varying forms, 85% of Jordanian companies disclose environmental information where the sample included 60 companies in the manufacturing and service sectors. As well, Bayoud et al. (2012) found that in annual reports 60% of companies from different sectors disclose four categories of disclosure: 'employee disclosure; community involvement disclosure; consumer disclosure; environmental disclosure' of corporate social responsibility (CSR); whereas, 5% of companies do not present CSR information in their annual reports. However, the trend towards environmental disclosure for companies in the Middle East and North Africa has resulted in an increase in the number of companies that disclose environmental information.

It can be concluded that studies in developing countries are in the nascent stage. The review also demonstrates that there is a great deal of scope to embrace the interview method in further social and environmental accounting research, and this method would be particularly effective in the context of investigating this area of study. Moreover, the review also reveals that there is a total lack of research that has involved interviews with stakeholder groups (Owen 2008) such as news media and NGOs; this is surely necessary in order to gain a full understanding of management motivations in this context. In the latest study of developing countries by Haider (2012), he also purported that environmental disclosure practices are still in the nascent stage. As well, the role of multinational corporations, culture and religion remain unique factors in developing countries. Furthermore, the social, political, economic, legal and education systems in most developing countries need special emphasis in future studies. Therefore, it is of paramount importance to highlight the most important comparative studies between countries in order to derive a final score for environmental disclosure practices.

2.4 Comparison of Environmental Disclosure Practices between Countries

Recently, much attention has been devoted by researchers to studying environmental disclosure through comparing countries. Most of the studies were conducted in developed countries, with only a handful being undertaken in developing countries.

Kolk et al. (2002) state the KPMG International Environmental Consulting Group, together with the Institute for Environmental Management at the University of Amsterdam, carried out international surveys on environmental reporting in the years 1993, 1996 and 1999. Their recent survey observed the reporting practices of the largest 250 companies in the world (19 countries), coupled with an analysis of practices of the top 100 companies in 11 countries. Findings suggest an increase in the implementation of environmental reporting and dominance by the industrial sector in explaining environmental disclosure.

In another study to examine the determinants of differences in social and environmental disclosure across countries, Silberhorn and Warren (2007) investigated the role of managers to determine social and environmental disclosure. The researchers compared 40 British and German companies using content analysis of their websites, as well as interviews with managers. The most prominent motives for disclosing environmental and social information was linked to company performance, followed by corporate values, and response to stakeholder pressure. As well, these researchers found that education, human rights and animal welfare are more emphasised by British firms than German firms; and firms in Germany give emphasis to the arts, cultural diversity and other cultural aspects. Moreover, they found that stakeholder groups in British companies pay more attention to disclosure than German companies. They concluded these differences due to different starting points for corporate social reporting in Germany and the UK. In Germany, stricter legislation has been introduced regarding employee rights and green issues while in UK, the businesses' social performance is monitored by a large number of institutions and networks to provide greater scrutiny.

Further, in a comparative study between the UK and the USA, Holland and Boon Foo (2003) examined the regulation of environmental activities through focus on legal and regulatory frameworks of a country. This study was conducted on 37 annual reports of companies operating in four industries, namely, chemical, mining, oil and gas, and construction and power. They concluded that companies in the UK produced a separate environmental section in their annual reports. On the other hand,

USA companies clearly have more legislative emphasis, where the annual reports were produced in response to legislative requirements. Moreover, De Villiers and Van Staden (2010) examined corporate environmental disclosure in Australia, the UK and the USA. They studied environmental disclosure through the viewpoint of shareholders in those countries. The results of this study indicated that shareholders call for environmental information because they believe managers should be accountable to shareholders for their companies' environmental impact and shareholders have indicated the uses for specific types of environmental information. Aerts et al. (2008) state that environmental disclosure relates to expenditure and risk in North America, whereas European corporations disclose more information regarding sustainable development and environmental management. This is due to the regulated context in North America is more than in continental European which contributes to release more environmental information related to expenditures and risk, and remediation.

In other research, a small number of comparative studies between developed and developing countries have been conducted in recent years. Xiao et al. (2005), who examined differences in environmental disclosure between Hong Kong, UK and Canada, concluded that the level of environmental disclosure in Hong Kong is low, while firms in the UK demonstrate a greater extent of disclosure. Canada and Hong Kong have similar levels of environmental disclosure. This study also shows that the size of a company and the type of industry has a strong association with the extent of environmental disclosure. Another study also examined the difference in environmental disclosure. Yusoff and Lehman (2005) examined differences relating to environmental disclosure practices between Malaysian and Australian publicly listed companies. This study concluded that Australian companies disclosed more extensive environmental information compared to Malaysian companies. Factors impacting on environmental disclosure practices among Australian companies are related to financial performance; while the sole factor for Malaysian environmental disclosure practice is ISO 14001.

It is clear from the literature reviewed that environmental disclosure practices have been progressively increasing and changing over the past decades. This, in turn, means that disclosure varies widely across countries and industries with more incidence of reporting observed in high profile companies, i.e. large companies and those that belong to environmentally sensitive industries. In addition, response of companies to disclosure of environmental information is a result of pressure from stakeholders to show the position of companies towards various environmental incidents. Therefore, supporting the study, the world has witnessed environmental incidents by large international companies such as the Alaskan oil spill in 1989 and the oil spill in the Gulf of Mexico in 2010. Thus, the need for research of this type is acknowledged.

Studies conducted in the context of oil companies concluded that there are many accidents that have occurred to encourage the study of the levels of environmental disclosure by oil companies. For example, the results of Patten's (1992) research confirmed that disclosure practices in 21 oil companies increased significantly after the Exxon Valdez oil spill. Thus, in the wake of environmental disasters resulting from oil companies' operations and increased awareness generally, oil companies should exert more effort in providing greater environmental disclosure to various stakeholders. In regard to the oil spill in the Gulf of Mexico in 2010 by BP, Heflin and Wallace (2011) established that an increase in environmental disclosure, specifically in the disclosure of disaster readiness plans, was evident in the year following the BP spill. As well, they ascertained that firms with higher institutional ownership and lower ownership concentration were more likely to increase disclosures about disaster readiness plans. Thus, there is a need for research into environmental disclosure by oil companies in the Arab region, due to the Arab countries being the largest oil producing countries in the world.

2.5 Influential National Factors Impacting on Environmental Disclosure Practices

In recent years more companies disclose information about their environmental activities according to stakeholder demands relating to environmental responsibility

and accountability. The extent and content of environmental disclosure differs from corporation to corporation. Generally, extensive accounting literature exists relating to the factors of environmental information that companies disclose in their annual reports and the characteristics they share with other companies that do the same. Research has shown many factors influence the reporting of environmental information regarding firms' characteristics such as company size and industry type (Al-Tuwaijri et al. 2004; Cormier et al. 2005; Gao et al. 2005).

Hence, academic researchers in many countries have paid attention to disclosure of environmental information in different types of corporations. In the past, environmental reporting was mostly restricted to firms from high environmental impact industries in industrialised countries. Today, empirical studies show that environmental communication is becoming common in industrial sectors, including oil sectors, in different regions in the world (KPMG, 2008). However, environmental reporting still continues to be highest in countries such as the USA, Japan, Germany, Australia and the UK and in industries such as chemicals, pharmaceuticals, electronics, automotive, oil and gas (KPMG, 2008).

Moreover, the present literature is based on developed countries, and more specifically on countries such as Australia, Canada, Japan the UK and the USA. Review of the accounting literature shows that the characteristic properties of organisations have an impact on corporate environmental disclosure. However, these characteristic properties such as size, age of the company and type of industry will not be addressed in this study due to the study focusing solely on the oil industry. In addition, the size of corporations will be neglected in this study because the study uses national oil and gas corporations and international oil and gas corporations. The standard size is not affected by the level of disclosure of environmental variation. In relation to the sensitivity of the industry, most studies indicate that the oil industry is one industry most sensitive to the environment.

As a consequence, as far as the researcher is aware, there are currently few published studies examining internal determinants (characteristics of the company) of corporate

environmental reporting by oil corporations in oil producing countries. However, this study will take into account influential external determinants of the disclosures which are likely to give a greater dimension in the difference in the level of disclosure between developed and developing countries (international companies and national companies). This study could make a significant contribution to the environmental reporting literature in the context of oil-exporting countries. Therefore, this study presents an attempt to address this gap in the literature by analysing whether the specific features of oil companies result in a significant difference between the factors influencing environmental disclosure practices of local firms when compared to firms from other different international contexts. Therefore, this research study seeks to examine the political systems, economic systems and legal systems as the influential factors in varying countries. Additionally, cultural practices can vary dramatically from country to country and have an effect on disclosure practices. Also, most countries are in different stages of economic development.

2.5.1 Political and Civil Systems (PCS)

Political systems vary from country to country. Most activities in countries are affected by the applicable political system. Lotfi (2002) contends that in many countries the political system determines their general economic policies. There is consensus among economists that economic stability in a country is associated with economic policies and political systems. In light of this, it can be said that economic organisations seek to achieve economic growth in the presence of economic policies and the political systems provide a degree of political freedom for individuals and organisations. The degree of political freedom for society in a particular country depends on the degree of political rights and civil liberties. In this context, Lotfi (2002) reported that permitted degrees of freedom have an effect on accounting practices. Consequently, one of the reasons for the variation in accounting practices among countries is the degree of political freedom, despite global efforts to unite accounting practices according to International Accounting Standards (IAS). According to Elsayed and Hoque (2010), accounting research has shown that

international socio-political institutions[1] play an important role in improving accounting disclosure practices. Overall, each country has a unique cultural environment characterised by its own political and economic system. Williams (1999) believes that countries should be proceeding with the process of international consensus in each of these differing environments. Regarding accounting practices, and to successfully achieve international consensus at the global level, there needs to be agreement on the required level of disclosure companies are required to provide and the appropriateness of information to users—as well as the required level of reporting to help in strategic planning at the national level.

To determine whether there is a significant difference between accounting disclosures, especially with regard to environment and political systems, several researchers have embarked on determining the extent to which corporate disclosure is impacted by political systems. Williams (1999) examined voluntary social and environmental disclosure and the extent of the impact of political and civil systems in several countries, namely, Australia, Malaysia, The Philippines, Singapore and Indonesia. Archambault and Archambault (2003) examined national factors, including political systems and their effect on the financial disclosure of corporations, using a sample of companies from 33 countries. Companies are exposed to political pressure in order to meet the requirements of governments and this varies according to priorities of government. Consequently, companies are seeking to respond to these political pressures for commercial interests. Cho et al. (2006) reported that as result of the effect of business interests of companies, companies tend to become politically active towards public policy deliberations.

It should be noted that most studies to date indicate companies are under political pressure. Political pressure in the country entertains a large degree of freedom reflected positively on accounting practices. Williams (1999) believes that violation of political rights and civil liberties and restricting political freedom may be

[1] International socio-political institutions include all socio-economic political groups, such as the United Nations (UN), the European Union (EU), the UN Conference on Trade and Development (UNCTAD), the Association of South East Asian Nations (ASEAN), the World Trade Organisation and the Organisation for Economic Co-operation and Development (OECD) (Thompson, P & Cowton, and CJ 2004).

obstacles to fair disclosure. Moreover, Belal et al. (2007) and González-Benito and González-Benito (2010) indicated that managers of companies operating within underdeveloped political institutions are more susceptible to political pressure.

On the whole, worldwide there is a variety of political systems ranging from democratic regimes in which people enjoy political freedom and all associated civil rights; and other systems such as political dictatorships where people do not enjoy freedom and participation in decision-making and have lost most of their civil rights. Any political system should have an impact on regulations applicable, including the accounting system. When the political system is dictatorial, political freedom does not exist and where people cannot choose the members of the government it is likely that they cannot create and develop the accounting profession to result in full disclosure of the information in a fair and frank manner. Often in dictatorial regimes, unlike the capitalist system where private property ownership is prevalent, all means of production are owned by the government. These differences may be reflected in differences in accounting practices. For example, in socialist countries governments require information about the operations on the balance of payments for corporations as a precondition for the approval of proposed investments. Thus, the change in political orientation may result in new accounting practices and rules. In the same way, Archambault and Archambault (2003) summarised that there is a significant correlation between political systems and accounting clusters where they indicate a correlation between political freedom and economic freedom.

2.5.2 Legal System (LS)

Although most countries have national laws, most legal systems have shared ideals in certain critical aspects. Legal scholars have used these common features in order to classify law systems. Therein, Kritzer (2002) identified three major families of legal systems: (1) Romano Germanic (Civil) law; (2) common law; and (3) socialist law. There is consensus among academics and accountants that legal systems are part of an institutional framework within which an accounting system interacts. Therefore, the characteristics of an accounting system are influenced by the laws in force in the country through the legalisation of accounting standards and procedures. This, in

turn, will lead to legal systems affecting accounting practices through the extent of accounting rules being determined by law and not by the number of accounting rules applied. Levine et al. (2011) suggest that the legal system is part of the institutional framework with which the accounting system is likely to interact. The legal system influences the way in which accounting rules are promulgated which, in turn, could influence the nature of the rules themselves.

Therefore, legal systems offer legal understanding on how an accounting system is created and how it operates. It can be said that accounting rules are very detailed and comprehensive through the establishment of accounting standards and procedures. This approach has been used by Roman law to influence accounting systems, leaving a very small margin for interpretation and no possibility for improvising. In this way, the role of the accountant is confined to the implementation of prescribed and detailed legal requirements. The systems which are under the influence of Anglo–Saxon rules[2] where rules are set based on individual decisions, means the accounting systems, accounting rules and policies are set by professional organisations operating in the private sector. This approach is more innovative and more topical due to the provision of more considerate, transparent and timely financial reports (Černe 2009; Saudagaran 2009).

Therefore, the level of environmental disclosure practices should be affected by the level of regulatory development considering that disclosure is one of the accounting practices. The effect of law on disclosure practices is evident in countries where disclosures are required by law. Ahmad (2004) illustrated that the literature studies show that levels of disclosure have improved in countries where disclosure is required by law. Furthermore, Jorgensen and Soderstrom (2006) and Barniv et al. (2010) reported that legal system is a significant determinant to disclosure levels in

[2]Just as an example, Commonwealth nations' accounting systems are under great influence of British accounting systems (Saudagaran, 2004, 8). In fact, the accounting system of almost every former British colony (Australia, New Zealand, Malaysia, Pakistan, India, and South Africa) has its roots in the British accounting model. The influence of the Dutch accounting system is also evident in Indonesian accounting, as well as German and French in their former colonies, or the American accounting system influence in Canada, Mexico or Filipinas (Mueller, Gernon, Meek, 1987, 12).

countries. Barniv et al. (2010) and Bushman et al. (2006) found that corporate disclosures are consistently associated with legal system type.

Thus, the review of accounting studies indicates evidence showing the impact of legal systems on accounting systems and accounting rules in different countries in order to develop accounting practices, including environmental disclosure. Beck et al. (2002) studied the development of accounting systems in different countries according to the legal systems in those countries. They indicate that the classes of accounting systems are different based on the individual legal system in place in that country. The authors assume that differences in legal systems between countries may affect the development of accounting systems.

Jaggi and Low (2000) examined the impact of legal systems on financial disclosures by firms in different countries. Their study was conducted on 401 firms from Canada, France, Germany, Japan, the UK and USA. The results indicate that the legal system of a country plays an important role in financial disclosures where firms from common law countries are associated with higher financial disclosures compared to firms from civil law countries. Holland and Boon Foo (2003) examined the different disclosure practices of firms in the USA and the UK and found that the variance in legal and regulatory frameworks between countries influences the type of environmental disclosure.

Thus, previous studies show that legal system has a positive relationship with the levels of environmental disclosure in accordance with statutory regulations. Accounting research conducted on cross-country differences shows that legal system has played a catalytic role in improving environmental disclosure and has a relationship between the level of a firm's disclosure and each country's legal environment and financial structure (Beck et al. 2002; Levine et al. 2011). For example, in Norway, a survey of 55 Norwegian companies revealed the rate of environmental disclosure in annual reports for companies had increased by 65% as an improvement in the quality of information disclosed (Nyquist 2003). This finding is similar to research conducted in a French context which indicated that the number

of firms which disclosed environmental information in their annual reports had increased from 4% in 1999 to 21% in 2002 because of laws that obligated the companies to mandatory disclose in their reports (Owen 2004).

Moreover, levels of environmental disclosure are said to improve in the context with which ecosystems are linked to the legal system. Jorgensen and Soderstrom (2006) indicated that environmental disclosures are related to legal origins and economic development. Their results show that Scandinavian organisations have the highest level of mandated environmental disclosures worldwide—led by Denmark, followed by German and then English legal origins. In contrast, the lowest levels of environmental disclosures are generally in emerging and developing market economies such as Brazil.

This might partly explain the differences between developing and developed countries in terms of environmental disclosure practices, where the level of environmental legislation in developing countries is still low when compared to developed countries. Furthermore, this legislation has little or no direct implication for accounting and reporting practices (Adams & Zutshi 2008; Belal 2001; Surmen & Kaya 2003).

2.5.3 Level of Economic Development (LED)

Many researchers have addressed the level of economic development as an influence in environmental disclosure by examining the level of the economic system of the state and awareness of the economic system applied (Hibbitt & Collison 2004; Yusoff & Lehman 2005). In this context, Xiao et al. (2005) reported that one of the significant factors affecting environmental disclosure is the economic development in a particular country. Over the last few decades, economic development has progressed differently from one country to another. Thus, countries are at different stages of economic development, which leads to the existence of different concerns and priorities from one country to another (Elijido-Ten 2004). Accordingly, Xiao et al. (2005) believe that environmental issues have attracted a great deal of attention in developed countries where, to date, they are one of the priorities for governments of

developed countries with developing countries lagging behind on this issue. On the other hand, it is worth noting that according to development economists the accounting system in countries is dependent upon economic development and industrialisation, thus financial disclosure increases as an economy becomes more developed and economic development affects a country's financial disclosure regulation (Hibbitt & Collison 2004; Xiao et al. 2005). Furthermore, Haider (2012) indicated that economic context is important in explaining accounting variation.

To determine whether economic development has an effect on accounting practices—and on environmental disclosure in organisations especially—many studies in accounting literature have examined the relationship between environmental disclosure and economic development. Furthermore, it has to be recognised that the level of economic development has witnessed increased attention by many researchers recently (Buniamin 2010; Elmogla 2009; Haider 2012). Branco and Rodrigues (2012) reported that in order to analyse corporate social and environmental reporting, many recent studies adopted an information economics perspective. Haider (2012, p. 6) asserts that 'the level of economic development of a country also has influence on the disclosure pattern'. In this respect, organisations in western countries have greater economic development, which leads to higher levels of corporate social and environmental reporting.

Cormier et al. (2005) examined economic incentives as one of the factors affecting environmental disclosure quality in 337 firms surveyed in Germany. The findings indicated that economically derived variables can, to a significant extent, explain corporate environmental disclosure, irrespective of the methodological approach used. In another study, Xiao et al. (2005) examined the impact of economic development on environmental disclosure in two countries, namely the UK and Hong Kong. Surveyed firms included 33 companies from Hong Kong and 36 from the UK. This study summarised that the difference in the levels of economic development have contributed to differences in levels of disclosure between the two countries where the level of disclosure is higher in the UK than in Hong Kong. Moreover, Williams (1999) undertook a study which included seven countries in order to

explain variations in the quantity of voluntary environmental and social accounting disclosure according to national variables, including economic development. This researcher concluded that the economic system in a country interacts to shape the perceptions of organisations in their need to release voluntary environmental and social accounting disclosure that meets social expectations. Therefore, these studies were conducted in different economic systems.

Ahmad (2004) stated that most of the world's economies belong to the Bourgeois or Marxist economy. In Bourgeois economies, the private sector has a prominent role in the economic development process; contrary to the Marxist system which gives the government a greater role in the economic system of the country. Bourgeois system or the so-called newly capitalist system encourages the private sector to play an important role in the economic development process. Consequently, governments—especially in Western countries—that adopt this system exert pressure on companies to provide information about their economic activities due to the significance of that economic information (Altman 2008; Williams 1999). Haider (2012) supported this opinion and regarded information offered in a Bourgeois political economy to explain accounting practices in organisations, including environmental activities, to be more valuable. In contrast, in the socialist system or so-called Marxist system, the volume of economic information is limited (Zoud et al. 2009). Therefore, to determine whether the economic system affects environmental disclosure, this research study adopted economic development as a variable to explain the differences in the quantity and quality of environmental disclosure, regardless of the economic system of the country. Archambault and Archambault (2003) reported that as an economy becomes more developed, firms need to raise more capital. As a result, the need for financial reporting increases.

It is interesting to point out that most countries seek to develop their economies through an economic plan to promote economic development, and economic development has been a significant factor in environmental disclosure practices (Tamazian & Bhaskara Rao 2010). Hypothetically, there should be a positive impact on the level of environmental disclosure practices in a given country as the level of

economic development increases. The financial liberalisation and openness of an economy are essential factors in pollution reduction.

2.6 Gaps in the Literature

The overall discussion of this chapter leads to a consideration of the following research deficiencies in the environmental accounting literature:

1) As discussed previously, there is relatively limited research on the environmental reporting practices of organisations operating within developing countries, or the external pressures exerted on such organisations in relation to their environmental performance and related accountabilities.

2) There is a dearth of research on environmental disclosure by oil companies in Arab Petroleum Exporting Countries; as well as deficiencies in the literary knowledge on the role and activities of international oil and gas corporations toward environmental responsibility in those countries.

3) There is a lack of research that involves stakeholder groups such as the media and NGOs, and that investigates their expectations or the pressures they can exert, and how these both directly drive the accountabilities and related disclosure practices of organisations operating in oil products from Arab Petroleum Exporting Countries.

4) There is minimal research that applies theoretical perspectives such as stakeholder theory and institutional theory to explain the motivations for organisational social disclosure practices within the context of Arab Petroleum Exporting Countries. Theories on social and environmental accounting and an interview-based study are seen to be more appropriate than a secondary data–based study. Nevertheless, most of the prior research has failed to embrace this method.

The above deficiencies have led to the conduct of this research which attempts to fill the gaps by adding to the existing body of knowledge concerning the motivations for environmental reporting practices of organisations operating in oil products from Arab Petroleum Exporting Countries.

2.7 Summary

This chapter focused on the following themes which would fill the gap in environmental disclosure practices in the Arab region. The first theme addresses the evolution of environmental and social accounting during the past four centuries, including the environmental disclosure practices in the accounting literature. This theme concluded that literary studies in environmental and social accounting were concentrated mainly in developed countries rather than developing countries. The second theme focused on environmental disclosure practices worldwide and outlines the most significant studies conducted in developed countries such as the USA, the UK, Canada, Australia, Japan and EU countries; as well as the most noteworthy attempts to study environmental disclosure practices in developing countries such as Malaysia, Indonesia, Bangladesh and South Africa. In addition, despite the scarcity of studies in the Arab region, this chapter revealed some environmental disclosure practices in certain Arab countries. Lastly, this chapter addressed variables that would show and explain variations in environmental disclosure practices among countries. These variables are the political and civil system, legal system and economic development. Therefore, it is relevant to point out that the accounting literature in the Arab region, despite its rarity; did not suggest the existence of a study examining these variables to explain the differences in environmental disclosure practices, especially in oil companies.

3.0 CHAPTER THREE: THEORETICAL PERSPECTIVES OF ENVIRONMENTAL DISCLOSURE PRACTICES AND DEVELOPMENT OF HYPOTHESES

The second chapter addressed the impact of national factors, political, legal and economic systems in countries on accounting research in general, and on research of social and environmental accounting in particular. According to opinions of accountants, academics and intellectuals, accounting is a social system; therefore, accounting exists within a set of systems such as political systems and economic systems. The cultural environment in any country has a significant impact on its systems, and there are variations in how the systems interact with one another. This is likely to lead to changes and interactions between systems within the country as a result of changes in the policy of disclosure by companies. As a result, changes and interactions between systems may affect the companies within countries and force them to provide further details about their activities in accordance with the requirements of these systems. In order to obtain a complete picture of the interaction of accounting practices within the surrounding regulations, theories have been used to provide explanation of these practices within the theoretical framework for these theories. Therefore, companies are likely to disclose their activities and provide more information about them voluntarily or as a result of pressure from owners or interest groups in order to gain legitimacy by relying on the practices of other companies in the same sector. According to studies that have used the theoretical framework to explain accounting practices (Björkman et al. 2007; Bruton et al. 2010; Deegan 2002; Deegan & Blomquist 2006; Neville & Menguc 2006), stakeholder theory and institutional theory are the most appropriate to understand social and environmental accounting and reporting practices. Accordingly, this chapter will provide an overview of these theories and the key justification for the application of these theories. Then it seeks to build a theoretical framework for environmental disclosure practices in accordance with the national factors in a country and within the theories that clarify these practices through the development of hypotheses that will explain the differences in environmental disclosure practices.

3.1 Synopsis of Theories Applied in Prior Literature

Recent research has witnessed a shift to utilising more than one theory in order to provide an explanation and clarification of particular managerial actions in institutions. The theories have the same philosophical background and they are complementary to each other. Deegan (2002) also suggested these should not be seen as separate, but complementary to each other. For example, stakeholder, legitimacy, and institutional theories have a similar perspective whereby broad social structures affect the company and are affected by it (Zunker 2011). González-Benito and González-Benito (2010) and Hassan and Ibrahim (2012) support the view that companies respond to the community as a whole according to legitimacy theory, while stakeholder theory is based on the power of constituent groups.

Many studies have used more than one theory wherein the researchers believe that the use of more than one theory may provide similar interpretations from different theoretical perspectives (Islam et al. 2008) and establish a set of observations which are influential at different levels of resolution. So, it is assumed that all theories are of value to study changes occurring in institutions in regard to corporate disclosure policies (Islam et al. 2010; Zunker 2011). Several theories, including stakeholder and institutional theories, are a theoretical basis for a number of studies. Both theories provide a foundation to study managerial behaviours such as the use of annual reports by managers (Delmas & Toffel 2004; Yang & Rivers 2009).

Through a review of literature, the theorists divided the theories used in the literature to study social and environmental accounting into two groups: positivist and normative (see Table 3-1). Theories such as legitimacy theory, stakeholder theory, institutional theory, agency theory and political cost theory are classified within the positivist group, while other groups include accountability theory and critical theory. Each group has its limitations and critics.

Table 3-1: Summary of Positivist Theories and Normative Theories

Basis of analysis	Positivist Theories				Normative Theories	
	Legitimacy Theory (e.g. Magness 2006; Cho & Patten 2007)	Stakeholder Theory (e.g. Huang & Kung 2010)	Institutional Theory (e.g. Cormier et al. 2005)	Agency and Political Cost Theory (e.g. Reverte 2009)	Accountability Theory (e.g. Holland & Boon Foo 2003; Parker 2005)	Critical Theory (e.g. Swindal 2009)
Broad Overview	Evidence shows this theory provides considerable potential to explain social and environmental disclosures	Widely used in management and accounting literature. It also provides potential to explain the phenomena. Factors such as power should be considered	As insights and assumptions are similar to those used in stakeholder and legitimacy theory, this appears a suitable framework to explain the phenomena	Widely used in financial accounting. But assumptions and conclusions appear questionable when applied to social and environmental research	Little insights to explain why management discloses social information. It provides value judgments	Little insights to explain why management discloses social information. It provides suggestions which may be well defined and based on strong theoretical claims and judgment.
Research Methods Used	Content analysis, case studies, interviews or surveys can be applied	Content analysis, case studies, interviews or surveys can be applied	Content analysis, case studies, interviews or surveys can be applied	Secondary data typically used	Review, case studies, interview or surveys	Review, case studies, interview or surveys
Prior Empirical Test	This theory has been used in much empirical research in social and environmental accounting	The insights provided can be empirically verifiable	The insights provided can be empirically verifiable	Much used in empirical research	Not developed for empirical testing as it is premised on a view of how things 'should be'	It may not be empirically tested
Prior Application	Widely applied	Widely applied	Limited application in the social and environmental accounting literature but has significant potential	Limited application (Assumptions and conclusions are contested by social researchers)	Limited application particularly to explain motivation for disclosure practices	Limited application particularly to explain motivation for disclosure practices
Relevance to this Thesis	Not relevant	Relevant	Relevant	Not relevant	Not relevant	Not relevant

In this study the normative theories are not adopted, although they provide contributions to explain social and environmental reporting of corporate practices. However, these theories do not explain the motivations behind these practices. In contrast, stakeholder theory and institutional theory provide potential in-depth insights to explain the underlying motivations for corporate social and environmental disclosures (Islam 2009). According to Ullman (1985), the interests and expectations of powerful stakeholders are of interest to the organisation. Institutional theory seeks to explain operating policies within organisations similar to those embraced by powerful stakeholders (Islam et al. 2008). Therefore, both these theories seek to find explanation for the driving factors behind organisational disclosure decisions.

Table 3-1 shows the review of the literature on theories in the accounting literature. It is clear that stakeholder theory and institutional theory are the most appropriate theories to develop a theoretical framework for this research. Accordingly, this chapter is intended to give an overview of these theories which are the primary theories appropriate to the voluntary disclosure of environmental information.

3.2 Stakeholder Theory

The basic idea of the definition of stakeholder is based on the redefinition of the organisation (Fontaine et al. 2006). The purpose of the organisation should be how to manage the interests of stakeholders on the basis that the organisation is a gathering of stakeholders (Friedman & Miles 2006). Fontaine et al. (2006, p. 3) state that 'The managers should on the one hand manage the corporation for the benefit of its stakeholders in order to ensure their rights and the participation in decision making and on the other hand the management must act as the stockholder's agent to ensure the survival of the firm to safeguard the long term stakes of each group'. On this basis, Freeman (2010) provides the traditional definition of stakeholder as any group or individual who can affect or is affected by the achievement of the organisation's objectives**.** However, academic researchers interested in studying the evolution of management have said that the organisation has changed in terms of its purpose and character over the years (Cummings & Worley 2008; Lewis & Kanji 2009). Thus, the definition of stakeholder has also changed. Freeman et al. (2004, p. 58) provides

his definition as ‘those groups who are vital to the survival and success of the corporation’.

One accounting assumption assumes that the institution will continue in its business for the foreseeable future (Godfrey et al. 2010; Schroeder et al. 2010). For the continued survival of the company, it needs support from stakeholders—that is the hypothesis that the stakeholder theory is based upon. Therefore, it be said that the stakeholders affect the firm through providing support. Freeman (2010) defines a stakeholder as ‘any group or individual who can affect or is affected by the achievement of the firm’s objectives’. However, the behaviour of stakeholders is different from each other, as well as their demands. The success of management is linked to the success of managing relationships with various stakeholders.

Stakeholders are those groups who can affect or are affected by corporate actions, decisions, policies and goals. Based on Freeman’s (2010) definition of stakeholder, there is a relationship between stakeholders and the organisation, so it can be said that stakeholders are customers, employees, local communities, suppliers, distributors and shareholders. Additionally, it can include other groups or individuals such as the media, the public in general, business partners, future generations, past generations (founders of organisations), academics, competitors, non-government organisations or activists considered individually; or stakeholders, representatives such as trade unions or trade associations of suppliers or distributors and financiers other than stockholders (debt holders, bondholders, creditors), competitors, and government, regulators and policymakers. In contrast, there is considerable debate among researchers about whether or not managers are considered to be stakeholders. A team of researchers has argued that managers are stakeholders because they have responsibility towards the interests of staff. Greenwood (2001) alleges that managers act as referees between investors and employees. Therefore, the stakeholder definition is very broad and it refers to groups of constituents who have a legitimate claim on the firm through the presence of the exchange or other relationships between the parties as governed by legitimacy (Islam 2009).

Many academics have attempted to provide a comprehensive and clear definition of stakeholder. Delmas and Toffel (2004) state that stakeholders are groups or individuals who have interests in organisations where they influence or are influenced by management practices and management policies within organisations—thus the institutions objectives are influenced. Moreover, Carroll and Buchholtz (2011, p. 85) define the stakeholder as 'any individual or group who can affect or is affected by the actions, decisions, policies, practices, or goals of the organisation'. Moreover, Phillips (2009) reported that stakeholders are groups that can affect or are affected by the corporation.

Stakeholder theory has been widely used in the accounting literature since Freeman's landmark book *Strategic Management: A Stakeholder Approach* was published in 1984 (Elijido-Ten 2007). Social and environmental accounting research (SEAR) is one area of accounting in which stakeholder theory has been commonly applied (Aerts et al. 2008; Husillos & Álvarez-Gil 2008; Liu & Anbumozhi 2009). Natural changes in the business environment of firms and increased corporate responsibility towards stakeholders give great importance to stakeholder theory, which can analyse the relationship between organisations and the stakeholders in the companies (Elijido-Ten 2007; Van Der Laan Smith et al. 2005). Moreover, organisations seek to manage their relationship with their stakeholders and surrounding environment through disclosures, whether financial disclosures or social and environmental disclosures (Belal & Roberts 2010; Delmas & Toffel 2004).

Stakeholder theory is one of the most important conceptual frameworks in the field of social accounting (Friedman & Miles 2006; Jamali 2008). Reviews of the literature in accounting, management and social sciences in general show that stakeholder theory has played a significant role in the development of research in these fields. The one field which has witnessed increased social awareness in recent years is environmental disclosure. Greater social awareness towards environmental disclosure is a result of aggravation of the damage arising from global warming, deforestation and unprecedented pollution. These phenomena surrounding companies have created a kind of responsibility for the company towards society and the

environment to increase disclosure of environmental issues through informing stakeholders. Therefore, it is not surprising that studies concerned with environmental disclosure have been widespread in developed countries such as Australia, the USA, Canada and the UK, indicating a wide diversity of stakeholder practices within corporations regarding social and environmental reporting practices—unlike developing countries (Clarkson et al. 2008; Cooper & Owen 2007; Husillos & Álvarez-Gil 2008; Zunker 2011).

Stakeholder theory has witnessed development over the years. This development covers all fields of research resulting from the use of this theory by many researchers. Freeman (2010) provides the stakeholder concept as a model to assess strategic decision-making in organisations for the continuity of the company's presence. In addition to analysis of external influences such as regulatory bodies, environmentalists and special interest groups, stakeholder theory has the potential to offer a useful framework given its basic premise that successful management of the relationships with stakeholders is the key to success (Freeman 2010). Moreover, Elijido-Ten et al. (2010) and Huang and Kung (2010) have used stakeholder theory in order to analyse decisions related to environmental disclosure in organisations as a response to stakeholders' requirements. Stakeholder theory provides an analytical basis for issues related to organisations' operations such as financial performance, social performance and disclosure, whether financial or social and environmental.

The model of Ullmann (1985) has been used to develop and test the determinants of environmental disclosure by many researchers (Elijido-Ten 2007; Kent & Chan 2003; Zunker 2011). This model is useful and offers a framework for many studies conducted on the relationship between social and environmental disclosure and influencing factors. Moreover, other studies have used the dimensions of Ullmann's (1985) model and concluded that there is a significant link between stakeholder power, strategic posture and economic performance and levels of corporate social disclosure (Elijido-Ten 2007; Van Der Laan 2009). These studies have been conducted in different countries with different cultures and different economic development. However, it can be said that this difference in relations between

variables may give motive to understanding the determinants of environmental disclosures.

A study has been conducted to understand the determinants of corporate social responsibility (CSR) disclosure using Ullmann's (1985) model. In this study, Van Der Laan (2009) found that there is a significant relationship between levels of corporate social disclosure and stakeholder power, strategic posture and economic performance of stakeholders. This finding was concluded from the study of 80 companies in the USA during 1984, 1985 and 1986. Moreover, Husillos and Álvarez-Gil (2008) undertook a study to examine environmental disclosure in small and medium Spanish companies using Ullmann's (1985) model; and another study examined voluntary employee-related disclosures in Australian companies' annual reports for 2004 using Ullmann's (1985) stakeholder framework comprising three dimensions: stakeholder power, strategic posture and economic performance. Elijido-Ten (2007) indicated in his results that companies employ strong corporate governance best practice to strategically manage employees through disclosing quality employee-related information. In the context of Australia, there are various studies which have used Ullmann's (1985) model to study environmental disclosures (Kent & Chan 2003) and environmental performance (Elijido-Ten 2007). Kent and Chan (2003) studied the quality and quantity of environmental disclosures against the variables. In this study the researchers found that stakeholder power is related to environmental disclosure. In another study by Elijido-Ten et al. (2010) it was concluded that environmental performance is significantly associated with stakeholder power and strategic posture, but not with economic performance. It is of paramount importance to point out that Ullman's (1985) model contains three-dimensions, namely, stakeholder power, strategic posture and economic performance.

3.2.1 Environmental Disclosure in a Stakeholder Context

Ullmann's (1985) model has been applied by many studies in order to explain motivations behind environmental disclosure (Zunker 2011). There are several studies which indicate that stakeholder pressures have played a significant role in

determining social and environmental disclosure strategies (Elijido-Ten 2007). Moreover, there has been confirmation from several studies that the level of corporate disclosure of environmental action has been influenced by demands of stakeholders (Aerts & Cormier 2009; Aerts et al. 2008; Husillos & Álvarez-Gil 2008; Suttipun & Stanton 2012b, 2012a). Elijido-Ten (2007) examined the impact of stakeholders on management decisions related to social responsibility disclosures using Ullmann's (1985) model. The findings indicate that the level of corporate social disclosure is associated positively with corporate strategic attitude, and economic performance.

Moreover, Elijido-Ten (2004) studied firm-specific characteristics that contribute to the level of information voluntarily disclosed through the perspective of stakeholders according to the model of Ullmann (1985). He concluded that firm size, financial leverage, and foreign listing status all had significantly positive relationships with the extent of voluntary disclosure. Furthermore, González-Benito and González-Benito (2010) investigated the impact of stakeholders on industrial firms, which are traditionally classified as highly polluting; they found that these firms pay more attention to environmental disclosure by different levels of environmental disclosure when preparing annual reports. In another study concerning managers' attitudes about environmental disclosure in corporations, Cormier et al. (2004) state that environmental managers' attitudes have a relationship with stakeholders through response of managers to meeting the demands of stakeholders in order to maintain social legitimacy of the corporation. Furthermore, the quality of the disclosure decisions and the patterns of voluntary environmental disclosure have been impacted by stakeholder pressures (Brammer & Pavelin 2008; Bremmers et al. 2007).

Furthermore, the stakeholder theory approach has been used in many academic studies on environmental disclosures in annual reports. Disclosure of environmental information in annual reports has been at the request of many stakeholders (Campbell 2004; Campbell et al. 2003). According to this theory, the annual reports are a key tool for disclosing environmental information and it is used in a manner to manage the relationship between corporations and their stakeholders (Buniamin

2010). For example, Elijido-Ten (2007), Deegan and Blomquist (2006), and Van Der Laan Smith et al. (2005) reported that companies provide environmental information because of the impact of the stakeholders on the company—especially customers, financial institutions, communities and suppliers. Consequently, shareholders and stakeholders have exerted more pressure on organisations to voluntarily comply with international social accounting standards in order to disclose environmental information in their annual reports (Elijido-Ten 2007; Huang & Kung 2010). For this reason, Gao et al. (2005) indicated that the level of environmental disclosure in listed companies on the Hong Kong Stock Exchange is low due to the lack of pressure on companies by stakeholders.

3.3 Institutional Theory

Companies are exposed to pressure as a result of the nature of their organisational structures (Brammer & Millington 2003; Delmas & Toffel 2004). Companies may change their structures and operations and aim at satisfactory structures in response to external expectations. This change in structure and operations in some organisations is the result of pressure from other organisations in the same field. However, some researchers suggest this change is due to the tendency of some companies to create a kind of conformity among organisations (Deegan 2002; Neville & Menguc 2006).

As a result of pressures on organisations from stakeholders to reach organisational structures compatible with the structures of other organisations, many theorists and academics have applied institutional theory to explain the existing corporate structures and reporting policies (Islam et al. 2008). Companies tend to conform to practices of other companies and to respond to changes in organisational structures in order to maintain survival and obtain legitimacy. This change which occurs in corporations is named isomorphism. Dillard et al. (2004, p. 205) state that ‘isomorphism refers to the adaptation of an institutional practice by an organisation’. According to the formula of isomorphism, organisations become more homogeneous in their structures and work environment (Islam et al. 2008).

Furthermore, institutional theory provides a viewpoint to support the practices of companies in order to create unity among them and to reduce pressures on companies (Islam et al. 2008). Institutionalism suggests that the symmetry should be at a high level of compatibility between the companies, as well as the existence of imitative behaviour between companies. Therefore, some industries such as chemical, oil and mining have small fluctuations in social and environmental description (Milne & Patten 2002). Moreover, there are pressures on organisations to control management behaviour—which creates tendencies towards isomorphism within organisations (Delmas & Toffel 2004; Islam et al. 2010).

Several researchers assert that the use of institutional theory has become widespread in many aspects of research such as economics and political science, as well as accounting research and social research (Björkman et al. 2007; Bruton et al. 2010). These studies have applied institutional theory widely in accounting research as a framework to provide a theoretical explanation of the social and environmental impacts in the operations of organisations (Bruton et al. 2010; Kostova et al. 2008).

There is another theory to explain organisations' behaviour towards environmental practices which conforms to a variety of theories such as stakeholder theory and legitimacy (Islam 2009; Van Der Laan 2009). In recent years, some studies have sought to explain accounting practices using institutional theory (Carpenter & Feroz 2001; Kostova et al. 2008; Tamazian & Bhaskara Rao 2010). Institutional theory has been widely used in many studies to examine organisational systems and practices (Björkman et al. 2007). It seeks to explain and clarify social changes within organisations as a result of pressures faced by organisations. The organisations interact with other organisations according to the symbiotic link between institutions which cause institutional pressures. This theory has emerged steadily as a framework to provide a theoretical explanation of the social and environmental impacts of the operations of organisations (Bruton et al. 2010).

Furthermore, several researchers have mentioned that institutional theory may be applied in emerging markets, taking into account the weak legitimacy of formal

institutions and the informal impact of cultural-cognitive aspects on managerial behaviour and its interaction with other theories to address these aspects such as stakeholder theory and legitimacy theory (Björkman et al. 2007). With the emergence of multinational corporations and the spread of their operations across the world, many researchers have used institutional theory to study various practices that take place within multinational corporations, as well as their organisational structures (Björkman et al. 2007; Kostova et al. 2008).

Numerous accounting and academic researchers have applied institutional theory in their studies on Multi-National Companies (MNCs) due to the rich theoretical foundation it provides for examining a wide range of critical issues pertaining to international companies (see Appendix 1). These studies include the fundamental applications of institutional theory in the recent international management literature, as well as constraints on the transmission and institutionalisation of organisations' practices in MNCs across borders. Moreover, other studies have examined the processes of large-scale transformation of national systems through the notion of institutional transition, upheaval, and imperfection; and explain the relationship between MNCs and their host environments based on such notions as legitimacy and liability of foreignness (Björkman et al. 2007; Kostova et al. 2008).

The emergence of institutional theory is attributed to sociologist Philip Selznick who said that organisations have to deal and adapt to the expectations of external parties as well as their internal actors (Peters 2005). Therefore, this study has been undertaken to explain how the organisational adaptation works with external expectations. The institutional theory gives new attention to the role of actors who shape organisations by imposing restraints and requirements instead of focusing on the role of markets, customers and the power of competitors in organisations according to economic models. Furthermore, organisational change is based on the regulatory environment surrounding the organisations (Adams 2002; Islam et al. 2008).

Organisations should deal with external factors and pressures thereon. Most theorists agree on the common point that organisations face external pressure to adapt to the institutional environment and to maintain their legitimacy. Therefore, institutional theory assumes that organisations must respond to external demands to a certain extent in order to maintain their legitimacy. For organisations to be more effective in their surrounding environment, they should respond to external expectations and arrive at similarity in their organisational structures. The studies which have been conducted on organisational structures observe that organisations that have structural similarity are members of the same field. For example, educational institutions seek to configure organisational structures similarly. Organisations have to rely on structures similar to other organisations so as not to lose legitimacy and thus become socially acceptable (Kostova et al. 2008).

To determine the motives behind the adoption of institutional practices, Bruton et al. (2010) present three classifications which are: coercive isomorphism, mimetic isomorphism and normative isomorphism. In fact, there are various pressures exerted on institutions, whether formal or informal, by other organisations. These pressures by institutions are similar to pressure from stakeholders (Deegan & Blomquist 2006), therefore, the organisation will seek to disclose information voluntarily in order to address economic, social, environmental and ethical values, as well as concerns of stakeholders (Delmas & Toffel 2004).

3.3.1 Use of Institutional Theory in Accounting Research

Accounting research that studies the practice of accounting in organisations has widely applied institutional theory (Lu 2008). Use of the institutional framework in accounting research provides information of interest to practitioners in the field of accounting in organisations (Carpenter & Feroz 2001). Users of institutional theory in accounting justify its use in order to have a better understanding of organisations, accounting practices that take place in organisations, and processes of change due to accounting practices (Carpenter & Feroz 2001; Yang & Rivers 2009). The review of the literature shows various types of organisations as institutionalised organisations, thus, it employs institutional theory to analyse all types of organisations and various

accounting practices, for example, management accounting change (Combs et al. 2009), the accounting profession (Burns & Baldvinsdottir 2005), accounting regulation (Arnold 2009), and accounting for non-profit organisations (Euske & Euske 2005). These studies provide evidence suggesting the importance of social culture and environment in the practice of accounting, as well as the use of accounting practices as rationalised institutions in order to maintain appearances of legitimacy (Dillard et al. 2004). This research yielded that institutional theory may provide a comprehensive conceptual basis for all changes in accounting practices, including impacts of these practices among organisations. Therefore, the present study employs institutional theory to study accounting practices related to environmental disclosure within oil companies.

In this context, many researchers believe that environmental disclosure is used by managers as a way to legitimise a firm's continued survival or its operations. It means that organisations adopt environmental disclosure policies in order to avoid legitimacy concerns or to obtain similar results to other companies relating to the disclosure of environmental policies (Carpenter & Feroz 2001; Cormier et al. 2005; Delmas & Toffel 2004; Kostova et al. 2008). Furthermore, some companies follow the same decisions taken by other influential companies related to environmental disclosure policy where usually these companies are industry leaders in a particular area of the industry. This, in turn, means that these decisions are driven by an institutional incentive; therefore, this process yields harmony between companies over time via routine imitation (Cormier et al. 2005).

In Arab petroleum exporting countries, although the national governments have established relevant environmental laws and regulations to encourage and mandate enterprises to disclose environmental information to the public, corporate voluntary environmental disclosure patterns are, to a large extent, affected by institutional factors. The incentive of corporate managers to adopt the environmental disclosure policy is likely to be the perception they will be seen to be similar to other organisations in the same industry (the oil sector in this study) and cope with inter-organisational comparisons within the same organisational field. This can be

regarded as one way to explain the development of voluntary environmental disclosures made by Arab petroleum exporting countries.

In fact, institutional organisations seek to develop environmental disclosure practices through institutionalisation principles. It may be intended to induce managers of influential firms to adopt environmental disclosure policies in order to achieve legitimacy. To that end, managers of other companies competing within the same industry seek to keep the project at a manageable size of symmetry through the commitment to the policy of disclosure of environmental information consistent with leading companies (Bruton et al. 2010; Delmas & Toffel 2004; Kostova et al. 2008). Moreover, this highlights the extent of coercive power in the legitimacy to induce influential companies to adopt disclosure policies followed by other companies. For example, some subsidiaries of leading corporations follow the environmental disclosure policy consistent with the policies of the parent corporation. As well, in competition between organisations, companies seek to imitate the leading companies in the same field in environmental disclosure policy in order to maintain the degree of competition (Yang & Rivers 2009). Therefore, this leads to policies established by an influential company being the standard pattern between organisations through the process of tradition. Thereon, institutional isomorphism of environmental policy is embedded in processes occurring within organisations and within the industry over time.

The tendency for similar environmental disclosure policies between organisations in the same industry is based on mimetic behaviour which plays a significant role in accelerating it. Response to external pressures differs between corporations in terms of speed. Some organisations are quick to imitate, while other organisations are in no rush to change until making sure of the results achieved by other organisations on the same policy issues (Combs et al. 2009; Cormier et al. 2005). Moreover, the results of research confirm that the extent of imitation differs among organisations (Aerts & Cormier 2009; Aerts et al. 2008). Along similar lines, the standard pattern in imitation of practices at companies generates a kind of routine. Under institutional pressures, tacit knowledge is acquired as a result of repetition of the application of

similar practices with other organisations. For example, some organisations would have applied the same accounting practices as applied in a prior period in order to gain the confidence of stakeholders by conforming to their expectations (Cormier et al. 2011; Cormier et al. 2005). Therefore, imitation, mimetic isomorphism and organisational routines assist in understanding disclosure behaviour regarding environmental disclosure practices that occur within an industry.

To sum up, the more influential corporations play a significant role in identifying environmental disclosure policy within other organisations through imitation, which turns to routine practice as a result. Therefore, increased environmental disclosure is a result of the process of symmetry according to institutional theory over time.

3.4 Supplementary Viewpoints of Theories

Islam (2009) reported that there is more than one theory originating from the same paradigm including stakeholder theory and institutional theory. Organisations from the point of view of these two theories are part of the broad social system. Furthermore, stakeholder theory and institutional theory have been widely used in social and environmental accounting research in order to explain corporate social and environmental accountability behaviour (Deegan & Blomquist 2006). Researchers who examined social and environmental reporting practices have provided several common characteristics to explain these practices.

To maintain the legitimacy of the organisation according to stakeholder theory, organisations should conform to the expectations of stakeholders. On the other hand, to maintain legitimacy of organisations, institutional theory focuses on institutionalised norms and rules in organisations (Islam et al. 2008). In this context, to determine the overlapping nature in institutional theory regarding the notion of legitimacy, Deegan et al. (2002, p. 293) reported that ‘under this theory, organisations will change their structure or operations to conform to external expectations about what forms or structures are acceptable (legitimate)’.

Furthermore, in order to give an overview of complementarities between these theories, it can be said that both theories participate in describing coercive isomorphism. An organisation from the point of view of the institution is coerced by a particular form or practice by its powerful stakeholder group, while stakeholder theory explores how stakeholder power can exert pressures on an organisation to follow that practice (Islam et al. 2010). Therefore, researchers and scholars in environmental accounting research and social theory argue that common views between theories should be seen as sources for the interpretation of various factors on decision levels in organisations. Deegan and Blomquist (2006) said that researchers who study voluntary disclosure in organisations believe that the explanation of disclosure provided according to institutional theory is a complement of the perspective of stakeholder theory in terms of pressures and expectations.

In summary, it can be said that no single theory alone is capable of describing practices in organisations in terms of the reinforcement of existing legitimacy or in explaining changes in social expectations. The use of more than one theory, such as stakeholder theory and institutional theory, provides a more rounded understanding of organisational responses associated with various environmental pressures.

3.4.1 Choice and Justification for Use of These Theories

The review of theoretical literature indicates that stakeholder theory has been utilised by researchers to explain the social and environmental reporting practices of organisations as a response to exerted pressures by particular communities or stakeholder groups (Cooper & Owen 2007; Jamali 2008). Apart from this theory, another theory that is emerging in the social and environmental accounting literature, and which has also been applied to explain social and environmental reporting practices, is institutional theory. As discussed previously, the two theories should not be considered as sharply distinct theories. Rather, they have been developed from a similar philosophical background and provide complementary and overlapping perspectives. They see the organisation as part of a broader social system in which they are impacted by, as well as able to influence, the expectations of other parties within that social system. In relation to this, it is the contention of the researcher that

a joint consideration of these two related theories provides richer insights into what drives social and environmental reporting practices than would be possible were only one theory considered in isolation (Islam 2009; Zunker 2011).

The application of stakeholder theory and institutional theory can gain rich insights into the incentives and motivations behind social and environmental disclosure by companies. Previous social and environmental accounting research conducted using these theories refers to institutions operating in developed countries tending to respond more to stakeholders in terms of providing social and environmental information in annual reports (Brammer & Millington 2003; Deegan & Blomquist 2006; Elijido-Ten 2007; González-Benito & González-Benito 2010; Neville & Menguc 2006). In contrast, prior research suggests that the disclosure strategy of organisations is brought on by a crisis of legitimacy, although little can be foretold about the behaviour of organisations operating in a developing country. Furthermore, using the stakeholder theory and institutional theory in relation to social and environmental disclosure provides rich insights into the factors that motivate managerial behaviours in organisations. Institutions operating in developing countries respond to the expectations of stakeholder groups in terms of disclosing the motivations behind providing social and environmental information in annual reports (Islam 2009).

Many researchers have applied more than one theory to explain managerial practices in organisations and how theories overlap with each other and provide slightly different and useful insights. Deegan and Blomquist (2006) state different theoretical perspectives in different theories should be seen as complementary to each other in providing explanations. Moreover, Deegan et al. (2002) insisted that the theories are linked together; therefore, they should not be viewed separately. Thus, stakeholder theory and institutional theory provide complementary and overlapping perspectives. Companies, from the standpoint of these theories, are part of a larger social environment effect and are affected differently by these theories in terms of their level of refinement relating to the issue of voluntary disclosures—with political cost being the least refined and stakeholder theory being the most refined (Islam 2009).

The theories outlined in this chapter are chosen based on how they relate to a company's decision to disclose environmental information in their annual report. Since stakeholder theory and institutional theory are complementary to each other, they can be applied directly to this study. Specifically, Ullman's theoretical framework is applied to this study of environmental disclosures to provide a structure in the development of the hypotheses. Hence, this thesis will determine to what extent stakeholder theory and institutional theory are applicable in the context of a developing country. Theoretically, there is no apparent reason why these theories would be more appropriate in one national context than another.

More specifically, application of stakeholder theory is adopted in many research studies to explain environmental disclosure practices in organisations as a result of pressure of specific communities or groups of stakeholders. Another theory from the accounting literature has been applied to explain environmental disclosure practices, namely, Institutional Theory. As previously discussed, it should not be considered that any theory is significantly more distinct than another. Instead, it should be seen that theories have similar philosophical backgrounds and provide integrated and overlapping perspectives. From a theoretical perspective the organisation, according to these theories, is part of a wider social system that can be impacted by or influenced by various elements. This thesis considers the common view in these theories will provide a richer insight into environmental disclosure practices than if only one theory was adopted.

As discussed previously, stakeholder theory and institutional theory provide rich insights into the factors that drive managerial behaviours regarding environmental disclosure practices in organisations. Previous research in social and environmental accounting which have used these theories suggest that organisations operating in developed countries respond to the aspirations and demands of stakeholder groups specifically, and in general to the wider community where it operates through the provision of environmental information within annual reports. Thus, the motives behind the disclosure of the legitimacy of such organisations are revealed. While previous research acknowledges that it is not possible to predict the behaviour of

organisations working in developing countries, this thesis seeks to investigate the degree and level of disclosure in organisations that operate in one of most important sectors in the Arab countries; and the extent of response by these organisations to the pressures and expectations of stakeholders.

3.5 Conceptual Model

In recent years, concepts of political and economic systems and culture have emerged to be the driving forces of many accounting practices within economic units, regardless of the quality of economic activities practised by those economic bodies (Archambault & Archambault 2003). These concepts contain many ideas and terms (such as economic and social justice in individual countries) and how cultural values influence the behaviour of communities. Therefore, companies which operate within this framework of regimes exercise their activities in accordance with the concept of the social contract; and communities see organisations according to their social activities through the economic, political and social circumstances prevailing in those communities (Amalric & Hauser 2005; Haniffa & Cooke 2005).

Political, economic and legal systems vary between countries. Each country has cultural practices that vary dramatically from country to country. As well, economic development varies between countries worldwide in terms of stages of economic development. Therefore, all these differences may have major implications for accounting practices of international businesses, including disclosure practices, and they have a profound impact on the quality of information and benefits provided to users in different countries (Archambault & Archambault 2003; Bushman et al. 2006; Jorgensen & Soderstrom 2006; McGuire et al. 2012; Williams 2004).

These systems focus on the interaction between governing factors in countries. This leads to the emergence of elements that may be sought to maintain self-interest through working within these systems according to their relationships. According to the theory of political economy, individuals in communities or institutions have a right to achieve their own goals and self-interest (Godfrey et al. 2010; Schroeder et al. 2010). However, at the same time, supporters of this theory believe that

governments have a role in protecting the interests of individuals who are seeking to achieve goals (Van Der Laan Smith et al. 2005). Government intervention provides the full benefit for all individuals and institutions within communities, for example, in the face of market failures and imperfect competition, market instability, or the presence of unacceptable activities affecting the community (Archambault and Archambault 2003; Haniffa & Cooke 2005).

Therefore, company initiatives relating to environmental activities may be disclosed in order to achieve their own interests and legitimise their relationship with the community (institutional theory); or avoid potential pressure from stakeholders and regulatory intervention (stakeholder theory). Based on the interrelationships between political, social and economic systems, companies provide information on their environmental activities according to pressure, either social or political, and exposure by companies to economic systems. Thus, the differences in the quantity of environmental disclosure information released may be due to variations in country-level characteristics that shape the socio-political and economic systems of respective countries.

Previous studies have examined influential external factors on accounting practices, including environmental disclosure, and have concluded that political systems, economic systems and culture systems are influential factors within countries and interact with one another. This interaction is linked to cultural, political and economic events that occur with accounting systems within the institutions (Archambault & Archambault 2003; Haniffa & Cooke 2005). It is recognised according to previous studies that changes in disclosure are affected by many determinants. This in turn means that change in disclosure by corporations is influenced by changes and interactions between and within cultural and national systems. Furthermore, it is likely that a significant change anywhere in systems can lead to multiple changes throughout systems. This highlights that any change in culture, political or economic systems leads to changes in levels of disclosure in corporations (Archambault & Archambault 2003). In this research study, a model is used to examine the factors that influence disclosure at the corporate level. This

model incorporates national culture, national political systems, legal systems and national economic systems. These systems are all shown to interact with one another in the model, under the influence of pressure from stakeholders and institutional pressures, resulting in a corporation's response to the amount of information disclosed. These systems and their effects are discussed individually, but to keep the aim of current study as manageable as possible, it must be noted that these systems are constantly interacting with one another and a change in one system can lead to responses in all the other systems.

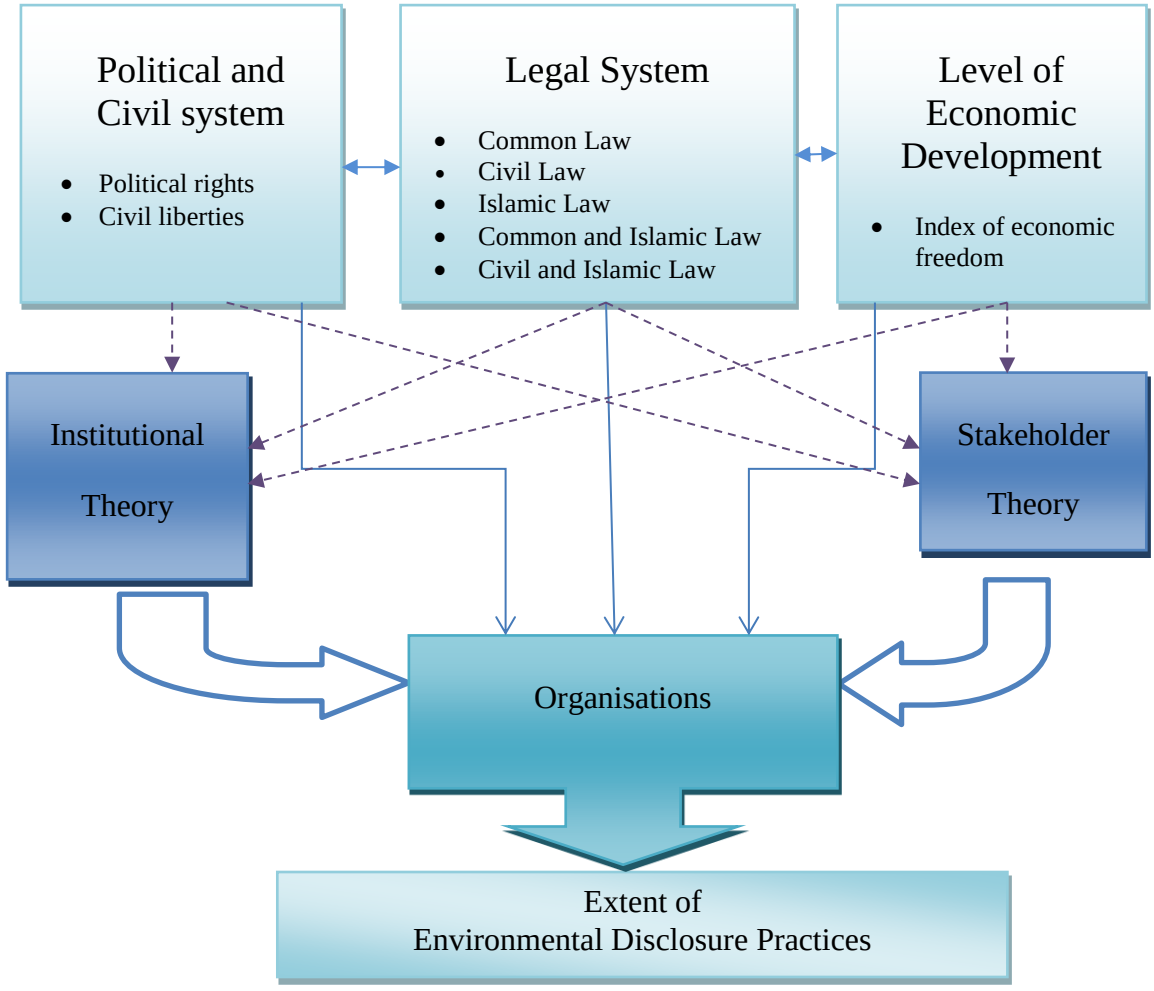

Figure 3-1: Conceptual Model for Environmental Disclosure Practices

3.6 Hypotheses Development

Accounting literature reviewed established that three of the most important national variables in international comparative research are the political and civil system, legal system, and level of economic development (Archambault & Archambault 2003; Hibbitt & Collison 2004; Williams 2004). The following section sheds light on these factors and their impact on environmental disclosure practices through the development of the hypotheses.

3.6.1 Political and Civil System (PCS)

There is an assumption in most existing studies that an increase in political and civil violations leads to a decrease in disclosure by organisations. Each country has a degree of political and civil freedom that is based on the degree of political rights and civil liberties in the associated political and civil structure. However, many countries in the world experience various forms of violation of political rights and civil liberties (Dreher et al. 2012). Moreover, environmental bodies, charity groups and trade unions face difficulties in carrying out their work in communities which experience violations of a political nature. Therefore, in the most open and free societies, companies need to further disclose their justifications for all activities (Berliner 2012). Moreover, the level and quality of environmental disclosure is generally dependent on the legal, social, financial, cultural and political contexts in which the company operates (Barniv et al. 2010; Bushman et al. 2006; Hasseldine et al. 2005; Jorgensen & Soderstrom 2006).

In recent years, a limited number of research studies have tested the relationship of political and civil systems in accounting practices. Eleswarapu and Venkataraman (2006) conclude that cost of liquidity in financial markets may decrease as a result of improvements in legal and political institutions. Therein, Bushman et al. (2006) and Girma and Shortland (2008) have argued that political factors have a significant effect on the development of financial systems where the political structure determines the shape of financial systems. As well as this, a number of factors including social and cultural values, political stance and legal systems contribute in

the development of accounting regulations. Many countries such as Belgium, Greece, Italy, Japan and the United States have enacted legislation related to financial policies as a result of political pressure (Sawani 2009). Therefore, accounting researchers such as Černe (2009) suggests that many developing countries are affected by the policies of their colonial countries and this is reflected in each nation's accounting practices.

Based on the above discussion, organisations in more liberal societies have a greater incentive to disclose environmental information in response to social expectations in order to achieve a wider range of societal interests. On the other hand, some organisations in a socialist environment are less liberal and may resort to limiting detection of environmental concerns or may not reveal anything at all for fear of greater scrutiny by government. Therefore, for the purposes of this study, the hypotheses are as follows:

H1a: There is a negative association between the level of political and civil repression and the quantity of environmental disclosure presented in the annual reports of oil and gas companies both in national organisations and international organisations.

H1b: There is a negative association between the level of political and civil repression and the quality of environmental disclosure presented in the annual reports of oil and gas companies both in national organisations and international organisations.

3.6.2 Legal System (LS)

The legal system in countries has an impact on the development of accounting systems, including standards, practices and financial disclosures (Barniv et al. 2010; Holland & Boon Foo 2003; Jorgensen & Soderstrom 2006). According to the findings of studies conducted in recent years, the significant roles in the development of financial markets are economic development, accounting practices, capital structure of the companies, and dependence of capital markets on the legal system (Archambault & Archambault 2003; Barniv et al. 2010). Therefore, it can be said

that financial disclosures in any country are affected by the country's legal system. However, it should be noted that countries often have similar laws in some critical aspects, but implementation and nuances vary between countries. According to this aspect, similarities between laws among countries have been used by legal experts to classify national legal systems (Welton 2012). Classification of legal systems by experts is based on a number of criteria; and legal systems of different countries have been broadly classified into civil and common law systems (Barniv et al. 2010; Bushman et al. 2006; Eleswarapu & Venkataraman 2006).

It can be said that common law is the traditional law of England where it was formulated on the basis of English law (Beck et al. 2002). Common law is based on judges' decisions in resolving specific disputes. Thus, these decisions offer a legal background to common law. Most countries colonised by the UK such as Australia, India and America apply this law. In contrast, Roman law is the basis for civil law which is characterised by rules formulated by legal scholars, based on ideas of justice and morality (Kingsbury & Straumann 2010). This law is based on statutes and comprehensive codes, and legal scholars have a significant role in this law. Countries that have applied this law have been classified into three common families of Civil Law: French-origin, German-origin, and Scandinavian-origin. Accordingly, the French colonies and some South Asian countries apply French law (which spread under Napoleon), while other countries such as Switzerland, Austria, Japan and Korea have been influenced by German law which is named the law of Bismarck. Category III of the law is the code ‘Scandinavian-origin’. Experts believe this law is somewhat similar to common law in some respects, therefore, its impact is negligible (Haniffa & Cooke 2005; McGuire et al. 2012).

Furthermore, most studies that addressed legal systems and their impact on accounting practices and economic activities have been conducted in developed countries. It is worth noting that most of these studies indicated that, for the most part, countries have a single legal system—either common law or civil law. However, other countries have built their legal systems according to the religion of the country. These countries have derived most of the terms of their legal systems

according to their religion. For example, most of the legal systems derived in many Muslim countries such as Saudi Arabia and UAE are based on Islamic Sharia law regarding economic practices in the banking system which is also based on Islamic Sharia law. Archambault and Archambault (2003) reported that speculative investments such as margin trading are not allowed in Islam because Islam prohibits transactions involving uncertainties. Furthermore, some other countries such as Tunisia and Egypt have adopted a mixed legal system in accordance with the country's religion and common law or civil law (CIA 2010).

Financial disclosures are influenced by legal systems either directly or indirectly (Eleswarapu & Venkataraman 2006). Direct impact is usually in the form of the development of Companies' Acts and regulations for companies such as accounting regulations which state the basic requirements for the process of accounting disclosure. Disclosure and measurement policies may also be influenced by tax laws, especially in civil law countries. Moreover, there is a strong influence of the legal systems on the ownership of companies and debt financing and, according to Barniv et al. (2010) and Bushman et al. (2006), financial disclosures are affected by legal systems. Bushman et al. (2006) found that the legal system may play a significant role in determining the differences in financial development across countries. Therefore, the management of companies seek to meet the needs of investors regarding information through more disclosures. Bushman et al. (2006) also noted the need for information for investors to give them the opportunity to play a greater role in financial disclosure.

Recent developments in corporate finance, economics and law have given substantial motivation to studying impacts of legal factors on the financial systems of companies, including financial disclosures made by companies (Eleswarapu & Venkataraman 2006; Perry 2002). Additionally, the financial reporting systems are influenced by a country's legal system (Archambault & Archambault 2003). The legal system is part of the institutional framework in the interaction of the accounting system. The concept of the legal system can influence accounting practices in a number of ways.

As discussed above, legal systems vary between countries. Some of them have a system of Roman law (Civil) and some common law; whereas some Arab countries head to Islamic Sharia law for their legal systems. Under Roman law systems, accounting practices, procedures and disclosure requirements are relatively left to the organisation, but fall within the law. In contrast to common law systems, accounting practices, procedures and disclosure requirements are not part of the legal requirements. Researchers who conducted studies on the extent of the influence of legal systems on corporations' activities indicate that companies under Roman law (Civil) may face more pressures in order to provide additional information over common law. This pressure is due to links between accounting and legal systems. Because of compliance to the necessary legal requirements, a company can feel that it has fulfilled all its obligations towards others. In contrast, civil law countries exert greater levels of social pressure on companies, where companies must provide information according to legislation to meet social expectations. If a company fails to meet those expectations, their social existence becomes threatened. This finding is similar to the results of Eleswarapu and Venkataraman (2006) who found that firms from common law countries are associated with higher financial disclosures compared to firms from civil law countries. With regard to the countries that adopted their legal system based on religious beliefs, Archambault and Archambault (2003) established that disclosure is significantly positive with Islam; which is inconsistent with the findings of Williams et al. (2010, p. 528) who reported that ‘environmental protection is given explicit attention in Islamic teaching and in the Shari’ah’.

Consequently, it is argued that companies operating within a socio-political and economic environment that emphasises regulatory development within legal legislation are provided with a greater incentive to disclose information. Therefore, there is a significant association between the quality of the legal system and the level of environmental disclosure of information provided in the annual reports of organisations. This procedure allows a company to show its positive image towards stakeholders. Thus, recent empirical research supports the theoretical assumption that the existing legal regime is an influential factor on environmental accounting practices. Based on this evidence the hypotheses are as follows:

H2a: There is a significant association between the type of legal system and the quantity of environmental disclosure in the annual reports of oil and gas corporations operating in Arab petroleum exporting countries both in international companies and national companies.

H2b: There is a significant association between the type of legal system and the quality of environmental disclosure in the annual reports of oil and gas corporations operating in Arab petroleum exporting countries both in international companies and national companies.

3.6.3 Level of Economic Development (LED)

Increased levels of economic development in a particular country lead to demands for better living conditions, education, workplace safety and training. It should return any benefit as a result of economic growth to everyone and not just be limited to a particular sector. However, the development of greater economic growth will increase the number of pressure groups and monitoring, such as labour unions and consumer organisations that seek to ensure equitable distribution of benefits derived from improved economic wealth. Furthermore, corporations which operate in more developed economies face greater pressure in order to ensure that their operations are effective and efficient. Again, it should be kept in mind that any pressure by governments on firms should result in greater economic development benefits for all, not just for an individual firm.

Accordingly, one factor that has received extensive attention in recent studies is the level of economic development. It is of paramount importance to point out that the impact of economic development on accounting practices has been addressed by many studies which indicated the existence of a positive impact on environmental disclosure (Aerts et al. 2008; Elmogla 2009; Williams 1999). A series of studies show that levels of disclosure and reporting practices rise in countries as the level of economic development increases. Therefore, organisations have a role in contributing to economic development through the level of stakeholder involvement in economic life within countries and pressure from stakeholders on companies to

increase economic activities (Bailey et al. 2006; Williams 1999). Yusoff and Lehman (2005) found that global economic pressures on business markets lead to higher rates of environmental disclosures among companies. In this context, Xiao et al. (2005) conducted a study to investigate the impact of the stage of economic development on corporate social and environmental disclosure by comparing two countries—one representing a high development (UK) company; and the other representing a typical newly industrialised economy (Hong Kong). The findings indicate that corporate social and environmental disclosure was perceived as more important by UK firms than by Hong Kong firms.

In the context of the difference between the countries regarding the importance of economic development in the activation of environmental issues in the countries, (Xiao et al. 2005) reported that economic development is one of most significant factors affecting social and environmental issues in developed countries, thus affecting the different types and levels of environmental information required. In developed countries, higher standards of living as a result of high economic resources draws people's attention to environmental and social issues more than their basic needs; thereby increasing their concern about environmental issues such as air, land and water pollution. This concern has contributed to raising awareness about these issues. On the other side, developing countries are still struggling to meet the basic needs of their people, which make the provision of these needs the most important priority rather than concern for environmental issues. Therefore, the stability of economic development and increased development in a country assists in open international competition for companies and thereby increase investment. Thus, it can be said that the level of economic development is a significant factor in explaining variations in accounting practices, thereby supporting the study. Cormier et al. (2005) reported that it may explain the differences in corporate disclosure through economic incentives irrespective of the methodological approach used. This, in turn, will lead to generating economic competition between corporations whether international or local firms and the emergence of economic pressure on companies (Amalric & Hauser 2005). Thus, based on this evidence the hypotheses are as follows:

H3a: There is a positive association between the level of economic development and the quantity of environmental disclosure presented in annual reports of oil and gas corporations operating in Arab petroleum exporting countries both in international companies and national companies.

H3b: There is a positive association between the level of economic development and the quality of environmental disclosure presented in annual reports of oil and gas corporations operating in Arab petroleum exporting countries both in international companies and national companies.

3.7 Summary

This chapter has provided a general discussion of stakeholder theory and institutional theory in order to reach an explanation for environmental disclosure practices in companies. Discussion of the complementary perspectives for these theories provides a holistic view of disclosure practices and thus reflects the differences between international oil and gas corporations that belong to developed countries, and national oil and gas corporations belonging to the Arab oil countries. Furthermore, perspectives according to both of these theories suggest that organisations provide environmental information as result of response to stakeholders, the public and social pressures. Based on that, a conceptual schema to explain the correlation between the independent and dependent variables in this thesis was constructed. Thus, hypotheses that are likely to measure the independent variables which are believed to have a significant impact on environmental disclosure practices in national and international companies have been built according to the International Financial Disclosure Model (impact of culture, market forces, and legal system on financial disclosures). Table 3-2 presents a summary of all the hypotheses formed.

Table 3-2: Summary of Hypotheses

variable	Hypothesis	Description
PCS	H1a	There is a negative association between the level of political and civil repression and the quantity of environmental disclosure presented in the annual reports of oil and gas companies both in national organisations and international organisations.
	H1b	There is a negative association between the level of political and civil repression and the quality of environmental disclosure presented in the annual reports of oil and gas companies both in national organisations and international organisations.
LS	H2a	There is significant association between the type of legal system and the quantity of environmental disclosure in annual reports of oil and gas corporations operating in Arab petroleum exporting countries both in national organisations and international organisations.
	H2b	There is significant association between the type of legal system and the quality of environmental disclosure in annual reports of oil and gas corporations operating in Arab petroleum exporting countries both in national organisations and international organisations.
LED	H3a	There is a positive association between the level of economic development and the quantity of environmental disclosure presented in annual reports of oil and gas corporations operating in Arab petroleum exporting countries both in national organisations and international organisations.
	H3b	There is positive association between the level of economic development and the quality of environmental disclosure presented in annual reports of oil and gas corporations operating in Arab petroleum exporting countries both in national organisations and international organisations.

PCS = Political and civil system;

LS = Legal system; and

LED = Level of economic development

4.0 CHAPTER FOUR: METHODOLOGY OF RESEARCH

The purpose of this chapter is to outline the research design adopted to address the objectives and test the propositions stated in this study. In order to do so, and consistent with previous studies conducted on environmental disclosure practices, content analysis has been adopted in this study to examine the level of environmental disclosures practices in oil and gas corporations' annual reports. Krippendorff (2004, p. 18) defines content analysis as 'a research technique for making replicable and valid inferences from texts to the contexts of their use'. Use of this approach assists researchers to improve the accuracy of their judgments by analysing different kinds of data bearing on the same phenomenon. A detailed discussion on the content analysis method utilised, including the selection of the disclosure medium, coding system and unit of measurement, is provided. Furthermore, a description of key variables used in the analysis is provided.

The investigation of oil and gas companies' environmental disclosure emanated from two contexts: (1) the results of an analysis of the environmental disclosure practices content of annual reports of such companies for the years 2008, 2009, and 2010; and (2) the political, economic and legal contexts and how these factors influence environmental disclosure practices (or non-disclosure) in Country of Arab petroleum exporting.

4.1 Content Analysis

In the past few decades, content analysis has been widely used in humanities and social sciences generally and accounting research particularly (Beck et al. 2010; Harwood & Garry 2003; Jose & Lee 2007). Researchers adopting a content analysis believe this technique enables analysis of 'open-ended' data to be structured for purposes of diagnosis and it has been applied to diverse fields of research including psychology, anthropology, education, linguistics and history (Harwood & Garry 2003).

Buniamin (2010) **s**tates that one of the most common methods used to analyse data in accounting research is content analysis. Typically, content analysis is an analytical description of the specific categories selected for characterisation of written materials. Characteristics of content analysis involve being objective, systematic and quantitative in terms of determining variables which allow any item to be judged as either belonging or not belonging to a particular category. Moreover, characteristics of content analysis include being objective, systematic and quantitative in terms of determining variables which allow any item to be judged as either belonging or not belonging to a particular category. Additionally, content analysis is used in accordance with a systematic approach which is characterised by ordinary critical reading (Ahmad & Gao 2005; Beck et al. 2010; Krippendorff 2004).

Goldstein (2011) reported that content analysis is a research technique for the objective, systematic and quantitative description of manifest content of communications. Likewise, content analysis is a research tool focused on internal features of media and actual content in order to determine words, concepts, themes, phrases, characters or sentences within texts or sets of texts and then quantify this presence in an objective manner (Kohlbacher 2006). Content analysis is defined as a technique used to identify specified characteristics of messages and for gathering data for codifying qualitative information in order to derive quantitative scales of varying levels of complexity (Vourvachis 2007).

Furthermore, Krippendorff (2004, p.18) cited content analysis as: '[a] research technique for making replicable and valid inferences from text (or other meaningful matter) to the contexts of their use'. Stemler (2001, p. 1) defined it as 'a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding'. Thus, it can be said that content analysis offers a methodology between a sender and receiver through objectively quantifying the content of the message (Harwood & Garry 2003). Moreover, Neuendorf (2002) defined content analysis as 'summarising, quantitative analysis of message that relies on the scientific method (including attention to objectivity-inter subjectivity, a priori design, reliability, validity, and hypothesis testing) and is not

limited to the types of variables that may be measured or the context in which the messages are created or presented'.

In view of the above, content analysis, as mentioned by many researchers (Ahmad 2004; Elmogla 2009; Jose & Lee 2007; Suttipun 2012; Thayer et al. 2007) can be summed up as follows:

1. Content analysis is unobtrusive; neither the sender nor the receiver of messages is aware that the messages will be analysed;
2. Content analysis of various types of documents produced on a regular scheduled basis presents an opportunity to develop longitudinal databases;
3. Content analysis allows the researcher to work directly with core human and organisational behaviour-communication;
4. Content analysis may facilitate researchers of differing methodological and theoretical persuasions to work together, thereby contributing to the convergence of theoretical and empirical perspectives;
5. Analysing naturally-occurring language has advantages over numerical analyses, especially for the understanding and describing of many organisational phenomena;
6. Content analysis facilitates linking summary statistics to natural language;
7. Content analysis accepts unstructured data (for example, the corporate annual reports used in this study), unlike questionnaires and structured and semi-structured interviews; and
8. It is a highly flexible method. It can be applied to a wide variety of unstructured information.

On the other hand, and as a result of increasing awareness concerning environmental issues and the subsequent increase of disclosure in corporate reports, a number of studies sought to analyse the data in order to show environmental disclosure in corporations (Campbell 2004; Patten & Crampton 2003). In a like manner, García-Meca et al. (2005) explained that mechanistic studies offer information about disclosure volumes and assist in the study of variables that impact on disclosure

behaviour. The data of these studies might be word counts, sentence counts, page proportions, frequency of disclosure and high/low disclosure ratings (Campbell et al. 2003; Patten & Crampton 2003).

In contrast, interpretative analysis tries to reach the meaning by disaggregating narrative into its constituent parts and then describing the contents of each disaggregated component. Interpretative studies aim to gain a greater understanding; of how meaning is understood and the effects of the narratives on users (Buhr & Reiter 2006; Livesey & Kearins 2002; Tregidga & Milne 2006). These types of mechanistic approaches are based on assumptions that convey meaning and reporting intent in order to reach to the meaning. Therein, Smith and Taffler (2000) contrast this with 'meaning orientation' suggesting that 'form orientated' content analysis involves 'routine counting of words or concrete references' whilst 'meaning orientated' analysis 'focuses on the underlying themes in the texts under investigation'. In this regard, meaning orientation has a greater interpretative element than in the mechanistic assumptions form of orientation.

4.2 Methods Employed in Content Analysis

Literature reviews of studies that used content analysis show different ways of using this method (Table 4-1). Neuman (2006) mentioned that content analysis turns the content of documents or other media into precise, objective, and quantitative data. Therefore, in order to identify the content of documents, there are two decisions to be made. The researcher has to develop a coding system and unit of measurement for analysis (Krippendorff 2004). In other words, identifying the data source and how it is to be categorised is a significant stage in any content analysis process in order to identify the themes of interest to the researcher and select the unit of measurement (or enumeration) with which to quantify the results (Elo & Kyngäs 2008).

Table 4-1: Selected Prior Studies in Environmental Accounting Showing the Range of Methods Employed

Author/year	Area of study	Method of study	
Unerman, 2000	Complement to Milne &Adler's (1999) paper on method application	Document analysis (multiple media)	Number of pages
Wilmshurst & Frost, 2000	Perception of importance of environmental issues and actual environmental disclosure	Document analysis	Volume count (sentences)
Cormier & Gordon, 2001	Relationship between company disclosure, size and ownership	Document analysis	Disclosure index based on Wiseman, 1982
Toms, 2002	Environmental reputation through disclosure quality	Document analysis	Empirical survey
Campbell, 2003	Environmental disclosures as a means of legitimising corporations	Document analysis	Volume count (words)
Milne et al., 2003	Triple Bottom Line reports in NZ and how they score with their reporting	Benchmark study	UNEP/Sustainability guidelines
Chapman & Milne, 2004	Reporting quality in NZBCSD	Benchmark study	UNEP/Sustainability guidelines
Patten & Crampton, 2004	Exploration of use of webpage to communicate environmental information to stakeholders	Document analysis (multiple media)	Disclosure index based on Wiseman (1982)
Ahmed , 2004	Corporate environmental disclosure	Document analysis	Volume count (words)
Hasseldine et al., 2005	Environmental reputation management through disclosures	Based on Toms (2002)	Empirical
Buhr & Reiter, 2006	Company's disclosure as a measure of contribution and reflection on discourse of environmentalism	Discourse analysis	Framing following Eder (1996)
Coupland, 2006	Role of stand-alone reports for non-financial information disclosures	Discourse analysis	Disclosure categories initially deducted from literature, but then evolved inductively
Van Staden & Hooks, 2007	External ranking vs. quality and information content of environmental disclosures	Benchmark study	UNEP/Sustain Ability guidelines and other studies

One of the simplest forms used in content analysis techniques is to study the phenomenon in a particular document, then the statement of the presence or absence of the phenomenon (Krippendorff 2004). Researchers argue that the basic analysis facilitates extending the number of categories or events in identified documents. Al-Tuwaijri et al. (2004) reported that one measurement technique used in environmental issues to analyse the environmental disclosure is 'yes/no' (or 1, 0) scoring methodology. The result of the analysis is determined after individual issues are quantified then researchers determine the aggregate score for each firm. This method was applied by Ebimobowei (2011) who examined the level of disclosure included in annual reports in Nigerian corporations. In his study, the author depended on a measure which gives a score of one for disclosure of any item related to environmental incidents or zero for no disclosure of any item. Furthermore, Bayoud et al. (2012) used a 'yes/no' (or 1, 0) scoring methodology as the content analysis method to examine corporate social responsibility disclosure in annual reports of industrial firms.

Furthermore, Patten (2002) adopted a similar approach in an examination of changes in environmental disclosures in 10K reports (See Appendix 2), by using 8 factors. In this study, sample corporations were given a score of one for the inclusion of any or all of 8 content issues. Accordingly, it could be concluded that corporations scored between zero for no disclosure and up to eight for inclusion of all items. Therefore, the 'presence or absence' method is useful in identifying environmentally related issues in annual reports. In contrast, this method does not consider the quantity and quality of disclosures.

Furthermore, a review of prior literature in accounting shows other ways that content analysis can be used. A number of researchers have used different units for recording and measurement in content analysis techniques of social and environmental disclosures. These units include a number or words (Ahmad & Gao 2005; Branco & Rodrigues 2012; Campbell 2004; Islam et al. 2008), a number of sentences (Beck & Toms 2009; Bhasin 2012; Deegan et al. 2002), a number of pages (Clarkson et al. 2008), or percentages of pages (Unerman 2000).

It is worth noting that some researchers used pages as unit of analysis due to pages tending to be the most readily applied unit of measurement. Pages reveal the extent and amount of total space on this topic. This refers to the extent of importance of that topic to the organisation (Krippendorff 2004). Moreover, pages are an easier (and more reliable) unit to measure by hand. Conversely, use of pages as the unit of measurement has been criticised because of differences in terms of sizes of articles, margins and typefaces between and in annual reports. Lynch (2007) considered this problem but found little effect due to the size of the articles, margins and typefaces. Another central argument against the use of pages is the potential loss of detailed information.

On the other hand, some researchers have criticised the application of words as a unit of measurement because it is an ambiguous measure, leaving the researcher pondering which individual word indicates corporate social disclosure and which does not (Campbell, 2004; Campbell et al. 2003, 2006; Haniffa and Cooke 2005). Therefore, researchers such as Bhasin (2012) used sentences as the unit of analysis. These researchers allege that sentences are less subject to inter judge variations than phrases, and classes and themes are easily identified and have been evaluated as an appropriate unit in previous research. Moreover, sentences overcome the problem of allocation of portions of pages and remove the need to account for, or standardise, the number of words (Bhasin 2012). Furthermore, sentences are a more natural unit of written English to count than words (Tilt 2001). Beck et al. (2010) dismisses the claim that sentences are a portion of the page measurement in spite of them being conventional units of speech and writing.

Other researchers have used sentences as preferred recording units in content analysis (Beck & Toms 2009; Bhasin 2012) due to sentences being easily identified and less subject to variation than phrases, clauses, or themes, and have been evaluated as an appropriate unit in previous research (Deegan 2002). Vandemaele et al. (2005) reported that much social and environmental accounting research used sentences as a unit of record in the content analysis because of its high reliability over any other unit. Additionally, Deegan et al. (2002) used sentences to measure the

level of annual report disclosure due to sentences not needing to standardise words in obtaining more reliable and detailed analysis of specific issues and themes. In spite of many researchers using sentences in their studies, they confirmed that other researchers have had to use other units to measure disclosure (Branco & Rodrigues 2012). Deegan et al. (2002, p. 323) said that 'whilst we use sentences in this study to measure the amount of annual reports disclosure it should be noted that many other studies use measures such as word, or proportion of pages'.

The social and environmental research has used content analysis to measure the amount of disclosure in a particular theme or event (Hassan & Marston 2010). Therefore, use of words or sentences may exclude important information contained within photographs, graphs or charts. Unerman (2000) argues that the most appropriate unit of measurement for content analysis is percentage or proportion of a page. This view is supported by Hassan and Marston (2010) and Thayer et al. (2007) who believe it is preferable to use pages as the unit of measurement in content analysis due their greater reliability.

Although different units are used in content analysis by many researchers, Guthrie et al. (2004) and Kohlbacher (2006) believe that there are difficulties in distinguishing between units used in the identification and coding stage and the units used for the quantification of those disclosures in many of the studies that use content analysis. Based on the aims of content analysis, the recording and/or measurement units should be consistent with the aims of content analysis. Neuman (2006) claims that using a number of words may be consistent with seeking the frequency with which a company uses the word 'environment' in an annual report, thus the frequency of words is most reliable.

On the other hand, the use of words as a unit of measurement has been criticised by some researchers due to words rendering the results meaningless, particularly during the coding stage (Branco & Rodrigues 2012). A number of researchers have used number of words as a unit of measurement in their studies (Ahmad 2004; Campbell 2004; Suttipun & Stanton 2012a). Krippendorff (2004) declares that the words are a

'syntactical unit' and subjectivity and meaning is not required. Additionally, words are the smallest and, therefore, the safest unit for quantification purposes in written documents (Krippendorff 2004).

Ahmad (2004) expressed the view that words have a characteristic of exclusive analysis where they can be classified easily. Furthermore, from a pragmatic perspective, words offer the advantage that databases may be scanned for specified words. Campbell (2004) justified use of words as a unit of measurement because it provided a greater amount of detailed description. Moreover, the application of words in business research allows the analysis to be more precise and defined to identification of the subject matter being sought (Ahmad 2004). Along similar lines, the use of words rather than sentences in many studies is because a part-page disclosure does not consider different print or font sizes, page sizes and measurement according to different grammar conveying the same message (Ratanajongkol et al. 2006). Other researchers have used words instead of sentences due to differences in the composition of the sentence in many languages, especially when the study contains annual reports published in more than one language (Suttipun 2012).

As discussed above, the literature review shows one of the most fundamental decisions for the researcher is to determine the recording unit. Studies have used different recording units, words, sentences, pages or lines. According to Campbell (2004), units have advantages and disadvantages. However, consistent with much research (Ahmad 2004; Campbell 2004) that aimed to measure the amount of environmental disclosure using words as unit of measurement; this study has chosen 'word' as the recording unit of environmental disclosure.

4.3 Coding Categories

To some extent there is consensus among the researchers in contemporary literature that there is no generally accepted guidance on what is the best practice of categorising text (Krippendorff 2004). Categorising each theme or category with each other should be exhaustive and mutually exclusive (Krippendorff 2004). Therefore, the selection of particular coding categories in this study was based on the

approaches of a number of previous researchers (Guthrie et al. 2004; Jose & Lee 2007; Suttipun 2012). The specific criteria for choosing and developing the categories and items of environmental information disclosed by sample companies in their annual reports included three key ingredients:

1) Much research has adopted categories and items of environmental information (Wiseman 1982). A review of the literature that addressed environmental reporting showed proposed formats for environmental reports, including items considered essential for complete environmental disclosure (Cowan & Gadenne 2005). It could be concluded that an environmental disclosure list based on these literatures cover 16 items in four categories.

2) Items of environmental information generally required disclosing by the extent of environmental laws and regulations requiring enterprises to disclose some information relevant to the environment.

3) Disclosure items were identified by other studies investigating environmental disclosures in oil countries such as Libya, UAE and Saudi Arabia. Some items used by previous studies on environmental disclosure were also considered for this study such as environmental impact of products and services, investment in the environment, energy reserves and/or consumption information for environmental reasons (Ahmad & Mousa 2011; Al-Janadi et al. 2011; Al-Shammari & Al-Sultan 2010; Hossain & Hammami 2009; Naser et al. 2006).

Based on the preceding criteria, a checklist of 16 items of environmental information by category is presented in Table 4-2. In this study, the items were classified into four categories. The first category concentrated on general disclosures by firms with regard to the environment. For example, firms disclosed that they had an environmental protection and energy saving policy and that their production had a significantly adverse impact on the environment, that they obtained governmental awards for environmental protection, and provided information required by environmental laws and regulation. The second category addressed financial information disclosures related to the environment by firms. For instance,

environmental expenditure for pollution control, investing in new environmental technologies, and finances for enhancing future environmental performance from governments, restoration, rehabilitation and environmental cost. The third category included items related to pollution discharge and abatement, such as the ability of a firm to disclose their actual pollution emissions. The final category focused on a firm's disclosure related to environmental sustainability. For instance, firms disclosed their energy reserves and energy use information, their conservation of natural resources and recycling efforts, and their tax advantages obtained for economising resources.

Table 4-2 List of Items of Environmental Disclosure

No	Item
1	Air Emission
2	Awards
3	Education and Training
4	Environmental Accidents
5	Environmental Auditing
6	Environmental Cost accounting
7	Environmental Management
8	Environmental Policies
9	Environmental Spending and Activities
10	Land Rehabilitation and Remediation
11	Litigation about Environmental Issues
12	Risk Management
13	Spill
14	Sustainable Development Reporting
15	Wastes
16	Water Effluent

4.4 Reliability in Content Analysis

There is no doubt that the reliability and validity of data collection is of prime importance in scientific research. To maintain the Reliability and validity of data, it has been used a decision rule followed strictly in measuring and recording data. Moreover, Research validity and reliability are two important criteria useful in judging the quality of research.

The reliability is consistent with results when the degree to which measures are free from error (Elo & Kyngäs 2008; Kohlbacher 2006). Therefore, data collection using content analysis should be reliable in order to ensure replication and any inferences drawn from the results are valid (Elo & Kyngäs 2008; Krippendorff 2004). As Krippendorff (2004, p. 21) explains:

> Any instrument of science is expected to be reliable. More specifically, when other researchers, at different points in time and perhaps under different circumstances, apply the same technique to the same data, the results must be the same. This is the requirement of a content analysis to be replicable.

Therein, the balance between specific categories and units is an important process for the researcher who uses content analysis. Krippendorff (2004) mentions there are three reliability issues that need to be considered in content analysis: stability, reproducibility and accuracy.

Firstly, stability means no change during a certain stage under stated or reasonably expected conditions (Krippendorff 2004). Moreover, Ahmad (2004, p. 106) suggests that 'stability refers to the ability of a judge to code data the same way over time'. In some studies, stability is used as an indicator of credibility (Neuman 2006), but it is the weakest of reliability tests (Ahmad 2004). However, Krippendorff (2004) indicates that the use of stability as the only indicator of reliability is not enough in the content analysis process. Secondly, reproducibility reliability means reaching the same results using the same data set by different coders. Coupled with that, reproducibility provides higher levels of reliability through a test-test design to evaluate reproducibility. Elo and Kyngäs (2008) and Harwood and Garry (2003) argued that conflicting coding usually results from cognitive differences among the

coders' ambiguous coding instructions, or from random recording errors. Thus, Krippendorff (2004) states the coders must be independent in order for the analysis to have reproducibility, where high reproducibility is considered a minimum standard for content analysis. The third type of reliability test is accuracy. Krippendorff (2004) claims accuracy is the most robust reliability test. Furthermore, accuracy requires accurate comparisons between the performance of the coder or the instrument against a predetermined standard that has been set by a panel of experts, or known from previous experiments and studies which should represent the expected correct performance (Beck et al. 2010; Elo & Kyngäs 2008; Kohlbacher 2006). Therefore, Krippendorff (2004, p. 131) stated that the accuracy test of reliability assesses 'intra-observer inconsistencies, inter-observer disagreements, and systematic deviations from the standard'.

Furthermore, to increase the reliability in category-based content analysis, Kohlbacher (2006) and Protheroe et al. (2007) suggest some points such as defining the content analysis categories using exhaustive definitions; discriminations between subcategories should be accurate; and the use of dichotomous decision methods. These points may assist the researcher in terms of increasing reliability when the subcategories are not of major theoretical significance and, additionally, using the dichotomous decision method assists in increasing reliability (Kohlbacher 2006).

With regarding to the validity of the data, Given that a major objective of this research is to investigate in environmental disclosure, particularly in annual reports of oil and gas corporations, a discussion on environmental disclosure in annual reports is provided with an explanation on how research validity in qualitative analysis is achieved. Additionally, the methods have been used in this research in order to strengthen the validity of the data collected by using content analysis. All disclosures that were collected from the annual reports related to the company and its business. These disclosures must be specifically stated and they cannot be implied. In addition, any word that has more than one classification, it has been classified according to the activity most emphasised in the word. Moreover, any disclosure that

is repeated shall be recorded as environmental disclosure words each time they are discussed.

4.5 Environmental Disclosure Index (EDI)

Environmental disclosure index is widely used in accounting studies, precisely in studies of social and environmental disclosure (Cormier et al. 2011; Da Silva Monteiro & Aibar-Guzmán 2010; Hassan & Marston 2010). Many studies worldwide have tested the disclosure of information using different measurements depending on their objectives. Some of those studies have used environmental disclosure index to measure the quality of reporting (Al-Shammari & Al-Sultan 2010; Hossain et al. 2005), while others have measured the quantity of information disclosure (Haniffa & Cooke 2005; Hasseldine et al. 2005). However, the justification for using this methodology lies in the recognition of the independent variables (information disclosure) not being adjustable in measurement. In addition, the use of this technique has been widely accepted in research and has not yielded significant adverse comments. The scarcity in the comments is due to the spread of economic indicators in everyday life.

After a review of studies in social and environmental accounting literature, it can be said that recognised methods to measure environmental information have been widely used in many studies and include the work of Ernst and Ernst (1978), and Wiseman (1982). Many studies have adopted the work of Ernst and Ernst (1978) which is considered the cornerstone of many of the studies in the USA during the late 1970s and early 1980s. The method of Ernst and Ernst (1978) is based on social information published in annual reports. The framework of this method identifies different categories of social information identified as environment, human resources, products, and implications for the community, ethics and others. Additionally, using this method in analysis assists to distinguish between monetary quantitative information and non-monetary quantitative information, as well as determining for each category the number of occurrences of this type of information in the annual report (Saida 2009).

Other studies have employed environmental disclosure index in order to examine the extent of environmental disclosure in corporations' annual reports based on Wiseman's (1982) approach to environmental disclosure index. According to the method of Wiseman (1982) there are six categories: economic factors, laws and rules, decreasing pollution, lasting development, land restoration and environmental management which are adopted to divide the environmental information published by companies. In this method, the company takes the value of 3 for items mentioned in the monetary unit; it takes the value of 2 for items mentioned in a specific manner; and the value of 1 if the item is mentioned in a general manner. The value zero (0) is given to a company if the item is not mentioned. Studies that use the Wiseman (1982) method to measure the disclosure of environmental information deem it suitable due to several reasons: the integration of many types of information in one figure; the clearness of the process; and the elimination of useless information (Al-Tuwaijri et al. 2004; Saida 2009).

Environmental disclosure index provides a valid and useful technique to measure the independent variable. The context of previous literature which used environmental disclosure index argues that use of an environmental disclosure index is an effective way to identify the qualitative information that can then be pilot-tested for associations with potential explanatory variables. The environmental disclosure index is a dichotomous method of measurement and many previous studies conducted to examine environmental disclosure adopted this method (Al-Janadi et al. 2011). This method contains two types and some studies use the dichotomous method of measurement with a weighted approach (Al-Janadi et al. 2011; Buniamin 2010; Kent & Chan 2003) because some items are more important than others and this information helps investors in their decision-making. Other studies have used the items of disclosure with an unweighted approach (Haniffa & Cooke 2005), because this approach gives importance to all information that is relevant to all groups of users, contrary to the first approach which gives relevant information to one group of users.

4.6 Choice of Measurement Technique

Previous studies that adopted environmental disclosure index or content analysis to measure environmental disclosure practices have explained explicitly the reason for choosing one method over other. However, researchers have pointed out in their discussions that they are trying to measure the amount and level of disclosure regardless of the method used. Use of the index to measure the disclosure practices of social and environmental disclosure is widely used in many studies conducted in different countries such as France (Field 2009), Bangladesh (BelalKabir, et al. 2010; Hossain et al. 2006; Islam 2009), Malaysia (Buniamin 2010; Buniamin et al. 2011), the USA (Saida 2009), the UK (Beck et al. 2010), Arab countries (Al-Janadi et al. 2011), and Australia (Yusoff & Lehman 2005). These studies aim to explain why disclosure and the level of disclosure practices of social and environmental reporting have increased. Conversely, a number of studies that applied content analysis assumed that the number of words and sentences or pages is the best representation of the quantity of disclosure; unlike the environmental disclosure index which gives valid results only to the extent that the index used is appropriate (Hassan & Marston 2010). However, by reviewing the literature that addressed measuring environmental disclosure using environmental disclosure index or content analysis, it can be said that environmental disclosure index is complementary with content analysis. Beattie et al. (2004) assert that environmental disclosure index can measure the extent of disclosure using index scores. However, Saida (2009) stated in his study—which uses the environmental disclosure index and content analysis to measure environmental disclosure—that because environmental disclosure index has a limitation, the use of word count partly overcomes this problem.

According to what has been discussed above and in order to measure the quantity and quality of environmental disclosure in international oil and gas corporations and national oil and gas corporations, this study applied both environmental disclosure index and content analysis in order to achieve the purpose of the research. Use of environmental disclosure index to measure environmental disclosure is set up by taking the total scores of the index of each company's environmental issues. Based

on previous studies (Aerts et al. 2008; Buniamin 2010; Clarkson et al. 2008; Da Silva Monteiro & Aibar-Guzmán 2010; Hasseldine et al. 2005; Huang & Kung 2010), there are 16 items that can be used in this study to categorise environmental information in annual reports. Therefore, in order to measure the quality of environmental disclosure of items shown in Table 4-2, this study assigns the greatest weight (+3) to monetary disclosures related to the environmental items, and assigns the next highest weight (+2) to quantitative[3]. Finally, general disclosure receives the lowest weight (+1). Firms that do not disclose information for a given indicator receive a score of zero for that item. Thus, a total possible score for each company equals 48. In other words, the highest quality of environmental disclosure is 48, while the lowest quality is zero. This method is used in many studies (Hossain et al. 2006; Liu & Anbumozhi 2009; Lopes & Rodrigues 2007; Ngwakwe 2009; Tabachnck & Fidell 2007; Uwalomwa & Marte Uadiale 2011), while other studies adopted this method with some additions (Al-Janadi et al. 2011; Al-Tuwaijri et al. 2004; Saida 2009). Besides, in order to measure the quantity of environmental disclosure, the word count is applied in this research along the lines of many of the studies that have used word count as a unit of measurement in the content analysis. Using content analysis as a methodology of analysis in this thesis is in line with data analysis techniques adopted in many theses in order to reach the desired results (Ahmad 2004; Elmogla 2009; Suttipun 2012).

4.7 Dependent Variable Measurement Instrument

The preceding discussion addressed the different techniques used to measure the dependent variable and the reasons for choosing these methods to measure environmental disclosure; the discussion now focuses on the development of measuring instruments to measure environmental disclosure in this study.

[3] Quantitative has been used as a measure of environmental information contained in the annual reports which are described as the number or an amount of quantity (Al-Tuwaijri et al. 2004; Hossain et al. 2006; Liu & Anbumozhi 2009; Saida 2009).

4.7.1 Measurement Instrument - Content Analysis

Using content analysis to measure the amount of disclosure in companies is through the number of words that have been selected as a unit in content analysis. Review of the literature relating to use of content analysis shows that there are three techniques when coding: (1) coding by humans; (2) coding by computer and (3) a combination of these two. In this study, however, the third technique is used.

Measurement of the amount of disclosure in the annual reports of companies is through carefully reading the report of each surveyed company. Each page in the annual reports has been carefully examined to determine environmental information using computer software named Nvivo[4]. This procedure is done through the introduction of pre-defined items (items of environmental disclosure) in the list of software of Nvivo. In order to facilitate the analysis process, there is a separate file for each company that contains detailed data for each company, such as company name, nationality and places of operation; in addition to testing years 2008, 2009 and 2010. The results from the computer program were converted to an Excel spread sheet to limit the number of words enshrined in the annual report for each item of environmental information, and for each year of the analysis of each company. Therefore, frequencies of words for each item of environmental disclosure for the company for each of the years represent the quantity of environmental disclosure by the company.

4.7.2 Measurement Instrument – Environmental Disclosure Index

In this study, environmental disclosure index approach has been used to measure the extent of disclosure of environmental information in annual reports. Therefore, for this study to measure the quality of environmental disclosure, a scoring sheet was prepared for all companies with regard to the 16 disclosure items. Each company's annual reports were read one by one to determine if each company disclosed the

[4]Nvivo is a computer software package which is designed to work on the analysis of qualitative data. It has been widely used by a broad class of researchers in several areas, including the social sciences.

items in the index and were then scored accordingly. The quality of environmental disclosure for surveyed companies can be assessed by placing a score in front of each item box: 3 if the company has disclosed the items as monetary disclosures; 2 if the company has disclosed the items as quantitative; 1 if the items have been disclosed as qualitative disclosures or 0 in the absence of any disclosure. A total score for each company equals 48. In other words, the highest quality of environmental disclosure is 48 while the lowest is zero. Therefore, the disclosure model for the unweighted environmental disclosure measures the quality of environmental disclosure score for a company as follows:

$$QLED_i = \sum_{j-1}^{n} \mathrm{ED}_i$$

Where, QLED$_i$ is the total score of quality of environmental disclosure contained in annual reports of the firm$_i$; and ED$_i$ is the score of environmental disclosure of the *j* item for the firm$_i$, in which *j* = 1, 2, 3 ...16.

4.8 Independent Variable Measurement Instrument

In this research study, a variety of techniques have been used to measure the societal variables examined. Therefore, this section illustrates the method of measurement appropriate for each societal variable.

4.8.1 Political and Civil System (PCS)

Measurement of the political and civil system for countries which are home to national and international oil and gas corporations used in this research depends on the overall index score of political rights and civil liberty from the freedom house organisation. Other researchers have used this index (Archambault & Archambault 2003; Williams 2004). The index is classified from 1 to 7 for both political freedom and civil liberty. For political rights, a score of 1 indicates that the country has great political freedom; whereas a score of 7 infers a lack of political freedom. Civil Liberty has also been classified on a scale of 1 to 7, where 1 indicates a high degree of civilian freedom for the citizens of the country; and 7 denotes the existence of

restrictions on civil liberty. These indicators are published annually by the organisation to all countries worldwide. An overall index score is calculated for each country by combining the respective county scores for both the political and civil index values given by the freedom house organisation for each year of the study period. The combined score is utilised as this is seen as a better reflection of the overall influence of this factor (Williams 1999, 2004).

4.8.2 Legal System (LS)

With regard to the legal system, the measurement technique used is a dummy variable code based on categorical variables in multiple regressions (Field 2009). This technique classifies countries into two groups: the first group is related to countries of international corporations where it is divided into countries that apply common law and those that apply civil law. For measurement processes, countries that belong to the common law category receive a value of one (1), whereas countries belonging to the civil law are given the value two (2). The second group is related to countries of national corporations where countries applying the Islamic Sharia law are assigned a value of three (3), countries applying the common and Islamic law are assigned a value of four (4), and countries applying the civil law and Islamic Sharia law a value of five (5). The legal systems of the surveyed countries in this study were obtained from the World Fact-book Country Profiles (CIA 2010).

4.8.3 Level of Economic Development (LED)

Many studies have measured the level of economic development using a variety of techniques. The studies that examined economic development have concluded that countries' economies evolve from year to year. Accordingly, to continue economic development the companies seek to expand their operations in order to contribute to economic development. Thus, these companies need to raise more capital which leads to an expansion of the companies' operations and, thus, to an increase in published financial reports. Archambault and Archambault (2003) mentioned in their research that the average firm disclosure is higher in developed countries than in emerging markets. Therefore, the level of economic development in many studies

was measured based on classification, either developed or emerging, as found in the World Development Report. Recently, an index of economic freedom to measure economic development in countries was widely applied in many studies (e.g. Altman 2008; Gwartney et al. 2008; Gwartney et al. 2010; Hardaker & Masoud 2012). Subsequently, these studies yielded the importance of the use of indexing economic freedom to measure economic development. Gwartney et al. (2004) suggest that the difference in economic growth is a result of the variation in institutional quality in a country, which is measured by indexing economic freedom. Thus, indexing economic freedom in this study is necessary as a measurement factor of economic development for the following reasons. Index of economic freedom gives index to stimulate investment in a country (Compen et al. 2012); it promotes free trade between countries; and the index of economic freedom is complemented by political rights index (Dreher et al. 2012). Index of Economic Freedom of each country in this study is collected from Gwartney et al. (2008; 2009; 2010).

4.9 The Regression Model

Regression analysis is a statistical technique used to assess the relationship between dependent variables and independent variables. Multiple ordinary least square (OLS) regressions are conducted for quantity and quality of environmental disclosure against the three independent variables. Table 4-3 presents a description of independent and dependent variables used in the model. The regression model used to test the hypotheses is as follows:

1) $\mathrm{QTED} = \mathrm{a} + \beta 1\mathrm{PCSi} + \beta 2\mathrm{LSsi} + \beta 3\mathrm{LEDi} + \mathrm{e}$

2) $\mathrm{QLED} = \mathrm{a} + \beta 1\mathrm{PCSi} + \beta 2\mathrm{LSsi} + \beta 3\mathrm{LEDi} + \mathrm{e}$

Table 4-3: Description of Variables

Variable	Status	Score	Type of Variable	Description
QTED	Dependent	Word count	Scale	A total quantity score of environmental disclosure for firm i at period t
QLED	Dependent	EDI	Scale	A total quality score of environmental disclosure for firm i at period t.
PCS	Independent	1-7	Ordinal	The degree of political rights plus the degree of civil freedom in a country, where they ranked from 1 to 7 according to Freedom House, so the 1 refers to full freedom in the country, while 7 refers to the lack of freedom in the country.
LSs	Independent	1-5	Categorical	The applied legal system in the country as dummy variable where 1 refers to COML, 2 refer to CIVL, 3 refers to ISL, 4 refers to COMISL, and 5 refers to CIVISL.
LED	Independent	0-100	Scale	Level of economic development is measured using index the economic freedom which is the degree of freedom granted to businesses and ranked from 1 to 100, where high value indicates the existence of freedom in business while the least value indicates a limitation on business

4.10 Disclosure Medium

A review of past research conducted on social and environmental disclosure illustrates that a range of disclosure mediums has been used either individually or in combination with several mediums. Krippendorff (2004) asserted that one of the important stages in the use of content analysis is the selection of documents. These documents include various components such as annual reports, 10-Ks, advertisements, brochures, environmental reports and media reports. In recent years, a number of companies have chosen to disclose their information on websites, CD ROMs and videos (Jose & Lee 2007; Patten & Crampton 2003). Many empirical studies analyse the environmental and social disclosure framework by examining the incidence or content of the company's annual reports, company websites, or separate social, environmental and special purpose employee reports (Brammer & Pavelin 2008; Campbell et al. 2006; Patten 2002).

However, the annual reports are the most commonly documented and used medium in accounting research (Tilt 2010). Many researchers who conducted research on

environmental studies have used annual reports as a main resource of environmental information (Al-Tuwaijri et al. 2004; Beattie et al. 2004; Da Silva Monteiro & Aibar-Guzmán 2010; Hossain & Hammami 2009). In other words, other documents may be used to disclose information by corporations, however, annual reports contain the minimum social and environmental information published (Buniamin 2010). Cowan and Gadenne (2005) suggest that annual reports are useful instruments for the dissemination of information to stakeholders.

Furthermore, research conducted in the field of environmental accounting over past years suggests that the annual report is considered the main source for most environmental research. Mathews (2009) concluded that the annual report was selected as the sole medium of environmental disclosures for study. Moreover, using annual reports provides the opportunity to compare results more easily with previous research in the field.

Over the last few years, researchers have provided good reasons to focus on annual reporting in order to study environmental disclosure practices in corporations (Beattie et al. 2004; Holland & Boon Foo 2003; Van Der Laan 2009). Holland and Boon Foo (2003) reported that the annual report is the principal means for corporate communication of activities and intentions and it has been the source for virtually all previous corporate research. Moreover, it is an important device for financial communication between management and shareholders and it is argued that annual reports are a logical medium for communicating corporate attempts at legitimating environmental activities. Other researchers argue that corporations use annual reports in order to promote their image by adding other information to the financial information; and annual reports are the least costly. On the other hand, Buniamin (2010) and Ismail and Ibrahim (2012) see the annual report as a legal report where it is a requirement by legislation in many countries; in addition to it being produced on a regular basis which facilitates comparisons via a relatively easy process. Besides, annual reports are being used increasingly by corporations to provide more information regarding their social and environmental activities (Holland & Boon Foo 2003; Summerhays & De Villiers 2012; Suttipun & Stanton 2012b; Van Der Laan

2009). Finally, the annual report presents an historical account of the activities of a company and its management in a comprehensive and compact format (Beattie et al. 2004; Guthrie et al. 2004; Llena et al. 2007).

Recognising the strength of these justifications for using annual reports, the present study also uses the annual reports of companies in both Arab petroleum exporting countries and international oil companies operating in those countries as a main resource of information. It has to be recognised that the use of annual reports in this study is based on the fact that most corporations operating in developing countries, including the Arab region, generally use annual reports rather than any other medium to disclose environmental information (Belal et al. 2011; BelalKabir, et al. 2010). Consequently, and in order to derive a final score, the use of annual reports in this study facilitates comparison between local companies and international companies.

4.11 Sample

This study focuses on the petroleum industry including exploration of oil and gas, and extraction and refining of petroleum products. Selection of oil and gas companies in this study is in accordance with the following justifications: (1) homogeneity in the operations of oil companies and gas and emissions of chemicals; (2) previous studies which addressed the impact of the type of industry on the environment indicate the oil and gas industry is viewed as one of the environmentally sensitive industries and it is the major industry contributing to the pollution of the environment (Da Silva Monteiro & Aibar-Guzmán 2010; Wawryk 2003); (3) during the period of this study the world witnessed the largest environmental disaster caused by oil operations by one of the oil companies (Goldstein 2011; Heflin & Wallace 2011); (4) the oil and gas industry remains the main source of energy in the world (Longwell 2002), as well as the main source of income in the countries of the study. Based on the above justifications, this study is applied to Arab oil exporters belonging to the principal countries producing and exporting oil worldwide.

The sample of this study is based on two aspects: the region of study and type of oil and gas corporations. In respect of the study area, this study comprises Arab

petroleum exporting countries because few studies have been conducted in this region; despite, as previously indicated the importance of the region in terms of the oil industry. Selection of these countries is based on membership of the OAPEC. Countries belonging to the OAPEC are Libya, Saudi Arabia, the UAE, Qatar, Kuwait, Egypt, Iraq, Syria, Tunisia, Bahrain and Algeria. Selection includes all countries which are members in the OAPEC, excluding Iraq and Syria because of lack of information on websites on local companies for Iraqi firms and the current security situation in Syria. Thus, the number of countries in this study is 9 countries exporting oil and gas.

In relation to the type of companies in the sample of this study, the study focuses on the national oil and gas corporations that belong to the Arab petroleum exporting countries and, additionally, international oil and gas corporations operating in Arab petroleum exporting countries. The surveyed international corporations in this research study are from America, Britain, Russia, Canada, Italy, France, Germany, Japan and Australia. Selection of these countries is based on their degree of investment in Arab countries. According to the magazine *Investment Guarantee*, the largest foreign investments flowing into the Arab region during the period from 2005 to 2011 is from these countries (Safi 2011). In addition, excluding Australia, the countries represent Group of Eight which gives this study an extra dimension in the comparison between OAPEC and the Group of Eight. Regarding the selection of Australia, this is due to it being the country of study for the researcher.

The researcher obtained a list of the names of all national and international companies operating in the oil sector from the oil ministry of each country of the studied countries. It is worth noting that most of the surveyed local firms in this study meet the following criteria: (1) they have published an annual report to the public for five years; and (2) the annual report is published in English and Arabic language. In relation to international oil and gas corporations, the study sample is based on the following: (1) any international company in oil and gas included in this study should have operations related to the oil and gas industry in one of the Arab petroleum exporting countries; and (2) the company has published annual reports on

the website in English. Moreover, regarding the study period, this study addresses the period from 2005 to 2010 in order to give a longitudinal focus on the study. It excludes annual reports for 2011 because of the events of the Arab Spring that involved some Arab countries. Consequently, the researcher chose to exclude any results of the Arab Spring as it may affect the results of this study.

4.12 Summary

In this chapter, a research methodology and methods available in the literature to conduct such a study was described. This research study utilises content analysis and an environmental disclosure index to analyse data. Content analysis is used to present a description of the environmental disclosure practices in both international oil corporations and national oil corporations during 2008, 2009, and 2010. Moreover, a review of the literature has provided an overview of content analysis and definitions in the current literature, as well as practical steps to implement content analysis. Methods of content analysis used are quantitative methods alongside interview analysis as a qualitative method of data interpretation.

Content analysis of annual reports for the period 2008 to 2010 inclusive was undertaken. Annual reports were selected as the disclosure medium to provide consistency and comparability with previous research (Beck et al. 2010; Guthrie & Abeysekera 2006; Thayer et al. 2007). Furthermore, the annual report is considered an important source of environmental information (Da Silva Monteiro & Aibar-Guzmán 2010; Lynch 2007). Words were used as the recording unit in the content analysis process to determine and maintain meaning, as suggested by Vourvachis (2007). Words were used as the unit of measurement as it has been argued that words provide better detail when measuring the volume of disclosure (Hossain et al. 2005; Krippendorff 2004).

Environmental disclosure index has been used as an approach to measure dependent variables, culture, political and legal systems, and level of economic development. Of particular importance was the review of disclosure indices and content analysis. For the purposes of this study, both techniques are applied to measure the extent of

environmental disclosure practices in order to answer the research question and rectify a gap in the existing literature related to these approaches. Concerning choice of method of disclosure, this chapter provides details of annual reports as methods of disclosure in corporations whether in international or national oil corporations. Moreover, the type of data used for analysis is all environmental information in all annual reports of a sample of research according to 16 items of environmental disclosure practices. The sample in this research study includes all international oil and gas corporations which have operations in Arab petroleum exporting countries, as well as national oil and gas corporations in those countries.

5.0 CHAPTER FIVE: RESULTS OF QUANTITY AND QUALITY OF ENVIRONMENTAL DISCLOSURE PRACTICES

Chapter four explained the research methodology used to assess the environmental disclosure practices of oil and gas companies, whether national or international, operating in the OAPEC. This chapter uses empirical data to provide insights into environmental disclosure practices in petroleum organisations. Therefore, the analysis in this chapter focuses on annual reports from 149 companies (national and international) operating in the oil sector in nine Arab countries. The discussion in this chapter draws attention to differences in environmental disclosure practices between national firms of Arab oil countries and international firms of eight group countries, including Australia, operating in Arab oil countries. Moreover, this chapter is intended to give an overview of the quantity and quality of environmental information in annual reports, as well as the importance of the country of origin as a determinant of the differences in these practices using independent t-test, whereas chapter 6 focuses on underlying factors for differences in environmental disclosure between national and international oil and gas companies through analysing influential national factors in environmental disclosure practices.

5.1 Descriptive Analysis

This section provides a brief overview of some of the general facts and characteristics that were identified in respect to this study. Discussion concentrates on two aspects—response rates and breakdown of countries. Based on the details outlined in the following two sections it is worth noting that most of the firms surveyed are representative of the total oil industry in each country.

5.1.1 Response Rate

This study sought to examine the annual reports for 2008, 2009 and 2010 of 295 oil and gas companies. Tables 5-1 and 5-2 illustrate the number of target companies operating in Arab Petroleum Exporting Countries. The tables also present the number of companies that meet the conditions of a sample in this study which was described

in chapter four. Table 5-1 focuses on the national companies operating in Arab petroleum exporting countries. It can be noted that Algeria had the lowest rate (43%) of the number of companies that met the requirements of study, where the number of companies targeted was 7 companies, and only three companies provide annual reports according to the conditions of this study. In contrast, the UAE had the highest percentage (75%) of companies that met the conditions of the study. It is interesting to point out that although the UAE has the highest percentage of actual firms in the sample in this study; Saudi Arabia and UAE have the largest number. The actual number is 9 for both Saudi Arabia companies and UAE companies.

Table 5-1: Response Rate of Countries of National Oil and Gas Corporations

Country	Number of target companies	Number of selected companies	Response rate- percentage (%)
Algeria	7	3	43%
Bahrain	9	4	44%
Egypt	8	4	50%
Kuwait	12	6	50%
Libya	9	5	55%
Qatar	11	8	73%
Saudi	16	9	56%
Tunisia	6	3	50%
UAE	12	9	75%
Total	90	51	56%

Table 5-2 shows the number of international oil and gas companies operating in Arab petroleum exporting countries which are target companies in this study; as well as the number of companies that met the conditions of the sample. In addition, the last column of the table offers the percentage of firms in the sample of the actual study. As mentioned in chapter four, the list of names of international oil and gas corporations was obtained from the oil ministry in each country of the studied countries and with respect to their annual reports obtained from the OSIRIS

database[5]. It should be noted that Italian oil and gas companies registered in the OSIRIS database account for only 10 companies[6]. Therefore, all these companies were target firms in the study. It is interesting to note from Table 5-2 that the United States had a higher percentage (92%) of firms that met the conditions of the sample. In addition, the largest number of companies in the actual sample is US companies, numbering 23; whereas German firms have the lowest rate in the study sample at only 20% and lowest number of companies in the sample of international oil and gas companies at 4 companies.

Table 5-2: Response Rate of Countries of International Oil and Gas Corporations

Country	Number of target companies	The number of selected companies	Response Rate- Percentage (%)
Australia	25	10	40
Canada	25	10	40
France	20	8	40
Germany	20	4	20
Italy	20	5	25
Japan	25	10	40
Russia	20	8	40
UK	25	20	80
USA	25	23	92
Total	205	98	47.8

In general, to derive a final score for percentage of the sample study, it can be said that the percentage of companies that meet the conditions in this study for both national and international companies were 56% and 47.8% respectively. In comparison with other studies which have used annual reports, it is of paramount importance to point out that the response rate of this study is proportional to the response rates in other studies. Momin (2006, p. 199), for example, yielded a

[5]OSIRIS is a fully integrated public company database and analytical information solution produced by Bureau van Dijk Electronic Publishing, SA (BvD). Working with specialist data providers from around the world, BvD makes OSIRIS the most accurate, comprehensive, and user-friendly information tool available for the world's public companies.

[6] 20 companies is the target of study. But the researcher has found only 10 in OSIRIS database and only 5 of the 10 have operations in Arab region.

response rate of 27% where his study concentrated on one nation. Moreover, although the proportion of the sample in his study was 68%, Cowan (2007) considered that a sample size of twenty-five was appropriate for an Australian study and Cowan (2007, p. 105) states that this is acceptable 'when considered in comparison to other published Australian studies'. Zunker (2011, p. 116) examined the annual reports of 649 companies out of 970 targeted companies, where the percentage of the sample was 68%.

5.1.2 General Descriptive Statistics of Environmental Disclosures

Through a review of annual reports of organisations surveyed in this research study, it can be noted that the number of companies that disclosed at least one item of environmental information in annual reports had increased during the study period 2008, 2009 and 2010—whether national firms or international corporations. Tables 5-3 and 5-4 summarise companies surveyed and corporations that disclosed at least one item in their annual report. Regarding national companies, it can be argued that the total number of companies had increased from 47 firms in 2008, to 51 companies in 2010. Therefore, it can said that the percentage of national oil and gas firms that disclosed at least one item has experienced growth over three years—from 92.15% in 2008 to100% in 2010. In contrast, all international companies disclosed at least one item in their annual reports over the study period.

Table 5-3: Number and Percentage of NOGCs with Environmental Disclosures

	2008	2009	2010
Total companies	51	51	51
Disclosers	47	50	51
Percent (%)	92.15%	98.03%	100%

Table 5-4: Number and Percentage of IOGCs with Environmental Disclosures

	2008	2009	2010
Total companies	98	98	98
Disclosers	98	98	98
Percent (%)	100%	100%	100%

5.2 Countries Reporting Environmental Disclosure Practices

Through a review of corporations and environmental disclosure items referred to in Table 4-2, the number of companies—whether national or international companies—that have provided at least one item of environmental disclosure (as shown in tables 5-5 and 5-6) can be extracted. Both tables contain a list of countries and the number of companies surveyed in each country, as well as the number of companies which provided at least one item for the years 2008, 2009 and 2010, together with the percentage for each country. Table 5-5 focuses on national oil companies of Arab petroleum exporting countries. Overall, it is interesting to point out that the number of companies that provided at least one item has increased between 2008 and 2010 from 47 in 2008 to 51 in 2010.

In terms of raw numbers, in 2008 companies in Algeria and Tunisia have fewer numbers of companies that included items of disclosure in their annual reports. However, although these two countries exhibited the lowest number of firms offering items of disclosure, Libya has the lowest percentage of corporations providing items of disclosure in annual reports at 60% in 2009, although all Libyan and Tunisian firms have provided at least one item of environmental disclosure in their annual reports, and two of three Algerian companies have offered at least one of item in annual reports. In contrast, Bahrain, Egypt, Kuwait, Qatar, Saudi Arabia and the UAE have the highest percentage of number of companies that provided at least one item in their annual reports—100% in 2008 and 2009. However, it can be said that during 2010, all corporations from all Arab oil countries have provided at least one item of environmental disclosure (as shown in Table 4-2) in their annual reports. On the other hand, Table 5-6 shows the number and percentage of international corporations operating in the Arab region and belonging to the countries of eight group—as well as Australian firms—which provided at least one item of environmental disclosure in their annual reports. In view of the above, it can be said that environmental disclosure practices in countries surveyed which provided at least one item in their annual reports regarding the percentage of national and international companies is similar, especially in 2010.

Table 5-5: National Breakdown of EDPs for NOGCs

Country	No firms surveyed	No Firms Reporting at least One EDPs 2008	(%) 2008	No Firms Reporting at least One EDPs 2009	(%) 2009	No Firms Reporting at least One EDPs 2010	(%) 2010
Algeria	3	2	66%	2	66%	3	100%
Bahrain	4	4	100%	4	100%	4	100%
Egypt	4	4	100%	4	100%	4	100%
Kuwait	6	6	100%	6	100%	6	100%
Libya	5	3	60%	5	100%	5	100%
Qatar	8	8	100%	8	100%	8	100%
Saudi	9	9	100%	9	100%	9	100%
Tunisia	3	2	66%	3	100%	3	100%
UAE	9	9	100%	9	100%	9	100%
Total	51	47	92%	50	98%	51	100%

Table 5-6: National Breakdown of EDPs for IOGCs

Country	No Firms surveyed	No Firms Reporting at least One EDPs 2008	(%) 2008	No Firms Reporting at least One EDPs 2009	(%) 2009	No Firms Reporting at least One EDPs 2010	(%) 2010
Australia	10	10	100%	10	100%	10	100%
Canada	10	10	100%	10	100%	10	100%
France	8	8	87.50%	8	100%	8	100%
Germany	4	4	75%	4	100%	4	100%
Italy	5	5	80%	4	80%	5	100%
Japan	10	10	80%	10	90%	10	100%
Russia	8	8	87.50%	8	87.50%	8	100%
UK	20	20	100%	20	100%	20	100%
USA	23	23	100%	23	100%	23	100%
Total	98	98	90.82%	98	93.88%	98	100%

5.3 Quantity and Quality of Environmental Disclosure

With respect to the quantity and quality of disclosure made by companies in their annual reports, it can be concluded that the amount of disclosure has generally increased during the study period. As mentioned in chapter 4, word count is used to evaluate the quantity of corporate environmental disclosures; whereas environmental disclosure index is used to measure the quality of disclosure.

5.3.1 The Quantity of Corporate Environmental Disclosures

In this section of this chapter, Tables 5-7 and 5-8 show descriptive statistics of the quantity of environmental disclosure using word counts for national and international corporations respectively. In respect to national oil and gas companies during the study period, the level of environmental disclosures increased noticeably from 214 words in 2008 to 243 words in 2010, where the average quantity of environmental disclosure had increased almost 13.5% during the period. In contrast, the level of environmental disclosure in international companies' annual reports had increased from 497 in 2008 to 598 words in 2010; whereas the mean was 351.72 in 2008 and increased to 387.56 in 2010.

Table 5-7: Descriptive Statistics of Environmental Disclosure Using Word Counts for NOGCs

Year	Minimum	Maximum	Mean	Standard Deviation
2008	44	214	128.24	48.269
2009	43	222	136.22	48.225
2010	42	243	142.92	50.499

Table5-8: Descriptive Statistics of Environmental Disclosure Using Word Counts for IOGCs

Year	Minimum	Maximum	Mean	Standard Deviation
2008	225	497	351.72	67.899
2009	263	533	374.23	74.825
2010	227	598	387.56	71.820

On the other hand, in order to establish the differences in disclosure between countries, there is another important point when examining disclosure which is the amount of disclosure in annual reports of organisations for each country. This study

was based on word count to examine environmental disclosure contained in the annual reports of oil and gas corporations and measure the degree of disclosure. The following Tables 5-9 and 5-10 summarise the information on quantity of disclosure using word counts for both national oil and gas corporations in Arab oil countries and international oil and gas corporations in developed countries respectively.

From Table 5-9, it can be concluded that national oil and gas corporations in Arab petroleum exporting countries presented environmental disclosure information in their annual reports. Disclosure varies from year to year and from one country to another. Generally, the UAE and Saudi Arabia have the highest rates of disclosure in annual reports over the three years. UAE companies recorded 1,446, 1,645 and 1,719 words in 2008, 2009 and 2010 respectively, while Saudi Arabia firms recorded 1,411, 1,567 and 1,689 words in the same years respectively. This is consistent with the study of Al-Janadi et al. (2011) that concluded that the level of disclosure in UAE companies is greater than Saudi Arabia companies. In contrast, the lowest number of words recorded in the annual reports is 72, 112 and 129 for Algerian, Tunisian and Libyan companies respectively in 2008. Interestingly, Algerian companies recorded the lowest number of words compared with companies in other countries in 2009 and 2010 as well; while Libyan companies have witnessed a marked increase in the number of words in 2009 and 2010 compared to 2008. Libyan corporate results are consistent with the results of Nasir's studies (2004, 2011) which concluded that Libyan firms did not present any information related to environment in their annual reports between 1998 and 2001; whereas the result of study conducted in 2011 that included years after 2001 until 2007, indicated that environmental disclosure had developed although the 18 largest industrial companies disclosed only the minimum and type (bad news) of disclosure that are requested by the Industrial and Mineralisation Secretary. In addition, Al-Drugi and Abdo (2012) reported that environmental information in Libya steadily increased on average throughout the period of study between 2002 and 2009. As for the Tunisian companies, the level of disclosure is similar to the level of disclosure in the study of Belhaj and Damak-Ayadi (2011) which showed that the highest level of disclosure in the 31 Tunisian companies is 23.

Moreover, it can also be noted from Table 5-9 regarding the average word count for each company that UAE firms have the highest average over the three years (2008, 2009 and 2010), followed by Saudi Arabia companies. Overall, the average of words per company ranges between 100 and 200 words for most companies, except for companies in Algeria, Bahrain, Libya and Tunisia, and the lowest average was in Algerian companies during the three years. In sum, companies in UAE and Saudi Arabia, followed by Qatari firms, have the highest percentage of disclosure in annual reports. In contrast, the percentage of disclosure did not exceed 5% of the total number of words disclosed in annual reports of firms from Algerian, Bahraini and Libyan and Tunisian.

Table 5-9: Quantity of Environmental Disclosure Using Word Count in NOGCs

Country	Years	No. of Companies	Word Count	Average of word count for each firm*	Percentage of Word Count (%) **
Algeria	2008	2	72	36.00	1.25
	2009	2	81	40.50	2.25
	2010	3	136	45.33	1.96
Bahrain	2008	4	171	42.75	2.97
	2009	4	216	54.00	3.33
	2010	4	226	56.50	3.26
Egypt	2008	4	445	111.25	7.73
	2009	4	506	126.50	7.81
	2010	4	536	134.00	7.72
Kuwait	2008	6	801	133.50	13.91
	2009	6	841	140.67	12.97
	2010	6	910	150.17	13.11
Libya	2008	3	129	43.00	2.24
	2009	5	235	47.00	3.62
	2010	5	276	55.20	3.98
Qatar	2008	8	1172	146.50	20.35
	2009	8	1221	152.63	18.83
	2010	8	1268	158.50	18.26
Saudi	2008	9	1411	176.78	24.50
	2009	9	1567	182.78	24.17
	2010	9	1689	187.67	24.33
Tunisia	2008	2	112	56.00	1.94
	2009	3	171	57.00	2.64
	2010	3	183	61.00	2.64
UAE	2008	9	1446	161.33	25.11
	2009	9	1645	174.11	25.37
	2010	9	1719	191.00	24.76

* Average of word count for each firm equals words count divided by number of companies for each year.
** Percentage of word count equals words count divided by total words for each year

Attention is now directed to Table 5-10 which is intended to give an overview of quantity of disclosure word count in international oil and gas corporations operating in Arab petroleum exporting countries. Overall, the disclosure of environmental information in annual reports has witnessed an increase in terms of word count over three years. Interestingly, attention is directed to a discrepancy in the number of words contained in the annual reports of firms from USA and UK which recorded the highest level of word count; and companies from Germany and Russian which recorded the lowest level of words count. USA companies recorded 9,154, 9,682 and 9,923 words over the three years 2008, 2009 and 2010 respectively. In contrast, the annual reports of German companies contain 1,110, 1,137 and 1,244 during the same period. This variation is due to the number of companies that have been tested in both the countries, where there are 23 from the USA operating in Arab petroleum exporting countries and 4 firms are from Germany. To determine whether substantial differences persist, it can be assessed by the average disclosed for each company. From table 5-10, it can be seen that UK companies have the highest average disclosure levels compared with USA companies—which corresponds to the findings of Holland and Boon Foo (2003) who concluded that disclosure in the UK was higher than in the USA during 2000. However, reference to the variation in the size of the sample which may justify the variation in the total of word count disclosed in the annual report shows that Italian companies recorded the lowest average in disclosure. In general, the average number of words in environmental disclosure has witnessed a gradual increase during the years of the study, but the highest increase of average quantity of environmental disclosure over the study period has been recorded by Australian corporations.

Table 5-10: Quantity of Environmental Disclosure Using Word Count in IOGCs

Country	Years	No. Companies	Word Count	Average of word at each firm*	Percentage of Word Count (%) **
Australia	2008	10	2821	282.10	8.19
	2009	10	3258	325.80	8.88
	2010	10	3620	362.00	9.53
Canada	2008	10	3635	363.50	10.55
	2009	10	3976	397.60	10.84
	2010	10	3840	384.00	11.14
France	2008	8	2402	300.25	6.97
	2009	8	2481	310.13	6.76
	2010	8	2592	324.00	7.52
Germany	2008	4	1110	277.40	3.22
	2009	4	1137	284.25	3.10
	2010	4	1244	311.00	3.61
Italy	2008	5	1372	274.40	3.98
	2009	5	1402	280.40	3.82
	2010	5	1525	305.00	4.42
Japan	2008	10	3029	302.90	8.79
	2009	10	3284	328.40	8.95
	2010	10	3560	356.00	10.33
Russia	2008	8	2232	379.00	6.48
	2009	8	2291	286.38	6.25
	2010	8	2312	289.00	6.71
UK	2008	20	8710	435.50	25.27
	2009	20	9165	458.25	24.99
	2010	20	9360	468.00	27.16
USA	2008	23	9154	398.00	26.56
	2009	23	9682	420.00	26.40
	2010	23	9923	431.44	28.79

* Average of word at each firm equals words count divided by number of companies for each year.
** Percentage of word count equals words count divided by total words for each year

5.3.2 The Quality of Corporate Environmental Disclosures

Table 5-11 shows that the quality of disclosure has increased over the three years of study in regard to national firms. The average was 20.760 in 2008 and it increased in 2010 to 24.180 in national corporations. In relation to international companies, the increase in the average quality of disclosure over the study period is similar to the increase observed in national firms. However, in spite of the modest increase, it is

higher than for national companies. Table 5-12 shows that the average disclosure in international corporations is 28.500 in 2008 and 30.910 in 2010.

Table 5-11: Descriptive Statistics of EDI for NOGCs

Year	Minimum	Maximum	Mean	Standard Deviation
2008	11	33	20.760	5.156
2009	12	35	22.450	5.401
2010	12	35	24.180	5.592

Table 5-12: Descriptive Statistics of EDI for IOGCs

Year	Minimum	Maximum	Mean	Standard Deviation
2008	22	41	28.500	3.990
2009	22	43	29.940	4.245
2010	24	42	30.910	4.339

Tables 5-13 and 5-14 summarise the quality of environmental disclosure using environmental disclosure index for international oil and gas corporations and national oil and gas corporations. Measuring the quality of environmental disclosure for each country in this study relied on the following. If the disclosure in the annual report disclosure is monetary, the item is scored as 3, but if the disclosure is quantitative, the score of disclosure is scored at 2. Finally, the score is 1 if the case of disclosure of information is qualitative. The final score for each country is a collection of scores of all companies surveyed from that country. Regarding national oil and gas corporations, as can be seem from Table 5-13, the highest score was 254 for Saudi Arabia in 2010; whereas the lowest score is 25 for Algerian firms in 2008 (excluding companies from Algeria that did not disclosure any item in their annual reports in 2008). In contrast, as shown in Table 5-14, USA firms have the highest score over the three years which are 729, 747 and 753 respectively. The lowest score of 105 was recorded in German firms in 2008. Therefore, this result is consistent with Beck et al. (2010), Hibbitt and Collison (2004), and Saida (2009) who concluded that disclosure score is lower in German firms than British firms. Overall, in spite of the quality of environmental disclosure for international oil and gas corporations it is higher than national oil and gas corporations, but the quality of environmental disclosure has increased for both over the three years. From table 5-

13, it can be seen that the quality of environmental disclosure has increased for all firms between 2008 and 2010.

Table 5-13: Quality of Disclosure by EDI in NOGCs

Country	Years	No. of Companies	EDI	Average of EDI at each firm	EDI (%)*
Algeria	2008	2	25	12.50	2.62
	2009	2	37	18.50	3.44
	2010	3	58	19.33	4.94
Bahrain	2008	4	38	9.50	3.98
	2009	4	41	10.25	3.81
	2010	4	45	11.25	3.83
Egypt	2008	4	77	19.25	8.06
	2009	4	83	20.75	7.72
	2010	4	88	22.00	7.50
Kuwait	2008	6	128	21.33	13.40
	2009	6	136	22.67	12.65
	2010	6	146	24.33	12.44
Libya	2008	3	42	14.00	4.40
	2009	5	71	14.20	6.60
	2010	5	75	15.00	6.39
Qatar	2008	8	187	23.38	19.58
	2009	8	200	25.00	18.60
	2010	8	214	26.75	18.23
Saudi	2008	9	214	23.78	22.41
	2009	9	236	26.22	21.95
	2010	9	254	28.22	21.64
Tunisia	2008	2	32	16.00	3.35
	2009	3	51	17.00	4.74
	2010	3	53	17.67	4.51
UAE	2008	9	212	23.56	22.20
	2009	9	220	24.44	20.47
	2010	9	241	26.78	20.53

* The value of the quality of disclosure for companies in each of the years divided by the total of a quality of disclosure for all companies in that year.

Table 5-14: Quality of Disclosure by EDI in IOGCs

Country	Years	No. of Companies	EDI	Average of EDI at each firm	EDI (%)*
Australia	2008	10	269	26.90	9.63
	2009	10	319	31.90	10.87
	2010	10	305	30.50	10.07
Canada	2008	10	276	27.60	9.88
	2009	10	291	29.10	9.92
	2010	10	306	30.60	10.10
France	2008	8	213	26.63	7.63
	2009	8	225	28.13	7.67
	2010	8	225	28.13	7.43
Germany	2008	4	105	26.25	3.76
	2009	4	112	28.00	3.82
	2010	4	116	29.00	3.83
Italy	2008	5	129	28.50	4.62
	2009	5	139	27.80	4.74
	2010	5	148	29.60	4.89
Japan	2008	10	264	26.40	9.45
	2009	10	273	27.30	9.30
	2010	10	318	31.80	10.50
Russia	2008	8	211	26.38	7.55
	2009	8	223	27.88	7.60
	2010	8	230	28.75	7.59
UK	2008	20	597	29.85	21.37
	2009	20	605	30.25	20.62
	2010	20	628	31.40	20.73
USA	2008	23	729	31.70	26.10
	2009	23	747	32.48	25.46
	2010	23	753	32.74	24.86

* The value of the quality of disclosure for companies in each of the years divided by the total of a quality of disclosure for all companies in that year.

5.4 Items of Environmental Disclosure in Oil and Gas Companies

Previous research that addressed environmental disclosure sought to examine many items; however, this study relied on previous studies in determining the items of disclosure and adopted the items described in Table 4-2 in chapter four, which give a

broader dimension of environmental disclosure in companies. In particular, environmentally sensitive companies include companies operating in the petroleum industry. Previous studies have shown that items such as environmental policy, environmental management and environmental spending are some of the more frequent disclosure items in annual reports (Suttipun & Stanton 2012b). Table 5-15 illustrates the disclosure rate for each item of disclosure. It can be noted that most companies assigned great importance to the education and training item where it scored the highest disclosure over the three years, followed by environmental management and risk management. On the other hand, the items of environmental cost accounting and environmental awards were not disclosed in the annual reports for all companies covered in this study. This study corresponds with the study by Suttipun (2012) who concluded that items of environmental cost accounting were not disclosed by the sampled companies.

Table 5-15 displays the important items disclosed in annual reports of oil and gas corporations. It is worth noting that most firms paid attention to some of the items, but not others. From Table 5-15 it can also be seen that education and training, environmental management and spill were disclosed in the annual reports of companies more than other items over the three year period. Regarding 2010, spill was reported in 5,294 words in annual reports of companies included in the study sample; followed by education and training and environmental management with 4686 and 4,622 words respectively. In 2009 and 2008, the largest amount of disclosed words referred to education and training, environmental management and risk management at 5,249, 5,136, and 4,681 words respectively in 2008; and 5,324, 4,651 and 4,265 words respectively in 2009. It is relevant to point out that the number of times the item spill was disclosed has increased significantly during 2010. This increase is due to the spill incident which occurred from oil platforms owned by BP in the Gulf of Mexico. On the other hand, items such as awards and environmental cost accounting were not disclosed in the annual reports by any corporation over the period study.

Table 5-15: Items of Environmental Disclosures in Annual Reports Using Word Count

Items	2008	2009	2010	(%)2008	(%)2009	(%)2010
Education and Training	5249	5324	4686	13.05	12.34	10.43
Environmental Management	5136	4651	4622	12.77	10.78	10.29
Risk Management	4681	4265	4258	11.64	9.88	9.48
Environmental Accidents	33461	3369	4329	8.60	7.81	9.64
Wastes	3462	4077	3868	8.61	9.45	8.61
Environmental Policy	3247	3677	4137	8.07	8.52	9.21
Litigation about Environmental Issues	2909	3141	3135	7.23	7.28	6.98
Land Rehabilitation and Remediation	2747	2730	2534	6.83	6.33	5.64
Sustainable Development Reporting	2324	2753	2508	5.78	6.38	5.58
Air Emission	2186	2419	2586	5.43	5.60	5.76
Spill	1730	3561	5294	4.30	8.25	11.79
Environmental Auditing	1271	1350	1067	3.16	3.13	2.38
Water Effluent	1108	1134	1151	2.75	2.68	2.56
Environmental Spending and Activities	713	708	744	1.77	1.64	1.66
Awards	0	0	0	0	0	0
Environmental Cost Accounting	0	0	0	0	0	0
Total	40224	43159	44919			

5.5 Quantity vs. Quality of Environmental Disclosure

To derive a final score for each country, both Tables 5-16 and 5-17 display comparison of environmental disclosure in accordance with the quantity and quality of disclosure in order to show the complete picture. Most previous studies in the literature concerning the disclosure of environmental accounting that dealt with the countries in this study did not include a comparison between the amount of disclosure and quality of disclosure. This study is one of the first studies that make this comparison to fill gaps in previous studies. Table 5-16 focuses on Arab petroleum exporting countries, while Table 5-17 focuses on the countries of international corporations.

Table 5-16: EDI and Word Counts for Countries of NOGCs

Country	2008		2009		2010	
	Word Count	EDI	Word Count	EDI	Word Count	EDI
Algeria	182	44	218	51	221	58
Bahrain	171	38	216	41	226	45
Egypt	445	77	506	83	536	88
Kuwait	914	142	967	153	1046	164
Libya	360	46	393	87	421	90
Qatar	1172	187	1221	200	1268	214
Saudi	1591	214	1645	236	1689	254
Tunisia	155	32	171	57	173	60
UAE	1435	199	1536	211	1719	230

Table 5-17: EDI and Word Counts for Countries of IOGCs

Country	2008		2009		2010	
	Word Count	EDI	Word Count	EDI	Word Count	EDI
Australia	2821	269	3258	319	3620	305
Canada	3635	276	3976	291	3840	306
France	2402	213	2481	225	2592	225
Germany	1110	105	1137	112	1244	116
Italy	1372	129	1402	139	1525	148
Japan	3029	264	3284	273	2560	318
Russia	2232	211	2291	223	2312	230
UK	8710	597	9165	605	9360	628
USA	9154	729	9682	747	9923	753

5.6 Independent T-Test for Difference in Environmental Disclosure

This section provides details of independent t-test in order to measure differences in environmental disclosure measured using word count and environmental disclosure index. Independent t-test explains variations in the means of environmental disclosure between national and international corporations, as well as differences between each them according to region of sample. Williams (1999) said that independent t-tests are used to establish if the unrelated samples from each nation come from the same population. Therefore, the first part shows comparisons between national and international firms in terms of extent of differences in disclosure. The second and third parts provide independent t-test for international and national enterprises in terms of differences according to country of sample.

5.6.1 Independent T-Test between International Corporations for Origin Effects

The results from Table 5-19 generally show independent t-test for quantity and quality of environmental disclosure over three years regarding international oil and gas corporations. Irrespective of which measurement unit is applied, that is, whether word count or environmental disclosure index was utilised, the environmental disclosure practices of companies from a number of different countries are significantly different in terms of amount of information provided. For example, USA, French, German, Italian and Russian enterprises differed significantly in terms of the amount of information provided and in terms of quantity and quality disclosure over three years. Other significant differences are noted for both quantity and quality between UK companies and those in Australia, Canada, France, Italy, Japan and Russia in 2008. For example, the quantity of environmental disclosure was significantly different between UK and Australia, Canada, Italy, Japan and Russia using word count.

Additional significant differences across international oil and gas corporations can be noted regarding quantity of environmental disclosure. Such variations, however, are not consistent across all three years of study. For example, the amount of disclosure

on environmental disclosure issues is significantly different between Australian and Japanese firms in 2008, which is in contrast to 2009 and 2010 where no significant difference emerged. Such statistical differences though are not found in measurements in 2008 and 2009 between firms in Russia and those in Italy and Germany. Other cases in which there are significant differences in the amount of environmental information provided but limited to one year are Australia and France (2010); Australia and Italy (2008); Australia and Russia (2008); France and Germany (2010) and France and Japan (2008). In contrast, no significant difference is found between firms in Germany and Italy over the three years.

Results of independent t-test using quality of environmental disclosure produced some interesting contrasts during the three years of study. As discussed above, there are significant differences in the amount of disclosure provided by firms from different countries irrespective of the unit of analysis used. Statistically significant differences common when measuring the dependent variable using the environmental disclosure index were found between USA companies and Japanese companies. These differences are also noted between USA companies and Australian companies. In respect to measurement using the environmental disclosure index, significant differences were also noted in regard to USA companies and their counterparts in Australia, Canada, France, Germany, Italy, Japan and Russia. It is interesting to point out that variation between USA firms and those in the UK is significant in respect to quantity disclosure over three years—contrary to quality of environmental disclosure.

5.6.2 Independent T-Test between National Corporations for Origin Effects

From the results of the t-test for national companies in the Arab region in Table 5-20, it can extract important contrasts between Arab countries, regardless of the quantity or the quality of environmental disclosure. Libyan companies vary in terms of quantity and quality of environmental disclosure with companies in Egypt, Kuwait, Qatar, Saudi Arabia and the UAE at 0.01, 0.05 and 0.10 during the three years 2008, 2009 and 2010. With respect to the quality of environmental disclosure, it can be said

that an important difference is in the contrast between most businesses of all countries involved. For example, UAE companies differ with companies in the rest of the areas in all the years where it is clear that corporate disclosure practices in the UAE are higher than in the rest of the companies. Also, Kuwaiti companies compared with companies in Algeria, Bahrain, Libya, Saudi Arabia, Tunisia and the UAE are different at three levels (0.01, 0.05 and 0.10) in the three years. On the other hand, with regard to the quality of disclosure one can say there are marked differences between companies operating in the Arab countries. During the three years, UAE companies vary with companies in Tunisia, Kuwait, Egypt, Bahrain and Algeria. On the other hand, the difference in the disclosure does not vary between Algerian and Egyptian companies in terms of the quality of disclosure during the years of the study. The same difference occurs between UAE companies.

Table 5-18: **Independent T-Test between IOGCs for Origin Effects**

			Australia	Canada	France	Germany	Italy	Japan	Russia	UK
Canada	2008	QTED	0.000							
		QLED	0.442							
	2009	QTED	0.006							
		QLED	0.034							
	2010	QTED	0.349							
		QLED	0.961							
France	2008	QTED	0.028	0.000						
		QLED	0.789	0.354						
	2009	QTED	0.007	0.003						
		QLED	0.003	0.377						
	2010	QTED	0.116	0.000						
		QLED	0.250	0.147						
Germany	2008	QTED	0.481	0.000	0.010					
		QLED	0.619	0.316	0.805					
	2009	QTED	0.000	0.009	0.000					
		QLED	0.022	0.459	0.895					
	2010	QTED	0.172	0.000	0.216					
		QLED	0.389	0.448	0.405					
Italy	2008	QTED	0.422	0.000	0.010	0.723				
		QLED	0.388	0.172	0.574	0.812				
	2009	QTED	0.000	0.003	0.001	0.625				
		QLED	0.015	0.383	0.775	0.891				
	2010	QTED	0.090	0.000	0.033	0.536				
		QLED	0.718	0.615	0.327	0.652				
Japan	2008	QTED	0.034	0.000	0.784	0.007	0.026			
		QLED	0.605	0.227	0.839	0.916	0.660			
	2009	QTED	0.792	0.010	0.068	0.008	0.003			
		QLED	0.004	0.205	0.536	0.703	0.776			
	2010	QTED	0.797	0.027	0.014	0.021	0.001			
		QLED	0.488	0.442	0.011	0.077	0.157			
Russia	2008	QTED	0.695	0.000	0.009	0.850	0.596	0.020		
		QLED	0.652	0.303	0.851	0.943	0.729	0.984		
	2009	QTED	0.000	0.001	0.001	0.789	0.467	0.001		
		QLED	0.006	0.339	0.815	0.930	0.959	0.696		
	2010	QTED	0.008	0.000	0.000	0.019	0.017	0.000		
		QLED	0.402	0.286	0.657	0.873	0.597	0.038		
UK	2008	QTED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
		QLED	0.037	0.050	0.043	0.101	0.045	0.018	0.035	
	2009	QTED	0.000	0.013	0.000	0.000	0.000	0.000	0.000	
		QLED	0.281	0.448	0.189	0.078	0.238	0.069	0.158	
	2010	QTED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
		QLED	0.597	0.604	0.040	0.021	0.342	0.776	0.097	
USA	2008	QTED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002
		QLED	0.000	0.002	0.008	0.038	0.014	0.000	0.006	0.182
	2009	QTED	0.000	0.194	0.000	0.000	0.000	0.000	0.000	0.007
		QLED	0.696	0.027	0.002	0.004	0.012	0.012	0.004	0.158
	2010	QTED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012
		QLED	0.300	0.230	0.005	0.007	0.071	0.535	0.019	0.376

Table 5-19: Independent T-Test between NOGCs for Origin Effects

			Algeria	Bahrain	Egypt	Libya	Kuwait	Qatar	Saudi	Tunisia
Bahrain	2008	QTED	0.041							
		QLED	0.288							
	2009	QTED	0.063							
		QLED	0.383							
	2010	QTED	0.028							
		QLED	0.458							
Egypt	2008	QTED	0.001	0.034						
		QLED	0.183	0.939						
	2009	QTED	0.020	0.022						
		QLED	0.320	0.946						
	2010	QTED	0.000	0.011						
		QLED	0.480	0.854						
Libya	2008	QTED	0.950	0.079	0.001					
		QLED	0.590	0.011	0.010					
	2009	QTED	0.611	0.033	0.000					
		QLED	0.250	0.042	0.015					
	2010	QTED	0.839	0.073	0.001					
		QLED	0.160	0.010	0.005					
Kuwait	2008	QTED	0.000	0.003	0.036	0.000				
		QLED	0.050	0.640	0.648	0.001				
	2009	QTED	0.000	0.036	0.101	0.000				
		QLED	0.093	0.622	0.655	0.001				
	2010	QTED	0.000	0.050	0.188	0.000				
		QLED	0.197	0.729	0.507	0.000				
Qatar	2008	QTED	0.000	0.001	0.002	0.000	0.052			
		QLED	0.039	0.184	0.113	0.000	0.128			
	2009	QTED	0.000	0.007	0.002	0.000	0.102			
		QLED	0.026	0.217	0.152	0.000	0.156			
	2010	QTED	0.000	0.015	0.011	0.000	0.403			
		QLED	0.028	0.144	0.044	0.000	0.082			
Saudi	2008	QTED	0.000	0.000	0.000	0.000	0.000	0.004		
		QLED	0.008	0.165	0.091	0.000	0.093	0.841		
	2009	QTED	0.000	0.001	0.000	0.000	0.000	0.006		
		QLED	0.003	0.052	0.032	0.000	0.023	0.532		
	2010	QTED	0.000	0.001	0.000	0.000	0.002	0.008		
		QLED	0.011	0.072	0.015	0.000	0.019	0.414		
Tunisia	2008	QTED	0.498	0.169	0.002	0.469	0.000	0.000	0.000	
		QLED	0.116	0.745	0.911	0.001	0.507	0.066	0.055	
	2009	QTED	0.915	0.053	0.001	0.656	0.000	0.000	0.000	
		QLED	0.266	0.934	0.384	0.006	0.625	0.132	0.023	
	2010	QTED	0.793	0.148	0.006	0.646	0.001	0.000	0.000	
		QLED	0.396	.641	0.823	0.002	0.655	0.061	0.021	
UAE	2008	QTED	0.000	0.000	0.000	0.000	0.000	0.001	0.782	0.000
		QLED	0.015	0.176	0.088	0.000	0.069	0.528	0.779	0.060
	2009	QTED	0.000	0.000	0.000	0.000	0.000	0.002	0.673	0.000
		QLED	0.023	0.172	0.098	0.000	0.074	0.581	0.943	0.085
	2010	QTED	0.000	0.003	0.001	0.000	0.003	0.007	0.471	0.000
		QLED	0.022	0.111	0.027	0.000	0.026	0.345	0.799	0.035

5.7 Summary

This chapter aimed to provide an overview of variations in environmental disclosure practices between national oil and gas corporations and international oil and gas companies operating in Arab petroleum exporting countries. To derive a final score, analysis of environmental disclosure practices across Arab petroleum exporting countries and the countries of international corporations was undertaken at three different levels. In spite of a general increase in environmental disclosures by oil and gas corporations during the period 2008 to 2010 in terms of both the quantity and the quality of disclosure, differences were noted regarding the number of companies from each country providing at least one disclosure on environmental disclosure practice, in addition to the themes being reported and the amount of disclosure in annual reports. Moreover, the analysis shows that the extent of environmental disclosure practices varies between companies according to the country of origin. It is interesting to point out that there was a significant gap in the level of environmental disclosure across sample companies. It has to be recognised that some national oil and gas corporations (in Qatar, Saudi Arabia, and UAE) provided a quality of environmental disclosure similar to some international oil and gas companies. Companies, as well as country origin, contributed in determining variation in these practices between companies according to their origin. Companies surveyed in this study work in the same sector, which have institutionalised environmental disclosure practices according to institutional theory. Cormier et al. (2005) report organisations operating in the same field seek to institutionalise among themselves through practice of the same procedures. As discussed in chapter four, stakeholder theory indicates that increases in levels of disclosure in organisations are in response to increased stakeholder scrutiny (See Coetzee & Van Staden 2011; Huang & Kung 2010).

6.0 CHAPTER SIX: RESULTS OF MULTIVARIATE ANALYSIS-MULTIPLE REGRESSION

The research methodology of this research study presented in chapter five is supported by chapters six and seven. Chapter six presents a descriptive analysis of variation of environmental disclosure practices in annual reports for both international and national oil and gas corporations. The variation in environmental disclosure was examined by quantity and quality of environmental disclosure. A word count has been used to analyse differences in quantity of environmental disclosure, whereas environmental disclosure index has been applied to measure the quality of environmental disclosure. For further in-depth analysis, this chapter describes the use of multivariate analysis through multiple regressions. This chapter aims to determine the extent of difference in environmental disclosure between national and international corporations based on the influence of external factors such as legal systems, economic development and political and civil systems on disclosure practices.

6.1 Independent and Dependent Variables

As previously discussed in the methodology chapter, this study adopted dependent variables which are the quantity of environmental disclosure measured by word count to the environmental disclosure items contained in the annual reports and the quality of environmental disclosure measured by the Environmental Disclosure Index. Tables 5-9 and 5-10 showed the quantity of environmental disclosure for national oil and gas corporations and international oil and gas corporations, while the quality of environmental disclosure for national oil and gas corporations and international oil and gas corporations is shown Tables in 5-13 and 5-14 respectively. Regarding independent variables, Table 6-1 presents a description of these variables. The first of these variables is economic freedom. This variable is used to measure variation in economic development among countries of the surveyed companies. From Table 6-1 it can be noted that the index for most countries is more than 50, except for Libya whose index score is under 50 over the three years. Overall, for

Arab countries, with the exception of Libya, the index of freedom ranges in score between 50 and 72; while the index of freedom in countries of international corporations ranges in score between 50 and 85. The second variable is political and civil freedom. As noted in the methodology chapter, scores of political freedom and civil liberty have been integrated together as one variable where both of them are ranked from 1 to 7. Thus, the minimum score of the variable is 2, which represents the highest degree of political and civil freedom of the country; while the highest score is 14 which represent the lowest degree of freedom in the country. With respect to countries with national companies, the score of freedom is between 8 and 14; while for countries with international companies the score of freedom is between 2 and 11. The third variable is legal system which is categorised into 5 categories according to the applicable legal system in the country.

Table 6-1: Description of the Independent Variables

Variables	Number of Firms	Countries of NOGCs	Countries of IOGCs
Political and Civil Freedom			
Level less than 5	90	0	90
Level more than 5 and less than 10	6	6	0
Level less than 15 and more than 10	53	45	8
Total	149	51	98
legal system			
Common law	68	0	68
Civil Law	30	0	30
Islamic Sharia	14	14	0
Mixed ‘Islamic and Common Law’	27	27	0
Mixed ‘Islamic and Civil Law’	10	10	0
Total	149	51	98
Economic Freedom			
Less than 50 score	5	5	0
From 50 to 60 score	18	11	8
From 60 to 70 score	44	31	13
From 70 to 80 score	61	4	57
More than 80 score	20	0	20
Total	149	51	98

Table 6-1 provides an overview of the distribution of independent variables between international and national companies. It can be observed that there is a variation in the values of the variables between national and international companies. For

example, the Index of Economic Freedom records a high index of economic freedom in international companies, whereas most national companies have been confined to scores between 60 and 70. Level of political and civil freedom shows that most international companies belong to countries that have a high score of freedom; contrary to national companies that belong to countries which have low levels of freedom. Regarding legal systems, it can be observed that the countries of international companies have applied common law and civil law, while Islamic Sharia law prevails in the countries of the national companies, coupled with common or civil law.

6.2 Descriptive Statistics

This research study uses a regression analysis to test the hypotheses proposed, therefore, it is worth examining the general descriptive statistics of this study's sample data before proceeding with the regression analysis. Table 6-2 reviews the descriptive statistics of the independent variables in the model and the dependent variables in order to give a complete image of the descriptive statistics of all variables used in the statistical model. Panel 'A' shows descriptive statistics of national corporations; whereas panel 'B' shows descriptive statistics of international corporations.

As shown in panel 'A' for national corporations, and with regard to dependent variables, it can be seen that the mean of variable of quantity of environmental disclosure in 2010 at 136.14 is higher than in 2008 and 2009 where it was 129.66 and 126.49 respectively. In addition, the mean of variable of quality of environmental disclosure in 2010 is 23.02, which is the highest over the study period. With respect to the independent variables, the highest mean of the variable political and civil freedom is 11.80 in 2009; and the highest mean of legal system variable and level of economic development is 4.61 and 63.352 in 2010 respectively.

Panel 'B' in Table 6-2 shows international companies and with respect to dependent variables it can be observed that the mean of quantity of environmental disclosure is 387.56 in 2010, and 351.72 and 374.23 in 2008 and 2009 respectively. Quality of

environmental disclosure records the highest mean in 2010 at 30.91. The mean of independent variable of level of economic development in 2009 is the highest over the study period (74.458) along with 71.9133 and 73.4378 in 2008 and 2010 respectively. Mean of the rest of the independent variables (political and civil system and legal system) does not change during the three years.

Table 6-2: Descriptive Statistics of All Variables for NOGCs and IOGCs

Panel A: NOGCs; No 51						
Variable	Year	Minimum	Maximum	Mean	Median	Std. Deviation
QTED	2008	24	214	126.49	134	53.774
	2009	29	222	129.66	139.50	57.192
	2010	37	249	136.14	149	60.753
QLED	2008	8	31	20.320	20	5.857
	2009	8	33	21.50	21.5	6.052
	2010	9	34	23.02	24.00	6.31
PCS	2008	8	14	11.255	11	1.674
	2009	10	14	11.80	11.50	1.111
	2010	8	14	11.373	11	1.624
LS	2008	3	5	4.52	5	0.483
	2009	3	5	4.58	5	.481
	2010	3	5	4.61	5	.485
LED	2008	38.70	72.20	61.830	62.8	7.261
	2009	43.50	65.80	60.94	64.30	6.664
	2010	40.20	76.30	63.352	67.30	8.989
Panel B: IOGCs, No 98						
QTED	2008	255	497	351.72	354.50	67.899
	2009	263	533	374.23	371.50	74.825
	2010	277	598	387.56	388.00	71.820
QLED	2008	22	41	28.5	28	3.990
	2009	22	43	29.94	29.50	4.245
	2010	24	42	30.91	30	4.339
PCS	2008	2	11	2.888	2	2.457
	2009	2	11	2.888	2	2.457
	2010	2	11	2.888	2	2.457
LS	2008	1	2	1.31	1	0.463
	2009	1	2	1.31	1	0.463
	2010	1	2	1.31	1	0.463
LED	2008	49.90	80.60	71.913	79.50	10.584
	2009	50.80	82.60	74.458	79.00	9.499
	2010	50.30	82.60	73.437	76.50	8.827

6.3 Statistical Model for Dependent and Independent Variable

The methodology of statistical analysis used is aimed at interpreting the information and drawing conclusions by applying it to the basic data. In order to obtain a better insight into the association between variables, the relationship will be investigated by constructing multiple linear regression models. Field (2009) stated that multivariate regression is used to measure, explain and predict the degree of linkage among variables. Therefore, multiple regression analysis aims to arrive at the best set of coefficients for the independent variables which gives the best values of the dependent variables in the equation (Burns & Burns 2008; Field 2009). However, regression analysis may include serious limitations when it comes to categorical variables. As one of the variables in this study, legal system, is a categorical variable which categorises into five categories, it should convert the categorical variable into a dummy variable in order to correctly analyse attribute variables (Burns & Burns 2008; Field 2009).

In this context, the variable section of the legal system is as follows. For countries of international oil and gas corporations, legal system converts into one dummy variable where it represents between 1 and 0. The value 1 refers to countries that apply common law and the value 0 indicating countries that apply civil law. For Arab countries, the legal system converts into two dummy variables where Islamic Sharia law is considered as a reference. Therefore, first dummy variable refers to the extent of change between Islamic Sharia law and mixed law (common and Islamic law) and 1 value was given to countries that apply common and Islamic law, otherwise a 0 value. Second dummy variable refers to the extent of change between Islamic Sharia law and mixed law (civil and Islamic Sharia law) and 1 was given for countries that use civil and Islamic Sharia law, otherwise a 0 value. Accordingly, the regression model has been rebuilt as follows:

1) $QTED = a + \beta 1PCSi + \beta 2CIV\_COM(LS)i + \beta 3LEDi + e$

2) $QTED = a + \beta 1PCSi + \beta 2COMISL\_ISM(LS)i + \beta 3CIVISL\_ISM(LS)i + \beta 4LEDi + e$

3) $QLED = a + \beta 1PCSi + \beta 2CIV\_COM(LS)i + \beta 3LEDi + e$

4) $QLED = a + \beta 1PCSi + \beta 2COMISL\_ISM(LS)i + \beta 3CIVISL\_ISM(LS)i + \beta 4LEDi + e$

Where:

Models 1 and 3 are related to international oil and gas corporations and models 2 and 4 are related to national oil and gas corporations. QTED refers to quantity of environmental disclosure measured using word count; QLED refers to quality of environmental disclosure measured using environmental disclosure index; PCS indicates political and civil system where it is measured by index of political rights and civil liberty together; COM_CIV(LS) refers to dummy variable of legal system to measure change between use of common law and civil law; COMISL_ISL (LS) refers to dummy variable of legal system to measure change between use of the mixed law (common law and Islamic law) to Islamic Sharia law; CIVISL_ISL (LS) refers to dummy variable of legal system to measure change between use of mixed law (civil law and Islamic Sharia law) to Islamic Sharia law; and LED indicates level of economic development measured using index of economic freedom.

6.4 Correlation Matrix Analysis

In this investigation the aim was to assess the association between variables. Therefore, Pearson's correlation and Spearman correlation between the variables are used in this study to test the hypotheses. Tabachnck and Fidell (2007) said that execution of correlation is designed to provide an early indication of any multicollinearity problems between variables; if found it may pose a risk to multivariate analysis. Furthermore, incorrect estimation of regression coefficients of ordinary least squares (OLS) usually results in multicollinearity. Furthermore, it often uses the correlation as a descriptive tool in non-experimental research. It can be said that two measures are correlated if they have something in common. In other words, the main idea behind the coefficient of correlation is to compute an index to reflect how much two series of measurements are related to each other. But the use

of dummy variables should achieve two conditions. First, the correlation between dummy variables is not zero. Second, the correlation between dummy variables and the dependent variables is significantly different from zero.

6.4.1 Pearson's Correlation

6.4.1.1 Pearson's Correlation of National Corporations

Table 6-3 shows the simple correlation matrices between the entire variables under consideration. Obviously, the correlation between the quantity of environmental disclosure and level of economic development in each year is positive. This correlation is moderate in 2010 (about 0.419), but higher in 2009 (0.754). P-values of correlation are <0.001, indicating that the resulting correlations are very highly significant. Additionally, quality of environmental disclosure also has a positive correlation with level of economic development over the three years. This correlation is moderate in 2009 (0.597) but low in 2010 (0.279). In 2009 and 2010, the correlation between quality of environmental disclosure and level of economic development is significant at levels .001 and .005 in 2009 and 2010 respectively, but shows no significant correlation in 2008. For the legal system, the relationship with the quantity and quality of environmental disclosure is negative over the three years, but it does not show a significant association between them. Additionally, the variable of political and civil system has a positive relationship in 2009 with both quantity and quality of environmental disclosure, but negative in 2008 and 2010. Interestingly, the variable of level of economic development is associated with all the independent and dependent variables significantly at levels of 0.001 and 0.005 over the three years.

Table 6-3: Pearson's Correlation Matrix Based on All Variables of the Study for NOGCs

		QTED	QLED	PCS	COMISL_ ISL	CIVISL _ISL
QLED	2008 Pearson Correlation	0.731**				
	Sig (2-tailed)	0.000				
	2009 Pearson Correlation	0.725**				
	Sig (2-tailed)	0.000				
	2010 Pearson Correlation	0.798**				
	Sig (2-tailed)	0.000				
PCS	2008 Pearson Correlation	-0.052	-0.057			
	Sig (2-tailed)	0.727	0.702			
	2009 Pearson Correlation	0.001	0.079			
	Sig (2-tailed)	0.995	0.586			
	2010 Pearson Correlation	-0.173	-0.124			
	Sig (2-tailed)	0.225	0.387			
COMISL_ ISL	2008 Pearson Correlation	-0.286	-0.334*	-.645**		
	Sig (2-tailed)	0.051	0.022	0.000		
	2009 Pearson Correlation	-0.101	-0.250	-0.281*		
	Sig (2-tailed)	0.486	0.080	0.048		
	2010 Pearson Correlation	-0.185	-0301*	-0.667**		
	Sig (2-tailed)	0.194	0.027	0.000		
CIVISL_I SL	2008 Pearson Correlation	-0.073	0.184	-0.087	-0.554**	
	Sig (2-tailed)	0.627	0.215	0.560	0.000	
	2009 Pearson Correlation	-0.124	0.214	-0.466**	-0.585**	
	Sig (2-tailed)	0.392	0.136	0.001	0.000	
	2010 Pearson Correlation	-0.109	0.204	-0.148	-0.524**	
	Sig (2-tailed)	0.448	0.151	0.300	0.000	
LED	2008 Pearson Correlation	0.291*	0.122	-0.563**	0.581**	-0.117
	Sig (2-tailed)	0.048	0.452	0.000	0.000	0.435
	2009 Pearson Correlation	0.746**	0.597**	-.485**	0.191	0.223
	Sig (2-tailed)	0.000	0.000	0.000	0.184	0.119
	2010 Pearson Correlation	0.419**	0.279*	-0.589**	0.432	0.138
	Sig (2-tailed)	0.002	0.047	0.000	0.002	0.336

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

6.4.1.2 Pearson's Correlation of International Corporations

For the three years the correlation matrix given in Table 6-4 shows that the quantity of environmental disclosure has a very highly significant correlation with all independent variables at p-value<0.001. It is worth noting that the correlation between quantity of environmental disclosure and level of economic development is positive over the three years (r=0.779, 0.627 and 0.573). In contrast, a negative significant correlation is found between quantity of environmental disclosure and political and civil system at level p-value<0.001 during 2008, 2009 and 2010. The more surprising correlation is with the COM_CIV (LS) which shows a negative correlation in 2008 and 2009 (r = -0.594 and -0.616 respectively) but changes to a

positive correlation in 2010 (r = 0.595). Furthermore, a significant correlation between quality of environmental disclosure with the COM_CIV (LS) and level of economic development is found; whereas the correlation with political and civil system is not significant. Overall, level of economic development has a positive correlation significant at level 0.001 in 2008 and 2009 but the association is at 0.005 in 2010. There are similarities between correlations expressed by COM_CIV (LS) in this study with quality of environmental disclosure similar to the correlation with quantity of environmental disclosure in terms of a negative correlation in 2008 and 2009. Surprisingly, no significant correlation is found in 2010, contrary to the correlation with quantity of environmental disclosure. On the other hand, in regard to correlation between dummy variables COM_CIV (LS) and dependent variables it can be noted that the value of correlation is greater than zero, in conformity with the conditions in the correlation matrix of the dummy variables. Therefore, in general, the values of the association between variables in the correlation matrix are moderate and do not exceed 0.900, which means there is no serious multicollinearity.

Table 6-4: Pearson's Correlation Matrix Based on All Variables of the Study for IOGCs

		QTED	QLED	PCS	COM_CIV (LS)
QLED	2008 Pearson Correlation	0.457**			
	Sig (2-tailed)	0.000			
	2009 Pearson Correlation	0.287**			
	Sig (2-tailed)	0.004			
	2010 Pearson Correlation	0.242*			
	Sig (2-tailed)	0.016			
PCS	2008 Pearson Correlation	-0.384**	-0.195		
	Sig (2-tailed)	0.000	0.052		
	2009 Pearson Correlation	-0.415**	-0.180		
	Sig (2-tailed)	0.000	0.076		
	2010 Pearson Correlation	-0.457**	-0.148		
	Sig (2-tailed)	0.000	0.146		
COM_CIV (LS)	2008 Pearson Correlation	-0.594**	-0.343**	0.500**	
	Sig (2-tailed)	0.000	0.000	0.000	
	2009 Pearson Correlation	-0.616**	-0.336**	0.501**	
	Sig (2-tailed)	0.000	0.001	0.000	
	2010 Pearson Correlation	0.595**	0.196	-0.501**	
	Sig (2-tailed)	0.000	0.053	0.000	
LED	2008 Pearson Correlation	0.779**	0.393**	-0.644**	-0.471**
	Sig (2-tailed)	0.000	0.000	0.000	0.000
	2009 Pearson Correlation	0.627**	0.319**	-0.788**	-0.728**
	Sig (2-tailed)	0.000	0.001	0.000	0.000
	2010 Pearson Correlation	0.573**	0.229*	-0.820**	0.690**
	Sig (2-tailed)	0.000	0.023	0.500**	0.000

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed

6.4.2 Spearman's Rank-Order Correlation

6.4.2.1 Spearman's correlation of national corporations

The value for Spearman's rho from Table 6-5 indicates a significant and positive correlation coefficient between level of economic development with quantity and quality of environmental disclosure during the three years of study. Obviously, this correlation is moderate in 2010, but higher in 2009. For political and civil systems, the relationship with the level of economic development is negative over the three years but it is a significant association between them. Additionally, political and civil system has negative correlation with quantity and quality of environmental disclosure in 2008 and 2010 but it is not a significant coefficient. With respect to two variables legal system, both of them (COMISL_ISL and CIVISL_ISL) have a correlation with quantity and quality of environmental disclosure but it is no significant. Interestingly, COMISL_ISL has associated negatively with both the quantity and quality of environmental disclosure while CIVISL_ISL has a positive association with quantity and quality of environmental disclosure over three years. In contrast, level of economic development has a significant correlation in 2008 and 2010 with COMISL_ISL while the relationship with CIVISL_ISL is not significant.

6.4.2.2 Spearman's correlation of International corporations

It can be noted from table 6.6 that quantity of environmental disclosure has a very highly significant correlation with all independent variables at p-value<0.001. Over three years the correlation between quantity and level of economic development is positive (0.722, 0.501, and 0.449). In contrast, political and civil system has associated with quantity of environmental disclosure negative significantly. Interestingly, the correlation between quantity of environmental disclosure and legal system is significantly over three years but it is negative in 2008 and 2009 while it is positive in 2010. in other hand, the correlation of quality of environmental with legal system and level of economic development are positive during three years but it is significant in 2008 and 2009 (0.346, 0.329), (0.429, 0.387) while it is no significant in 2010 (0.160) (0.149) respectively. Political and civil system has a negative correlation with quality of environmental disclosure over three years. Regarding the

relationship between the independent variables with each other, it can be observed a significant relationship between them during the past three and that varied between positive and negative.

Table 6-5: Spearman's Correlation Matrix Based on All Variables of the Study for NOGCs

		QTED	QLED	PCS	COMISL_ISL	CIVISL_ISL
QLED	2008 Correlation Coefficient	0.704**				
	Sig (2-tailed)	0.000				
	2009 Correlation Coefficient	0.670**				
	Sig (2-tailed)	0.000				
	2010 Correlation Coefficient	0.746**				
	Sig (2-tailed)	0.000				
PCS	2008 Correlation Coefficient	-0.046	-0.138			
	Sig (2-tailed)	0.746	0.335			
	2009 Correlation Coefficient	0.170	0.127			
	Sig (2-tailed)	0.233	0.376			
	2010 Correlation Coefficient	-0.129	-0.109			
	Sig (2-tailed)	0.367	0.446			
COMISL_ISL	2008 Correlation Coefficient	-0.154	-0.110	-.696**		
	Sig (2-tailed)	0.281	0.441	0.000		
	2009 Correlation Coefficient	-0.225	-0.244	-0.314*		
	Sig (2-tailed)	0.113	0.085	0.025		
	2010 Correlation Coefficient	-0.147	-0203	-0.621**		
	Sig (2-tailed)	0.304	0.153	0.000		
CIVISL_ISL	2008 Correlation Coefficient	0.036	0.139	-0.228	-0.491**	
	Sig (2-tailed)	0.802	0.330	0.108	0.000	
	2009 Correlation Coefficient	0.075	0.122	-0.461**	-0.524**	
	Sig (2-tailed)	0.602	0.395	0.001	0.000	
	2010 Correlation Coefficient	0.093	0.151	-0.297*	-0.491**	
	Sig (2-tailed)	0.514	0.290	0.034	0.000	
LED	2008 Correlation Coefficient	0.515**	0.379**	-0.569**	0.678**	-0.344
	Sig (2-tailed)	0.000	0.006	0.000	0.000	0.013
	2009 Correlation Coefficient	0.601**	0.525**	-.317*	0.193	0.181
	Sig (2-tailed)	0.000	0.000	0.023	0.174	0.205
	2010 Correlation Coefficient	0.379**	0.305*	-0.689**	0.497**	0.081
	Sig (2-tailed)	0.007	0.030	0.000	0.000	0.573

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 6-6: Spearman's Correlation Matrix Based on All Variables of the Study for IOGCs

		QTED	QLED	PCS	COM_CIV (LS)
QLED	2008 Pearson Correlation	0.404**			
	Sig (2-tailed)	0.000			
	2009 Pearson Correlation	0.287**			
	Sig (2-tailed)	0.004			
	2010 Pearson Correlation	0.239*			
	Sig (2-tailed)	0.018			
PCS	2008 Pearson Correlation	-0.520**	-0.308**		
	Sig (2-tailed)	0.000	0.002		
	2009 Pearson Correlation	-0.572**	-0.302**		
	Sig (2-tailed)	0.000	0.002		
	2010 Pearson Correlation	-0.548**	-0.056		
	Sig (2-tailed)	0.000	0.587		
COM_CIV (LS)	2008 Pearson Correlation	-0.536**	0.346**	-0.589**	
	Sig (2-tailed)	0.000	0.000	0.000	
	2009 Pearson Correlation	-0.631**	0.329**	0.589**	
	Sig (2-tailed)	0.000	0.001	0.000	
	2010 Pearson Correlation	0.602**	0.160	-0.589**	
	Sig (2-tailed)	0.000	0.116	0.000	
LED	2008 Pearson Correlation	0.722**	0.429**	-0.538**	0.547**
	Sig (2-tailed)	0.000	0.000	0.000	0.000
	2009 Pearson Correlation	0.501**	0.387**	-0.656**	0.722**
	Sig (2-tailed)	0.000	0.000	0.000	0.000
	2010 Pearson Correlation	0.449**	0.149	-0.656**	0.722**
	Sig (2-tailed)	0.000	0.143	0.000**	0.000

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed

6.5 Collinearity Statistics

In order to build the regression model and obtain the best model to explain the relationship between variables, there should not be a strong correlation between two or more predictors in a regression model—called multicollinearity. In this context, Field (2009, p. 223) states that 'If there is perfect collinearity between predictors it becomes impossible to obtain unique estimates of the regression coefficients because there are an infinite number of combinations of coefficients that would work equally well'. Therefore, collinearity statistics are used in order to check if there is any

strong correlation between variables by measuring Variance Inflation Factor (VIF). The VIF indicates whether a predictor has a strong linear relationship with the other predictor(s). To measure the degree of severity of multicollinearity, the variance inflation factor (VIF) was used. Consequently, the source of concern in the correlations is multicollinearity, which occurs when the tolerance levels are very low (approaching zero) or variance inflation factors (VIF) are very high (more than 10) (Pallant 2010). Therefore, the exploratory variable has a relationship with other exploratory variables if VIF for a particular variable is greater than 10. In this context, Field (2009) suggested that the way to eliminate the harmful effect of multicollinearity on variables is to exclude the variable from the model. This process is repeated until VIF are found to be greater than 10 among variables. Furthermore, another indicator that should be verified for lack of correlation between predictor variables is tolerance. The value of tolerance should not be less than 0.1 where the low value indicates a causal link or more with other pathogens. In this respect, Field (2009, p. 242) indicated that 'tolerance below 0.1 indicates a serious problem whereas below 0.2 indicates a potential problem'.

Table 6-5 shows the value of VIF for the independent variables for the period of study for national and international companies respectively. Regarding national companies, it can be observed that the value of VIF for all independent variables is less than 10 over the three years which indicates there is no danger to the regression model. In addition, with regard to variables of international companies, the value of VIF is lower than 10 also. Moreover, the tolerance statistics are all well above 0.2 for both the variables of national and international firms. Therefore, it can be safely concluded that there is no collinearity within multiple regressions in this study.

Table 6-7: Collinearity Statistics for NOGCs and IOGCs

Panel A: NOGCs					
Year		PCS	COMISL_ISL	CVIISL_ISL	LED
2008	Tolerance	0.293	0.288	0.348	0.591
	VIF	3.410	5.324	2.875	1.693
2009	Tolerance	0.302	0.263	0.225	0.754
	VIF	3.312	3.800	4.451	1.326
2010	Tolerance	0.210	0.251	0.266	0.619
	VIF	4.767	6.628	3.759	1.617
Panel B: IOGCs					
year		PCS	COM_CIV (LS)		LED
2008	Tolerance	0.535	0.712		0.556
	VIF	1.868	1.405		1.799
2009	Tolerance	0.367	0.455		0.230
	VIF	2.724	2.196		4.345
2010	Tolerance	0.320	0.511		0.224
	VIF	3.126	1.957		4.468

The Durbin-Watson (DW) model has been used to test the independent errors (autocorrelation). Test results range between 0 and 4. However, as a very conservative rule of thumb, if the value of Durbin-Watson is less than 1 or more than 3 there is cause for concern, but if the value is close to 2 autocorrelation is not a problem with the data. In view of this, Table 6-6 is intended to show a value of the Durbin-Watson test over the three years for national and international corporations. With the values of Durbin-Watson ranging between 2 and 2.5 it indicates there is no risk on the regression in terms of autocorrelation.

Table 6-8: Descriptive Statistics of the Durbin-Watson for NOGCs and IOGCs

Panel A: NOGCs			
	Year	Value for quantity model	Value for quality model
The Durbin-Watson	2008	2.290	1.660
	2009	2.426	2.522
	2010	2.549	2.403
Panel B: IOGCs			
	Year	Value for quantity model	Value for quality model
The Durbin-Watson	2008	1.978	1.659
	2009	1.999	1.449
	2010	1.750	1.706

6.6 Results of Regression Model

To test the relationship between quantity and quality of environmental disclosure and external factors to determine whether substantial differences persist between national and international corporations, multivariate regression models are applied for the years 2008, 2009 and 2010. Therefore, the results of multivariate regression models are contained in the next section.

6.6.1 Regression Model of National Corporations

6.6.1.1 Quantity Model

Table 6-7 presents the R^2 and adjusted-R^2 where the square r is a measure of how much of the variability in the outcome is accounted for by the predictors, while adjusted R^2 gives some idea of how well and ideally a model generalises. It can be noted that R^2 in 2009 is higher than in 2008 and 2010. In 2009, the value of R^2 is 0.755, which means independent variables account for 75.5% of the variation in quantity of environmental disclosure. In contrast, the ratio of variation in 2008 and 2010 is 68.8% and 71.4% respectively. In addition, the adjusted R^2over the three years is very close to the value of R^2 for each year. In fact, the difference between the values range between 0.021 and 0.030 (about 2% and 3%) which means that if the model were derived from the population rather than a sample it would account for approximately between 2% and 3% less variance in quantity of environmental disclosure during the study period. Moreover, the F-ratio represents the ratio of the improvement in prediction that results from fitting the mode relative to the inaccuracy that still exists in the model. The F-ratio in 2009 is higher than 2008 and 2010 (P<.001 for each year). Therefore, it can be interpreted from these results that the model in 2009 is even better (because the F-ratio is more significant). Otherwise, it can be said that the model in 2010 significantly improved the ability to predict the quantity variable based on degrees of freedom (DF).

Table 6-9: Results of ANOVA and Determination of Coefficient for NOGCs' Quantity Model

Year	ANOVA			R^2	Adjusted-R^2
	DF	F	p-value		
2008	42	23.118	<..000	0.688	0.658
2009	45	34.732	<.000	0.755	0.734
2010	46	28.741	<.000	0.714	0.689

On the other hand, the b-values explain the relationship between quantity of environmental disclosure and each predictor variable (political and civil system, legal system, and level of economic development). As shown in Table 6-8, the relationship between the independent variables and the dependent variable ranges between positive and negative according to the value of beta. It is noted that the relationship between level of economic development and quantity of environmental disclosure is positive over the three years; otherwise the relationship between the other variables ranged between negative and positive. Therefore, level of economic development had a higher significant effect in 2009 than 2008 and 2010 (p-value<.001) on quantity of environmental disclosure variable. The negative effect of political and civil system in 2010 is higher than in 2008, while it is positive in 2009 where b value is 23.358. Regarding legal system, there is a negative significant effect on quantity of environmental disclosure in 2008 and 2010, but it is higher in 2010 than 2008. In 2010, it can be interpreted as COMISL_ISL being 282.998 words less in quantity of environmental disclosure per year relative to the Islamic Sharia law, while CIVISL_ISL is 137.313 words less than the Islamic Sharia law. Effect of the difference between applicable laws is similar in 2008 but with different values with p<0.000 for both years 2008 and 2010. On the other hand, the results of the analysis show that in 2009 the relationship between legal system and the quantity of environmental disclosure is not significant for both types of legal system whether a positive or a negative impact.

Table 6-10: Results of Estimated Coefficients for NOGCs' Quantity Model

Year	Variable	Coefficients		
		B	*t*	p-value
2008	constant	197.732	2.247	0.030
	PCS	-27.063	-5.291	0.000
	COMISL_ISL	-225.844	-8.732	0.000
	CIVISL_ISL	-93.729	-6.013	0.000
	LED	5.358	6.449	0.000
2009	constant	-659.379	-6.029	0.000
	PCS	-23.358	3.382	0.001
	COMISL_ISL	-19.094	-1.002	0.322
	CIVISL_ISL	3.469	0.197	0.845
	LED	8.471	11.627	0.000
2010	constant	473.697	4.787	0.000
	PCS	-44.256	-6.876	0.000
	COMISL_ISL	-282.998	-9.205	0.000
	CIVISL_ISL	-137.313	-7.455	0.000
	LED	4.640	6.849	0.000

6.6.1.2 Quality Model

On the question of quality, this study found—as shown in Table 6-9—that R^2 in 2010 is higher than in 2008 and 2009. Therefore, independent variables account for about 69% of the variation in the value of the quality of disclosure in 2010, whereas it was 47.1% and 62.2% in 2008 and 2010 respectively. An addition, the F value has recorded the highest value in 2010 worth 25.537, while in 2008 and 2009 it is 9.356 and 18.538 respectively.

Table 6-11: Results of ANOVA and Determination of Coefficient for NOGCs' Quality Model

Year	ANOVA			R^2	Adjusted-R^2
	DF	F	p-value		
2008	42	9.356	<.000	0.471	0.421
2009	45	18.538	<.000	0.622	0.589
2010	46	25.537	<.000	0.689	0.662

Interestingly, as shown in Table 6-10, economic freedom variable is associated with the quality of environmental disclosure and significantly positive over the three years

at a level of 0.001. However, in 2009 the effect remains more than in 2008 and 2010. Additionally, and surprisingly, the political and civil system is associated with the quality of environmental disclosure and is significantly negative in 2008 and 2010 at a level of 0.001, while in 2010 the level was 0.005 and the association is positive. It is somewhat surprising that the legal system has significant association in 2008 and 2010 at level of 0.001 while the association is not significant in 2009. The impact of the legal system depends on the legal system applicable. Accordingly, it can be said that a negative impact of the CIVISL_ISL on the quality of environmental disclosure is less than 7 and 13 of the Islamic Sharia law in 2008 and 2010 respectively. In contrast, the COMISL_ISL effect is less than 21 and 30 of the Islamic Sharia law in 2008 and 2010 respectively as well.

Table 6-12: Results of Estimated Coefficients for NOGCs' Quality Model

Year	Variable	Coefficients		
		b	*t*	p-value
2008	constant	40.194	3.222	0.002
	PCs	-2.916	-4.002	0.000
	COMISL_ISL	-21.100	-5.756	0.000
	CIVISL_ISL	-7.711	-3.490	0.001
	LED	0.348	2.958	0.005
2009	constant	-59.466	-4.135	0.000
	PCS	-2.861	-3.151	0.003
	COMISL_ISL	-2.245	-0.896	0.375
	CIVISL_ISL	2.122	0.916	0.365
	LED	0.765	7.990	0.000
2010	constant	70.050	6.539	0.000
	PCS	-4.997	-7.171	0.000
	COMISL_ISL	-30.834	-9.263	0.000
	CIVISL_ISL	-13.566	-6.803	0.000
	LED	0.363	4.956	0.000

6.6.2 Regression Models of International Corporations

6.6.2.1 Quantity Model

As shown in Table 6-11, R^2 and adjusted-R^2over the three years refers to good results in the interpretation of variation. In 2008, the value of R^2 is at the top of the 2009 and 2010 range where the percentage of the interpretation of the variation in quantity of

environmental disclosure is about 73% in 2008, and 45% and 40% in 2009 and 2010 respectively. Additionally, the table shows the correlation in the whole model as being statistically significant where it is clear that the value of F is high in the study period. Specifically, the value of F in 2008 is much higher than it is in 2009 and 2010.

Table 6-13: Results of ANOVA and Determination of Coefficient for IOGCs' Quantity Model

Year	ANOVA		R^2	Adjusted-R^2
	F	p-value		
2008	83.855	0.000	0.730	0.721
2009	26.177	0.000	0.455	0.438
2010	21.277	0.000	0.404	0.385

The results presented in Table 6-12 show the impact of predictor variables on the quantity of environmental disclosure contained in annual reports of international corporations. Regarding the legal system, it has a significant association with the quantity of environmental disclosure during the three years. In 2008, as shown in Table 8-12, results are β=54.838 and p= 0.000 for COM_CIV (LS) which means that quantity of environmental disclosure in countries that applied common law is higher than countries that applied civil law by 54.838 times. This occurs in 2009 and 2010, but the biggest impact of the legal system is in 2010, where the difference between common law and civil law in influencing the quantity of environmental disclosure is 59.667 and statistically significant at the level 0.01. Surprisingly, there is no impact on the quantity of environmental disclosure by political and civil system in 2010 despite a significant impact in 2008 and 2009 at a statistically significant level 0.01 and 0.05 respectively. The other interesting point in the regression results is the relationship between political and civil system and the quantity of environmental disclosure. Despite a positive impact with a statistical significance for political and civil system on quantity of environmental disclosure in 2008, there is no statistical effect in 2009, and the relationship became a negative in 2010.

Table 6-14: Results of Estimated Coefficients for IOGCs' Quantity Model

Year	Variable	B	t	p-value
2008	constant	-85.054	-2.335	0.022
	PCS	9.005	4.447	0.000
	COM_CIV(LS)	54.838	5.878	0.000
	LED	5.200	11.247	0.000
2009	constant	34.297	0.375	0.708
	PCS	4.384	1.183	0.001
	COM_CIV(LS)	49.358	2.789	0.006
	LED	3.922	3.241	0.002
2010	constant	183.786	1.766	0.081
	PCS	-1.082	-0.263	0.003
	COM_CIV(LS)	59.667	3.456	0.001
	LED	2.254	1.646	0.003

6.6.2.2 Quality Model

As shown in Table 6-13, the R^2 for quality of environmental disclosure model is slightly weaker than the quantity of environmental disclosure model earlier (0.204 vs. 0.730 in 2008, 0.133 vs. 0.455 in 2009, and 0.259 vs. 0.404 in 2010). Clearly, this is due to the fact that the independent variables in this model are weakly correlated and ultimately do not bring much extra information. Specifically, the contribution of independent variables in the interpretation and the variation in the quality of environmental disclosure is weak in international companies, which opens the door to other factors perhaps contributing to the explanation for the variation in the quality of environmental disclosure. Moreover, the adjusted R^2 is less than that obtained in the former section. Therefore, the extra information brought by these variables in this model is lower than information obtained in the quantity of environmental disclosure model. In contrast, despite the weak R^2, the value of F indicates the probability one independent variable may provide explanation for the variation in the quality of disclosure, especially in 2008 and 2009. The statistical significance of the value of F in 2008 and 2009 shows a relationship between the independent variables and the dependent variable in terms of being statistical significant at 0.01 and 0.05 in 2008 and 2009 respectively. Surprisingly, in the results of the analysis there is an absence

of any indication of the relationship between the variables in the model as a whole in 2010 (b = 0.123).

Table 6-15: Results of ANOVA and Determination of Coefficient for IOGCs' Quality Model

Year	ANOVA		R^2	Adjusted-R^2
	F	p-value		
2008	7.958	0.000	0.204	0.179
2009	4.793	0.004	0.133	0.105
2010	1.973	0.123	0.259	0.229

A review of the results of the regression analysis of independent variables and their relationship with the quality of environmental disclosure, as shown in Table 6-14, demonstrates that the relationship between the independent variables and the quality of environmental disclosure is positive in international companies over the study period of this research. Level of economic development has an associated statistically significant correlation with the quality of environmental disclosure in 2008 and 2009 at the 0.05 level. The importance of this impact on the quality of environmental disclosure is slightly more significant in 2008 than in 2009 (b= 0.148 in 2008 and b= 0.128 in 2009). In contrast, the correlation between them in 2010 is not statistically significant (b= 0.137, p=0.190). In addition, the relationship between the legal system and the quality of environmental disclosure in 2009 and 2010 is not statistically significant (b=1.776, p=0.167 and b=0.550, p=0.675 respectively), while it is statistically significant in 2008 (b=2.147, p=0.025). This means that countries that apply common law provide quality of environmental disclosure more than those countries that apply civil law. Finally, despite the positive relationship between political and civil system and quality of environmental disclosure, the relationship is not statistically significant over the three years.

Table 6-16: Results of Estimated Coefficients for IOGCs' Quality Model

Year	Variable	Coefficients	*t*	p-value
2008	constant	15.479	4.198	0.000
	PCS	0.296	1.444	0.152
	COM_CIV(LS)	2.147	2.273	0.025
	LED	0.148	3.169	0.002
2009	constant	18.389	2.779	0.007
	PCS	0.252	0.941	0.349
	COM_CIV(LS)	1.776	1.391	0.167
	LED	0.128	1.458	0.048
2010	constant	19.874	2.515	0.014
	PCS	0.195	0.625	0.533
	COM_CIV(LS)	0.550	0.420	0.675
	LED	0.137	1.321	0.001

6.6.3 Overview of Multivariate Results

6.6.3.1 Political and Civil System (PCS)

By comparing the impact of political and civil system on the quantity and quality of environmental disclosure information in annual reports of both the national oil and gas corporations and international oil and gas corporations, as shown in Table 6-15, it can be seen that there are statistically significant differences between them. The relationship between political and civil system and quantity of environmental disclosure is statistically significant at level 0.01 and 0.05. However, the influence is fundamentally different because it is a negative influence in national companies, and a positive influence in international companies. This validates the hypothesis H1a which suggests that the relationship between political and civil systems and the quantity of environmental disclosure is a negative in national companies; unlike in international companies where it is a positive. In addition, the negative impact of political and civil system on quantity of environmental disclosure increased in 2010. In contrast, the result is counterproductive in international companies where the influence declined in 2010. On the question of the relationship between political and civil system and quality of environmental disclosure, there is no significant correlation between political and civil system and quality of environmental disclosure in international firms despite a positive correlation. In contrast, the results of analysis in regard to national firms show a significant statistical correlation at the

p = 0.05 and 0.01 level. Besides, the effect has increased negatively during the study period from -4.002 in 2008 to -7.171 in 2010. The results of an analysis of the relationship between the political and civil system applicable in the country and the quality of disclosure in its firms supports hypothesis H1b (stated in chapter 3).

Table 6-17: Influence of the PCS on QTED and QLED

Panel A: Quantity						
Year	National Corporation			International Corporation		
	B	*t*	p-value	B	*t*	p-value
2008	-27.063	-5.291	0.000	9.005	4.447	0.000
2009	-23.358	3.382	0.001	4.384	1.183	0.001
2010	-44.256	-6.876	0.000	2.254	1.646	0.003
Panel B: Quality						
Year	National Corporation			International Corporation		
	B	*t*	p-value	B	*t*	p-value
2008	-2.916	-4.002	0.000	0.296	1.444	0.152
2009	-2.861	-3.151	0.003	0.252	0.941	0.349
2010	-.997	-7.171	0.000	0.195	0.625	0.533

6.6.3.2 Legal System (LS)

It is interesting to point out that legal system has been associated with significant correlation with the quantity of environmental disclosure at the 1% and 5% level over the three years of study for international corporations—unlike national companies. It is apparent from Table 6-16 that the legal systems applicable in the countries of international oil and gas corporations which use common law and civil law have impacted on the quantity of environmental disclosure information positively. Furthermore, it can be noted that the firms belonging to countries applying common law have disclosed more than companies belonging to countries applying civil law. During the study period it was found that differences in quantity of environmental disclosure have increased from 54.838 in 2008 to 59.667 in 2010. On the other hand, further analysis showed that the legal system in Arab countries had a statistically significant effect in 2009 at 0.01; but a negative effect in 2008 and 2010. Therefore, according to the results presented in Table 16-6, it can be said there is validity of the hypothesis regarding the impact of the type of legal system applicable where hypothesis H2a indicated that environmental disclosure has a

positive effect with legal systems in countries that use common or civil law in enacting legislation. The most striking result from the data is that the type of legal system applicable in Arab countries in 2009 showed a different effect in accordance with the rules applicable in terms of a negative and a positive. However this effect is not statistically significant.

On the contrary, no statistically significant difference is found between legal system and quality of environmental disclosure in international firms in 2009 and 2010 as presented in panel B of Table 8-16. This condition is opposite in 2008 where the correlation is significant and positive at the p = 0.05 level. Otherwise, results of analysis of regression between the coefficients of legal system with quality of environmental disclosure demonstrated results similar to the results of quantity of environmental disclosure. Thus, although influence of legal system for national companies is statistically significant in 2008 and 2010, unlike international corporations that have influence statistically in 2008 only, the effect is a positive for the international companies and a negative in national firms. This supports hypothesis H2b which indicated that there is a positive impact of the legal system on the quality of disclosure in international companies and a negative effect in national companies.

Table 6-18: Influence of the LS on QTED and QLED

Panel A: Quantity						
	National Corporation			International Corporation		
Year	B	*t*	p-value	B	*t*	p-value
2008	-225.844 -93.729	-8.732 -6.013	0.000 0.000	54.838	5.878	0.000
2009	-19.094 3.469	-1.002 0.197	0.322 0.845	49.358	2.789	0.006
2010	-282.998 -137.313	-9.205 -7.455	0.000 0.000	59.667	3.345	0.001
Panel B: Quality						
	National Corporation			International Corporation		
Year	B	*t*	p-value	B	*t*	p-value
2008	-21.100 -7.711	-5.756 -3.490	0.000 0.001	2.147	2.273	0.025
2009	-2.245 2.122	-0.896 0.916	0.375 0.365	1.776	1.391	0.167
2010	-30.834 -13.566	-9.263 -6.803	0.000 0.000	0.550	0.520	0.675

6.6.3.3 Level of Economic Development (LED)

The results, as shown in Table 6-17, indicate that a positive correlation is found between level of economic development and quantity and quality of environmental disclosure information contained in the annual reports for national and international corporations alike. However, the impact of level of economic development on quantity and quality of environmental disclosure in national oil and gas corporations is greater than for international oil and gas corporations. Over the three years, a positive correlation is found between level of economic development and quantity and quality of environmental disclosure at 0.01 for national oil and gas corporations; while it is at 0.01 and 0.05 for international oil and gas corporations. Therefore, while it may be true that the association between level of economic development and quantity and quality of environmental disclosure in petroleum firms is positive, its effect is more in national firms than international firms. For this reason, this finding does corroborate hypotheses H3a and H3b which indicate the positive influence of the level of economic development on environmental disclosure practices both in international companies and national companies. It is somewhat surprising that less impact of level of economic development on quantity of environmental disclosure is noted in this regression in 2010 for both national and international firms (b=4.640 and 2.254 respectively).

Table 6-19: Influence of the LED on QTED and QLED

Panel A: quantity						
	National Corporation			International Corporation		
Year	B	*t*	p-value	B	*t*	p-value
2008	5.358	6.449	0.000	5.200	11.247	0.000
2009	8.471	11.627	0.000	3.922	3.241	0.002
2010	4.640	6.849	0.000	2.254	1.646	0.003
Panel B: Quality						
	National Corporation			International Corporation		
Year	B	*t*	p-value	B	*t*	p-value
2008	0.348	2.958	0.005	0.148	3.169	0.002
2009	0.765	7.990	0.000	0.128	1.458	0.048
2010	0.363	4.956	0.000	0.137	1.321	0.001

6.7 Discussion of Findings

The aim of this study is to evaluate the extent of differences between quantity and quality of environmental disclosure and between national oil and gas corporations and international oil and gas corporations through a comprehensive examination of their annual reports over the three years 2008, 2009 and 2010. Therefore, this study has sought to answer the research questions to achieve the purpose of the study. Research questions included in this study are:

RQ1: To what extent are there differences between national oil and gas corporations (NOGCs) and international oil and gas corporations (IOGCs) in regard to the quantity of environmental disclosure (QTED) and quality of environmental disclosure (QLED) in their annual reports?

RQ2: What are the factors that explain variances in environmental disclosure practices (EDPs) between national oil and gas corporations (NOGCs) and international oil and gas corporations (IOGCs) in oil sectors?

RQ 3: What are the differences between national oil and gas corporations (NOGCs) and international oil and gas corporations (IOGCs) in regard to the disclosure of environmental data in their annual reports and the quality of that data?

6.7.1 Environmental Disclosure in National and International Oil and Gas Corporations

As mentioned earlier, published data is analysed to answer the research questions, namely, whether national and international firms provided environmental information in their annual reports, the pattern of environmental disclosures in oil and gas corporate annual reports, whether international companies revealed more environmental information in annual reports than national corporations in the years 2008, 2009 and 2010, which external factors influenced environmental disclosures in corporations' annual reports operating in the oil and gas sector in the Arab region, and what the content analysis of oil and gas corporate annual reports revealed about

environmental information. Findings related to each question will be summarised in turn.

In each year of the study at least some of the sampled companies disclosed environmental information in their annual reports. Over the period studied, environmental disclosure has increased in both the number of international and national companies providing environmental information in their annual reports, and in the quantity of environmental disclosure by word count. The number of companies providing disclosures has risen over the study period with regard to national corporations. The quantity of words used in disclosures also increased. Initially, quantity of environmental disclosure is below 44 words on average for national oil and gas corporations and is 225 for international oil and gas corporations in 2008, but rose to above 243 words on average for national oil and gas corporations and 598 for international oil and gas corporations in the last year of the study. Environmental disclosures by listed international oil and gas corporations appear to be more common than in other national oil and gas corporations. Likewise, quality of environmental disclosure in oil and gas corporations has increased in national oil and gas corporations and international oil and gas corporations, but the increase for international oil and gas corporations is more than for national oil and gas corporations. In view of the results contained in chapter 5, the quality of environmental disclosure in national oil and gas corporations is 31 on average in 2008; while it is 34 on average for international oil and gas corporations. This value increased for both national oil and gas corporations and international oil and gas corporations in 2010. Notable increases in quantity and quality of environmental disclosure is greater in international oil and gas corporations than in national oil and gas corporations, which is consistent with the findings of many recent studies that indicated environmental disclosure occurs in developed countries more than in developing countries (Al-Gamrh 2010; Elijido-Ten 2009; Ismail & Ibrahim 2012; Suttipun 2012).

Although the quantity of environmental disclosure increased slightly in national oil and gas corporations, the environmental information contained in their annual reports

is still more descriptive than quantitative, contrary to international oil and gas corporations. This finding appears to mirror findings in other developing countries. Elijido-Ten (2004) concluded that the majority of Malaysian companies provided general qualitative disclosures, while few companies provide quantitative information. Othman and Ameer (2009) indicated that most disclosure was seen to be qualitative rather than quantitative in the companies surveyed. Environmental information contained in the annual reports of national oil and gas corporations centred on environmental activities and environmental policies and awards. In regard to international oil and gas corporations, environmental information tends to be mostly quantitative information where it centres on the amount of oil spills, emissions and compensation. This result corroborates quality of environmental disclosure by both national oil and gas corporations and international oil and gas corporations where the results shown in Tables 5-13 and 5-14 conclude that the quality of environmental disclosure in international oil and gas corporations is higher than national oil and gas corporations. For example, some national oil and gas corporations in countries such as Libya, Algeria, Bahrain and Tunisia showed a decline in quality of environmental disclosure compared with international companies such as BP and Exxon Mobil who have petroleum activities in those countries.

The other point of particular interest is that country of origin is a determinant of environmental disclosure practices. This research study used petroleum corporations from 18 countries of which 9 are from the Arab region and the remainder are from different regions but all of them are from developed regions such as America, Australia, Japan and Europe. The results of independent t-test, as shown in Table 5.18, indicate that the quantity and quality of environmental disclosure in the Arab region is different to other regions. This finding supports previous research into this area which indicated that in companies from developed countries disclosure is markedly different to companies in countries with less growth. For example, Williams (1999) found that voluntary environmental disclosure in Australian firms is higher than firms in Singapore, Malaysia, and The Philippines.

The results of this study shown a marked difference in disclosure between firms in the same region—and demonstrate the impact that country of origin has on disclosure practices. Through the results of the analysis of independent t-test for national oil and gas corporations in the Arab region, it can be noted that quantity and quality of environmental disclosure varies from one country to another. For example, Saudi companies are more informative than other countries. Similarly, disclosure in Tunisia is different than disclosure in Algeria. This result is consistent with the few studies that addressed disclosure in Arab countries including that of Jahamani (2003) who found a difference in disclosure between Jordanian companies and UAE companies. Likewise, Al-Janadi et al. (2011) found a difference in the quality of disclosure among Saudi Arabia and UAE companies.

Analogous to national oil and gas corporations, environmental disclosure practices vary between international oil and gas corporations, despite these firms operating in the same industry and belonging to the same region. For example, it can be noted that Russian oil companies provide less disclosure in annual reports compared with similar corporations in Japan. On the other hand, the results indicate that environmental disclosure practices in corporate America are the highest among the other companies. Differences in environmental disclosure practices between the countries of international oil and gas corporations in this study are consistent with the results of other studies which have been conducted to compare environmental disclosure practices among developed countries (Aerts et al. 2008; Buhr & Freedman 2001; Chen & Bouvain 2009; Holland & Boon Foo 2003).

In view of the above, this study has addressed environmental disclosure practices in terms of quantity and quality of environmental disclosure in national oil and gas corporations and international oil and gas corporations and shows that environmental disclosure practices vary between these firms significantly. This variation in environmental disclosure practices includes level of disclosure and quality of disclosure, as well as type of environmental disclosure items. Previous discussion presented an overview of these practices and the extent of the difference in order to answer the first research question. Notwithstanding the importance of the influence

of the country of origin on these practices, to provide a logical explanation for these differences this thesis has sought to examine variables that may likely contribute to an explanation of the differences between national oil and gas corporations and international oil and gas corporations. The following section highlights these variables with reference hypotheses that have been developed in this study and clarifies these differences.

6.7.2 Factors Influencing Variation in Environmental Disclosure Practices

Multiple regression techniques have been used to determine the effect of a number of independent variables on environmental disclosure practices in national oil and gas corporations and international oil and gas corporations in the Arab region. This section provides a discussion of the results derived from the analysis of influential factors in quantity and quality of environmental disclosure. As discussed in Chapter 4, it has developed the hypotheses of this study based on three national factors as independent variables affect the quantity and quality of environmental disclosure as dependent variables in this study. Table 6-18 presented a summary of the hypotheses assumed in this study and subsequently measured and examined. Each independent variable is associated with two hypotheses where the first hypothesis is related to quantity of environmental disclosure and second hypothesis is related to the quality of environmental disclosure. These variables were scrutinised in more depth to test their influence on quantity and quality of environmental disclosure in order to explain the differences between national oil and gas corporations and international oil and gas corporations.

Table 6-20: Acceptance/Rejection of All Hypotheses

Dependent variables	Independent variables	Hypothesis	Description	Accepted /rejected
QTED	PCS	H1a	There is a negative association between the level of political and civil repression and the quantity of environmental disclosure presented in the annual reports of oil and gas companies both in national organisations and international organisations.	Accepted
QLED		H1b	There is a negative association between the level of political and civil repression and the quality of environmental disclosure presented in the annual reports of oil and gas companies both in national organisations and international organisations	Accepted
QTED	LS	H2a	There is significant association between the type of legal system and the quantity of environmental disclosure in annual reports of oil and gas corporations operating in Arab petroleum exporting countries both in national organisations and international organisations.	Accepted
QLED		H2b	There is significant association between the type of legal system and the quality of environmental disclosure in annual reports of oil and gas corporations operating in Arab petroleum exporting countries both in national organisations and international organisations.	Accepted
QTED	LED	H3a	There is a positive association between the level of economic development and the quantity of environmental disclosure presented in annual reports of oil and gas corporations operating in Arab petroleum exporting countries both in national organisations and international organisations.	Accepted
QLED		H3b	There is positive association between the level of economic development and the quality of environmental disclosure presented in annual reports of oil and gas corporations operating in Arab petroleum exporting countries both in national organisations and international organisations.	Accepted

6.7.2.1 Political and Civil System (PCS)

Political and civil system has been used to examine its effect on quantity and quality of environmental disclosure in both national oil and gas corporations and international oil and gas corporations over the three years of study. The results of these tests are contained in the various tables in this chapter. Overall, the summary of results contained in Table 6-15 indicates that political and civil system impact differently on both national oil and gas corporations and international oil and gas corporations. In regard to national oil and gas corporations, the association is statistically significant between political and civil system and quantity and quality of environmental disclosure but it is negative, which suggests that the restrictions imposed by governments on political and civil freedom affect the practices of companies in those countries. For example, the political system in Libya during the study period imposed restrictions on public freedom by controlling all aspects of the country, whether political or economic, which has one of the most enigmatic political systems in the world (Pargeter 2012; Vandewalle 2011). Similarly, what applies to Libya applies to both Tunisia and Egypt. Although there are government institutions in Tunisia and Egypt, political freedom is under the control of the head of state and there is no role for government institutions in politics (Hassan & Quarter 2011; Wagner 2012). Surprisingly, freedom index in other Arab countries such Saudi Arabia is not much different from Libya, but the environmental disclosure practices vary between them.

On the other hand, with respect to international oil and gas corporations, the indices of political and civil freedom in their countries range between 1 and 2, indicating a high score of freedom in those countries. The high score of freedom in these countries reflects positively on the accounting practices of companies in terms of providing information and including environmental information. The findings of a positive association between political and civil system and an increase in the disclosure of environmental information are consistent with previous research. Williams (2004), according to empirical results in his study, concluded that association between amount of disclosure and a nation’s degree of political and civil

openness is a strong positive. Furthermore, it is encouraging for this finding that disclosure in Russian international oil and gas corporations compared with other international oil and gas corporations is low where the index of political and civil freedom varies compared to other countries of international oil and gas corporations.

Černe (2009) reported that one of the important factors affecting the accounting system and reporting system alike is the country's political system. In the current study, comparisons with findings of previous studies (e.g. Adams 2002; Aribi 2009; Hibbitt & Collison 2004) show that the results of this research provide empirical support for conclusions to hypotheses developed on this matter in terms of quantity and quality of environmental disclosure demonstrating a positive correlation with the political system for international oil and gas corporations in contrast to national oil and gas corporations, where association is a negative.

6.7.2.2 Legal System (LS)

It is somewhat surprising that results of association between legal system and quantity and quality of environmental disclosure are somewhat unclear. But what can justify these findings is the diversity of legal systems applicable in the countries of international oil and gas corporations and national oil and gas corporations. The results of previous literature that examined the impact of the LS on accounting practices and environmental disclosure addressed common law and civil law and found variation in financial and environmental disclosure among companies in accordance with legal system, whether common law or civil law.

For national oil and gas corporations, the legal system applicable in those countries' corporations is Islamic Sharia law and mixed law (common and Islamic law and CIVISL). In reviewing the literature, no study was found that dealt with the association between mixed law and quantity and quality of environmental disclosure. Therefore, contrary to expectations, this study did not find a significant difference between uses of common law or civil law with Islamic Sharia law in influencing environmental disclosure practices in national oil and gas corporations. However, it turns out that the use of common and Islamic law has impacted more negatively on

environmental disclosure practices than the use of civil and Islamic Sharia law in relation to the environmental disclosure practices in companies that use Islamic Sharia law only.

With regard to international oil and gas corporations, the legal system has impacted positively on the quantity and quality of environmental disclosure alike over the three years. Interestingly, the correlation between quantity of environmental disclosure and legal system is statistically significant in 2008, 2009 and 2010. The present findings seem to be consistent with other research which found that the legal system is positively associated with environmental disclosure practices. Furthermore, it is also noticeable that the quantity of environmental disclosure is greater in relation to the IOGC countries that use common law than those companies that belong to countries that apply civil law. In view of the above, the results of multiple regressions, as shown in Table 6-16, are consistent with the results of other studies which concluded that the legal system is positively associated with environmental disclosure practices. In contrast, despite the positive link between the quality of environmental disclosure and the legal system, it does not show a statistically significant effect during the study period.

Muniandy and Ali (2012) stated that according to prior studies the nature of the legal system is one of the factors that affect countries' financial reporting systems. Moreover, Williams (2004) reported that legal system plays a significant role in accounting practices. The results of this study have provided support to the results of previous studies in terms of legal system having a positive effect on accounting practices through results related to international oil and gas corporations associated with common law and civil law. As for the national oil and gas corporations associated with Islamic Sharia law or mixed law, it is difficult to explain the negative correlation. This conclusion is unexpected; despite the fact Islamic Sharia law encourages disclosure in companies and various international banks have adopted Islamic Sharia law in many of their transactions.

6.7.2.3 Level of Economic Development (LED)

According to the conclusions of many previous studies that have adopted economic factor through the level of economic development in nations as one of the important determinants in the development of accounting and reporting practices, the association between economic development and level of disclosures and reporting practices is positive (Al-Tuwaijri et al. 2004; Hardaker & Masoud 2012; Williams 2004; Xiao et al. 2005). Therefore, the results of this study, as shown in Table 6-17, indicate a positive relationship between level of economic development with quantity and quality of environmental disclosure. Effect of economic development on quantity and quality of environmental disclosure in accordance with tests of multiple regressions is statistical significantly over the three years for both national oil and gas corporations and international oil and gas corporations.

But what is surprising in the results of this study is the extent of the impact of economic development on environmental disclosure practices in both international oil and gas corporations and national oil and gas corporations. It is noted that the positive effect of the level of economic development on the quantity and quality of environmental disclosure in national oil and gas corporations is more than in international oil and gas corporations. For example, in 2009 the impact of economic development on the quantity of environmental disclosure for national oil and gas corporations (B=8.471) equivalent doubled from what it is in relation to the international oil and gas corporations (B=3.922). Therefore, this result seems to be contrary to the results of previous studies (Haider 2012; Jorgensen & Soderstrom 2006; Xiao et al. 2005) that pointed to high level of economic development having more effect on accounting practices than low level of economic development. For example, Xiao et al. (2005) concluded that corporate social and environmental disclosure in the UK is higher than in HK based on the difference in level of economic development between the UK and HK. Accordingly, through the statistical description of the data, as shown in Table 6-1, the Index of Economic Freedom used to determine the level of economic development is higher for international oil and gas corporations than it is in relation to Arab countries which belong to national oil

and gas corporations. Moreover, and surprisingly, although index of economic freedom has increased for most surveyed countries over the three years, impact of level of economic development on quantity and quality of environmental disclosure decreased in 2010, whether for national oil and gas corporations or international oil and gas corporations.

Overall, it is difficult to conclude the reasons for the impact of level of economic development on quantity and quality of environmental disclosure being greater in national oil and gas corporations than international oil and gas corporations. This discrepancy may be due to the increased role undertaken by national oil corporations (NOCs) in the economic development in their countries. Thus, these companies have taken their place in the global oil industry where many of the NOCs have expanded their petroleum activities beyond national borders. Moreover, this decrease in effect of level of economic development may be explained partly in terms of the exacerbated global financial crisis. On the whole, the default conclusion developed about the level of economic development and its impact on the quantity and quality of environmental disclosure is consistent with findings of most previous studies, but its influence is greater in international oil and gas corporations than national oil and gas corporations. Thus, according to the results of the regression, hypotheses H3a and H3b are accepted.

6.8 Summary

As an extension of chapter five, this chapter has provided empirical analysis for the variables that assist in providing explanations for differences in environmental disclosure practices between national and international companies across national borders in Arab Countries Petroleum Exporting. Furthermore, this chapter analysed the impacts of political and civil systems, legal system and level of economic development on quantity and quality of environmental disclosure using a sample of oil corporations operating in the oil sector in Arab petroleum exporting countries. An addition, this chapter also summarised the results derived from the analysis of the discussion to reach the interpretation of the impact of national factors on environmental disclosure practices in oil companies. Results of regression analysis

indicated a significant association between these factors and quantity and quality of environmental disclosure.

Results of the regression analysis of the variables show a significant association between the quantity and quality of environmental disclosure and external national factors. Although the association is negative, regardless of years of study, they reveal more impact on international oil and gas corporations than national oil and gas corporations with the exception of the correlation of level of economic development. This indicates that the level of economic development plays a key role in assuring high quality and quantity reporting and in improving disclosure of the company to society. Thus, the economic openness of both national and international companies contributes to environmental disclosures in annual reports.

Although this study is restricted to three years, the contribution of this research can be summarised as introducing a pilot study which is considered the first in the accounting literature related to the Arab region concerned with comparing national and international oil companies. Additionally, it is an extension of previous research which addressed comparison of environmental disclosure practices in many countries and the impact of external factors on improving disclosure. Furthermore, it provides further knowledge and insights to those interested in the oil industry in the Arab region in order to improve data on environmental activities.

7.0 CHAPTER SEVEN: CONCLUSIONS

The main objective of this closing chapter is to summarise the basic results of this thesis and provide empirical evidence of the impact of national factors and their contribution in the interpretation of the difference in environmental disclosure practices among international oil companies and national oil and gas companies operating in the oil sector. In addition, it provides an overview of the theoretical framework using stakeholder theory and institutional theory to assist in explaining these differences. It also presents some limitations to the study and then provides suggestions for future studies in this field in general and the Arab region specifically.

This thesis has explored environmental disclosure practices within corporations operating in the oil sector. One of the most oil rich regions in the world was chosen to be a suitable ground for testing and analysis of the companies involved. This region included nine Arab petroleum countries, namely: Algeria, Bahrain, Egypt, Kuwait, Libya, Qatar, Saudi Arabia, Tunisia and the UAE. Survey corporations included national oil and gas companies belonging to these countries and international oil and gas corporations operating in these countries and belonging to developed countries namely: Australia, Canada, France, Germany, Italy, Japan, Russia, UK and USA. Annual reports of 2008, 2009 and 2010 were analysed in order to examine the quantity and quality of environmental disclosure contained in annual reports. In total 444 annual reports were reviewed.

Content analysis and environmental disclosure index were used to measure the quantity and quality of environmental disclosure in order to ascertain the levels of environmental disclosure practices between national and international corporations. Both these techniques are widely used in accounting literature, in particularly social and environmental studies. Quantity and quality of environmental disclosure were used as dependent variables while factor variables were used as independent variables. In this research study, multiple regressions were applied to test the extent of influence of national variables on quantity and quality of environmental disclosure.

The results detailed in chapters 5 and 6 describe the substantial differences in environmental disclosure practices between international and national oil companies. One of the more significant findings to emerge from this study is that the country of origin determines environmental disclosure practices implemented by corporations. Therefore, it is of paramount importance to determine whether substantial differences in environmental disclosure practices exist between national oil and gas corporations and international oil and gas corporations. This research study has applied a set of statistical tests on a number of factors that could affect environmental disclosure practices in order to examine the assumptions presumed in this regard. Accordingly, through the assumptions set out in Chapter 4, it is possible to describe the relationship between quantity and quality of environmental disclosure practices in oil companies operating in the oil sector in Arab countries and the variables that could explain the underlying reasons for the differences between national oil and gas corporations and international oil and gas corporations.

7.1 Overview of Research Study

Displaying the environmental activities of companies in recent times is the result of the growing interest in the concept of environmental disclosures over more than three decades. Subsequently, a wide range of studies on environmental disclosures have been conducted over the past three decades. The purpose of the present study is to provide a framework that explains the environmental disclosure practices on the basis of national factors in the country. The study reviewed the literature that examined the environmental disclosure practices in different countries. In accordance with the existing writings, stakeholder theory and institutional theory are considered the most important theories that explain environmental disclosure practices in companies. Based on these theories, environmental disclosure practices in companies are the result of pressure from stakeholders, well as institutional pressures from other companies in the same sector. In addition, the institutions are operating within a framework surrounded by many of the systems affecting these practices within institutions. Accordingly, this study provided a theoretical framework for the systems surrounding companies in order to understand their impact on environmental

disclosure practices within companies. This presentation of previous studies includes two general limitations of these studies.

Most of these studies on environmental disclosure practices were restricted to developed countries. Therefore, studies conducted in developing countries, including Arab countries in the region; do not give a complete picture of environmental disclosure practices because several of these studies have ignored the oil sector in Arab countries. In addition, many studies focused on the level of disclosure contained in the reports with less attention paid to the quality of environmental disclosure. Furthermore, emphasis is on annual reports to examine environmental disclosure, while other disclosure media have been ignored.

With respect to variables and determinants of environmental disclosure in Arab countries, the majority of studies have focused on the characteristics of companies as determinants of environmental disclosure practice within the company. As a result, these studies have not provided a complete picture of the relationship between the characteristics of companies, the factors surrounding the company, their impact on the company's characteristics and, subsequently, environmental disclosure practices. Moreover, the relationship between the companies operating in the same sector that provides information about their environmental activities remains unclear and ambiguous.

This study developed a framework to explain environmental disclosure practices within national companies and international companies operating in the oil sector, and presented the results of the two-part analysis as follows.

The first part examined the environmental disclosure practices in terms of quantity and quality of environmental disclosure at the country level and in accordance with national companies or international companies. Argument underlying this part of the analysis is that environmental disclosure practices in national companies from Arab countries differ from international companies operating in Arab countries. Therefore, the difference in these practices has been examined among national and international

companies in terms of the quantity and quality of environmental disclosure in annual reports.

The second part in this study examines national factors that could explain the differences in environmental disclosure practices at the level of national and international companies. Argument underlying this part of the analysis is that national factors vary between countries, thus the level of environmental disclosure practices differs between countries. Therefore, variables to examine the factors that explain the differences in environmental practices detected in a particular country are the political system and civil legal system, and level of economic development.

The essential point within this study is the quantity and quality of environmental disclosure measured in annual reports for 2009, 2008, and 2010. Content analysis technology and environmental disclosure index have been used to measure both the quantity and quality of disclosure in annual reports. Statistical methods such as multiple regression and correlation were used to analyse the relationship between national factors and environmental disclosure practices.

7.2 Summary of Findings and Conclusions

This study involves an in-depth understanding of the differences in the levels of environmental disclosure practices of major national and international oil and gas companies in developing countries' region, namely, countries in the Arab region. The results of the first part of analysis in this study were used in the second part of analysis as a dependent variable influenced by national factors.

The results of the first part of the study contained in Chapter 5 indicate that international oil and gas companies demonstrated higher levels of disclosure in annual reports during the study period. Therefore, it seems that national oil and gas companies in the Arab region are slow to adopt environmental practices compared with international companies. This study indicates the presence of different disclosure levels among national and international companies. The results of this part of the research are consistent with the results of many other studies that indicate that

the levels of disclosure in developed countries are greater than levels of disclosure in companies in developing countries.

In terms of the quantity of environmental disclosure contained in the annual reports of the national companies, UAE and Saudi Arabia companies are superior to the rest of the companies in Arab countries in terms of quantity of environmental disclosure. In addition, the quantity of disclosure in some national companies such as Algerian and Libyan companies is still in the stage of growth. Level of low environmental disclosure for national companies is reflected in the quality of disclosure in annual reports. On the other hand, the findings show that companies in the USA and the UK have the highest quantity of disclosure in annual reports. Overall, international companies show a high level of disclosure in annual reports. Results shown in Chapter 5 indicate that the quality of disclosure in national companies is less than their counterpart international companies, in spite of both operating in the same field. This is evidenced by focusing on the elements disclosed in the annual reports. International companies tend to disclose monetary and quantitative items of environmental disclosure rather than descriptive; unlike national companies which tend towards descriptive disclosure.

In the second part of the study, national factors were tested in order to establish their impact and relationship with environmental disclosure practices. The results contained in Chapter 6 indicate that national factors of each country in this study affected the levels of quantity and quality of disclosure. Political and civil systems and the legal system in Arab countries impacted negatively on disclosure practices of the oil companies; unlike developed countries that contributed in a positive way in the disclosure practices of their companies. Thus, it can be said that the difference in disclosure practices between national and international companies is due to differences in political and civil systems and the legal system in the countries of these companies. On other hand, and interestingly, the results of the analysis of the national factors relating to level of economic development impact positively in both national and international corporations; in contrast to the political and civil system

and legal system. However, their impact on disclosure practices of national companies is greater than that of international companies.

In other words, the political and civil system has impacted positively on environmental disclosure regarding international corporations, whereas its impact is negative for national companies. The level of quantity of environmental disclosure in companies is under pressure from political openness of the political system applicable within the country and how companies respond to this pressure. Therefore, in countries that have a high level of political and civil freedom, institutions tend to pay more attention to the environment through the dissemination of information about their environmental activities to avoid pressure from society and to meet the requirements of their stakeholders.

Moreover, differences in the application of the type of legal system among countries has contributed to environmental disclosure practices in terms of the level of quantity and quality of environmental disclosure contained in annual reports. In countries that use common and civil law, environmental disclosure practices are positively affected by the legal system, unlike countries using Islamic Sharia law or mixed laws. By reference to the results of the statistical analysis, quantity of environmental disclosure in the international companies is influenced positively with their legal system, unlike national companies. Countries that apply common or civil law give a kind of liberty to their organisations in the dissemination of information regarding their activities to the public in order to maintain their legitimacy. In addition, in countries that use religion as a reference for enactment of law or those that use a combination of systems, companies face governmental pressure in the dissemination of information. In spite of the Islamic religion encouraging the exchange of information within communities for general interest, at the same time it rejects monopoly by institutions.

In contrast, level of economic development has impacted on quantity of environmental disclosure positively in both national and international companies. According to empirical results, level of economic development can be summarised as

follows. High economic level countries have a high degree of economic freedom, allowing them to increase their investment in the community. So in these countries the companies face high levels of social pressure concerning their environmental activities. This social pressure tends to be more directed to large industrial companies that have more environmentally sensitive activities. However, in spite of whether the effect of level of economic development impacts positively on national firms or international firms, results indicate its impact on national companies is greater than international companies. This result is somewhat puzzling in relation to the results of previous studies.

To summarise most of the important of points in the findings of this study, this thesis addressed the following research questions:

RQ1: *To what extent are there differences between national oil and gas corporations (NOGCs) and international oil and gas corporations (IOGCs) in regard to the quantity and quality of environmental disclosure in their annual reports?* Analysis of the results contained in Chapter 5 show that the levels of disclosure in annual reports varied greatly between national companies and international corporations. The average quantity of disclosure for national companies is 112, 127 and 136 over the three years 2008, 2009 and 2010; whereas the average for international companies is 351, 374, 387 during the same period. Moreover, there is a large discrepancy in relation to the countries, where the average disclosure of national companies is 771 in 2010, while the average for the countries of the international companies is 4219 words in 2010. In addition, the difference is also in the quality of disclosure; the average quality of disclosure in national companies is 24 in 2010 and 31 for international companies in 2010, which indicates national companies tend to provide descriptive environmental information in annual reports contrary to international companies.

RQ2: *What are the factors that explain differences between environmental disclosure practices (EDPs) in national oil and gas corporations (NOGCs) and international oil and gas corporations (IOGCs) in the oil sector?* As a result of analysis of the

relationship between the national variables and environmental disclosure practices in companies using multiple regressions, the findings suggest that the three national factors have impacted on environmental disclosure practices in national and international companies. For international companies, all national factors have positively influenced the quantity and quality of environmental disclosure contained in their annual reports. In contrast, level of economic development is the only variable that has positively impacted on the quantity and quality of environmental disclosure in the national companies, unlike political and civil system and the legal system which impacted negatively on these practices in national companies.

RQ 3: What are the differences between national oil and gas corporations (NOGCs) and international oil and gas corporations (IOGCs) in regard to the disclosure of environmental data in their annual reports and the quality of that data? This study examined 16 items of environmental disclosure based on previous studies. Foremost, two items were undisclosed in both national and international companies. Therefore, the rest of the items were disclosed in annual reports unevenly. For example, the provision of education and training was disclosed by large national companies, while items such as spill, environmental accidents, waste and environmental policies were disclosed more by international companies.

After a review of the most significant results of this study and answering the research questions related to the objectives of this study, there are some additional insights that can be highlighted:

- In general, it can be said that the level of disclosure has increased over time, reflecting growing attention to this type of disclosure by many corporations, particularly petroleum corporations. Generally, with respect to oil companies in Arab countries, this increase in the level of environmental reporting is focused on increasing the quantity of disclosure without paying the same attention to the quality of disclosure.
- In spite of the appearance of many other reports related to environmental issues, the annual report is still an important means of environmental

disclosure and it is not influenced by the growing trend to produce other types of reports.

- Despite the growing interest in environmental issues worldwide and the majority of studies focusing on environmental disclosure, it appears that descriptive information is the dominant category of environmental disclosure in annual reports of national firms.
- Compared with other studies conducted in different sectors, petroleum companies appear to be more interested in environmental disclosure than other economic sectors.
- The economic level of a given country is the most significant factor that positively determines the level of environmental disclosure practices in Arab countries.
- Using different units to measure quantity of environmental disclosure in annual reports (number of sentences, number of pages, and proportion of pages) results in differing results for disclosure, but number of words seems to provide better results.

7.3 Implications of the Research

This study is among a few recent, and mostly unpublished, studies which have empirically tested one or more aspects of the relationship between external factors, political, legal and economic systems, and environmental disclosure practices contained in annual reports of national oil and gas corporations and international oil and gas corporations; and attempts to establish to what extent these factors impact on environmental disclosure practices and contribute to the variance between national oil and gas corporations and international oil and gas corporations.

7.3.1 Theoretical Implications

As far as the researcher is aware, this study is the first comparative study of environmental disclosure practices between national oil and gas corporations and international oil and gas corporations in the Arab region. This research study provides the first detailed description of external factors influencing such practices in

national oil and gas corporations and international oil and gas corporations using political, legal and economic systems. This is also the first international comparative study, as far as researcher is aware, of environmental disclosure practices between international firms and national firms operating in the oil sector in the Arab region using the perspective of both stakeholder theory and institutional theory to measure quantity and quality of environmental disclosure.

The study adds to the literature concerning environmental disclosure practices through examining quantity and quality of environmental disclosure in international oil and gas corporations and national oil and gas corporations in the OAPEC as a means to illustrate the differences. It does this in two ways. First, it makes use of quantitative data gathered through content analysis of annual reports on environmental disclosure practices of international oil and gas corporations and national oil and gas corporations in the Arab countries belonging to the OAPEC. Although content analysis of annual reports is very common in the international comparative environmental disclosure practices literature, as far as the researcher is aware no study has used content analysis for both international oil and gas corporations and national oil and gas corporations to understand the nature of the environmental disclosure practices by petroleum corporations in different Arab country contexts. In this way, it contributes to the international comparative environmental disclosure practices literature, not only by explaining variations in environmental disclosure practices within different Arab countries but also by addressing the variations in levels of quantity of environmental disclosure in international oil and gas corporations and national oil and gas corporations. Second, it explores quality of environmental disclosure using environmental disclosure index in international oil and gas corporations to compare with national oil and gas corporations in similar industrial groups in the Arab region and concludes that quality of environmental disclosure in international oil and gas corporations operating in the same area of domestic corporations is different, although environmental policies in international oil and gas corporations are influenced by their particular country.

A review of the literature related to environmental disclosure practices in the Arab region shows that this study appears to be the first study to investigate the external factors affecting quantity and quality of environmental disclosure contained in the annual reports of oil companies operating in the oil sector in Arab petroleum exporting countries. The contribution of the oil sector to GDP in Arab petroleum exporting countries and the role of these countries in the global production of oil is one the important reasons for this study, that is, to shed light on this vital sector in Arab countries. This study filled its aim to assess the environmental disclosure practices in oil companies, whether national or international. This study provides scientific interest regarding the impact of political, legal and economic factors on environmental disclosure practices and the extent of the difference in these factors between Arab countries and the extent of their impact on the interpretation of the differences in accounting practices.

This study provides several conclusions which have implications for the accounting literature in general and accounting studies in the Arab region in particular. First, this study is an extension of previous studies on environmental disclosure practices in companies, with its focus being on one of the most important sectors in many Arab countries. Most previous studies conducted in the Arab region have focused their research on industrial and financial companies. This study has taken the oil sector as a hub to examine accounting practices in the annual reports of companies operating in this sector. Many international companies have paid great attention to investment in the oil sector; therefore, this study has sought to conduct a comprehensive examination regarding environmental disclosure practices in order to compare these practices among international and national companies.

Second, while most previous studies conducted in the Arab region focused on only one Arab country, the current study appears to be the first to compare more than one Arab oil sector countries in the Arab region with foreign companies from several countries working in the Arab region. Additionally, a comparison between international oil and gas corporations and national oil and gas corporations has given impetus morally for this study to clarify the differences in environmental disclosure

practices between companies belonging to countries classified as developing countries and companies belonging to countries classified as advanced countries. Hence, this approach for comparison between international and national corporations enhances the conclusions of this study and makes them more valid for generalisation purposes in the accounting literature.

Third, previous studies in the Arab region which examined environmental disclosure practices used organisational factors such as company size, the age of the company, and return on assets and profitability as factors that may explain these practices. This study has used political, legal and economic factors to explain the differences in environmental disclosure practices. A review of the accounting literature generally and environmental disclosure studies in particular in the Arab countries does not yield any study investigating the extent of the impact of these factors on environmental disclosure practices by oil companies. Therefore, the results of this study, which indicate positive and negative relationships between these factors and the quantity and quality of environmental disclosure in oil companies, will serve as a base for future studies and has gone some way towards enhancing understanding of relationships between external factors and quantity and quality of environmental disclosure.

7.3.2 Practical Implications

In view of the current political volatilities in the Arab region as a result of the so-called Arab Spring and the consequences of a change in the political regimes in some countries that are members of OAPEC, this study becomes important to decision-makers in both national and international oil companies who want to invest in the oil sector in Arab countries. The results of this study show the impact of the environment surrounding companies in the practise of firms' activities, thus, visibility becomes clearer for decision-makers in relation to investment in one of the most important sectors of the Arab region. In addition, the results of this study become a relevant reference to environmental protection organisations in the Arab region in order to put pressure on the governments of the Arab countries to enact legislation to protect the environment from environmental disasters and environmental incidents

resulting from petroleum activities. Moreover, managers in national corporations can use the results of this study to improve environmental disclosure practices in line with international requirements and through comparison with environmental disclosure practices in international companies. The results of this study also contribute to the provision of information for international oil companies intending to invest in the oil and gas sector in Arab countries.

These findings encourage national companies to distribute their annual reports to both internal and external stakeholders. As stakeholders in national companies are interested in environmental reporting, national companies seek to improve their reports to enhance their relationship with their stakeholders and improve their activities in line with the environmental surroundings of their operations. National oil and gas corporations may seek to find other channels such as the internet to maintain good relationships with their stakeholders. The findings of this research also increase transparency in organisations, regardless of the types of environmental information disclosed to stakeholders, including investors, governments and professional organisations interested in protecting the environment, and the public at large. These findings encourage national companies in different Arab countries to unite their efforts to apply uniform standards aimed at improving their performance.

This study identified that the surrounding systems in which countries operate have affected the substance of environmental disclosures, both in terms of the quantity of disclosure and the quality of disclosure in the annual reports of the oil companies. This study concluded that there was a positive relationship between the economic developments of the country and the quantity and quality of environmental disclosure contained in annual reports. Therefore, increasing environmental disclosure in annual reports under the index of economic development may give some economic indicators to develop oil production in firms with existence of successful environmental policies contributing to environmental conservation. On the other hand, the results of this study refer to the negative impact of the political and legal system on environmental disclosure practices in Arab countries, although some Arab countries use Islamic Sharia law which encourages the preservation of the

environment. Therefore, the current study provides an overview for decision-makers in Arab countries to enable them to improve their systems and provide an investment image for international oil companies and encourage them to increase their investment in the oil sector.

7.4 Limitations of the Study

This study has faced several limitations. In any research there are limitations and difficulties that face the researcher. Some of the limitations that faced the researcher during the period of the study are now outlined.

On the theoretical front, this research has used stakeholder theory and institutional theory as justification in explaining environmental disclosure. These are typical theories adopted by accounting researchers in the field of corporate social and environmental accounting. However, in order to apply these two theories specifically to the context of the Arab region, it is necessary to understand the required research methods. These theories have not been widely used in studies conducted in the Arab region context to explore environmental disclosure practices, as the difficulty of access to relevant information by researchers may limit the use of this theory.

Furthermore, the use of stakeholders' behaviour to understand and interpret the environmental disclosure practices represents an obstacle in this study. The absence of explanation from companies' stakeholders because of time and cost, as well as the conditions in the Arab region during the study period, has prevented access to clarification from corporations' stakeholders—whether national or international—to explain differences in such practices and the dual role of stakeholders in national companies. For example, for the national companies, the government assumes the role of administration in most national companies through the instructions and decisions that apply to companies where most national firms are dominated by government, and where the government is seen as the stakeholder of the company. Thus, most of the decisions of national companies are based on instructions from the government. From the other side, with respect to institutional theory, the imitation and routine in the interpretation of environmental disclosure practices, especially in

relation to national companies, were not enough under the monopoly of the industry by government.

On the methodology front, this study applied content analysis methodology as one of the methods in the analysis of data using number of words. Despite the widespread use of this technique in social and environmental accounting research, this technique attracts a lot of criticism. The use of number of words as a unit of measurement without other methods may contribute in strengthening subjectivity and bias in the process of analysis. In addition, this study depends on annual reports only in analysing data. Despite the importance of the annual reports of companies and their widespread use by many accounting researchers, annual reports are no longer considered sufficient in the analysis of environmental practices in the presence of other reports such as environmental reports and sustainability reports, as well as the use of other channels for the dissemination of environmental disclosure practices in many companies such as websites and brochures.

Empirically, the study is concerned with industrial petroleum companies in the Arab region and their reports for the period 2008-2010. Hence, any generalisations might be limited merely to petroleum companies, the defined time and the obtained reports. Moreover, this study is limited to companies that publish their annual reports on their websites, thus other companies that do not have annual reports online are excluded—and has contributed to the sample of national companies being small. Furthermore, the time period of this study is restricted to three years, which may affect the explanation of disclosure behaviour. That is, environmental accidents may need a longer time for their influence to be processed and analysed by firms and then to be reflected in their annual reports. For example, oil spills take a long time to control and to process their impact on surrounding environments and to initiate lawsuits, as was the case with the BP oil spill in 2010.

7.5 Future Research Studies

Although this study used stakeholder theory and institutional theory to explain environmental disclosure practices in the petroleum industry, future research into

practices in oil and gas corporations need to further expand the use of these theories. However, the nature of the oil industry, coupled with the role of international companies in the industry and their impact on the global economy and policies of many countries, and the nature of the national companies in the oil industry, suggests the use of other theories such as the theory of political economy and theory of legitimacy. Future research could also be directed to the expansion of the use of stakeholder theory and institutional theory to provide justification for environmental disclosure practices in the oil industry in Arab countries and to further study the differences between national and international companies in the Arab region.

This study focused on annual reports to examine differences in environmental disclosure practices. Future study should use other reports such as environmental and sustainability reports, and promotional leaflets and websites to conduct a comparison between national companies and international corporations. In addition, most studies in the Arab region have been conducted in industrial firms and financial companies; this study was conducted in the petroleum industry, thus, studies in future should combine various sectors for comparison in terms of differences in environmental disclosure practices.

On the other hand, this study examined environmental disclosure practices during the three years 2008, 2009 and 2010. These years preceded the so-called Arab Spring that occurred in many Arab countries such as Tunisia, Egypt and Libya. Therefore, new studies should focus on the years following the Arab Spring. The Arab Spring resulted in changes in the political systems of many Arab countries, as well as impacting politically and/or economically on other countries in the region. This study used the regulations surrounding corporate 'political, legal and economic' factors prior to the Arab Spring as explanatory factors for differences in environmental disclosure practices. Future study should focus on the extent of change that has occurred in these regimes and the resultant change in environmental disclosure practices. Furthermore, based on some of the results of this study, a significant contradiction was observed in disclosure practices between companies, whether international or national, regardless of the method used in the analysis. For example,

there is a fundamental difference in practices between USA companies and Australian companies operating in the Arab region. This paradox opens the door for future studies to examine the differences in accounting practices, including environmental disclosure, and for more in depth research into this phenomenon.

7.6 Conclusion

In this concluding chapter, an overview of the research study is presented and a summary of the major findings of the research, including the extent of influence of national factors on environmental disclosure practices in petroleum corporations. Theoretical and practical implications are offered in this chapter followed by limitations of the study and directions for future research.

Overall, the main aim of this study has been to examine the environmental disclosure practices of petroleum corporations operating in Arab petroleum exporting countries. At the heart of this enquiry is the question of differences in these practices between national and international oil and gas corporations.

Two theories have been used in this study—stakeholder theory and institutional theory—in order to give a theoretical interpretation of environmental disclosure practices in companies operating in the same sector with the difference in the stakeholder group. Finally, based on a wide range of research and studies in the accounting literature conducted in many countries in recent years, this study provided an overview of these studies and findings in order to bridge the gap in accounting research in the Arab region.

Content analysis and the environmental disclosure index were used to measure the quantity and quality of environmental disclosure. Three years, 2008, 2009 and 2010, were covered by this study where it examined 444 annual reports for 51 national oil and gas corporations and 98 international oil and gas corporations. National corporations are from 9 Arab countries which are members of the OAPEC. International corporations are from developed countries, namely, Australia, Canada,

France, Germany, Italy, Japan, Russia, UK and USA. These countries have the largest investments in the Arab countries, especially in the oil sector.

The study suggests that international companies do disclose environmental information in their annual reports more than national corporations. More importantly, there has been an increase in the level of environmental information disclosed by these petroleum companies in the years 2008, 2009 and 2010. Findings indicate that there was an increase in both the number of national companies providing environmental information and the amount of disclosures. There was an increase in environmental disclosures after the spill oil in Mexico gulf disaster in 2010. However, the difference in environmental disclosure practices lies in the quantity and quality of environmental disclosure contained in annual reports where findings indicate that environmental disclosure in surveyed companies and environmental disclosure patterns in countries of national companies are dissimilar to those in countries with international corporations.

Furthermore, this research study sought to explain these differences in environmental disclosure practices via tests of national factors such as political and civil system, legal system and level of economic development. Multiple regressions have been used to analyse the extent of influence these factors have on environmental disclosure practices. Findings show that the quantity and quality of environmental disclosure were affected by national factors. The differences in national factors between countries have contributed to explaining variations in environmental disclosure between national and international corporations based on national factors of a country. Furthermore, results of analysis of multiple regressions have shown that all national factors are positively associated with environmental disclosure in international oil and gas corporations while level of economic development is positively associated in national oil corporations.

8.0 References

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9.0 Appendices

9.1 Appendix 1: Summary of Institutional Theory applicable to the MNC Context

Topic Descriptions	Exemplary References	Main Institutional Ideas
1) Institutional profile/institutional distance Country institutional profile is conceptualized as a three-dimensional construct, including regulatory, cognitive, and normative dimensions Country institutional dimensions are practice or issue specific (e.g., quality management, entrepreneurial activity) Institutional distance is defined as the difference or similarity between the institutional profiles (i.e., regulatory, cognitive, normative) of two countries on a particular issue.	Busenitz, Gomez, & Spencer (2000), Eden & Miller (2004), Kostova& Roth (2002), Xu & Shankar (2002).	Institutional arrangements are mostly country specific since they evolve within the boundaries of the socioeconomic environment and become established as a result of social interactions Institutions and institutional environments are composed of three "pillars": regulatory, cognitive, and normative Institutional arrangements define the social context of organisations and shape organisational actions.
2) Institutional change/transition economies Large-scale institutional transformation defines transition economies Transitional institutional environments are characterized by ● Institutional upheaval ● Institutional baggage ● Institutional imperfection ● Corruption and "state capture" ● Different stages in the transition process Transitional institutional environments require certain types of strategies and lead to particular firm behaviours (e.g., bribes)	Hoskisson, Eden, Lau, & Wright (2000), Newman (2000), Peng (2000, 2002, 2003), Roth &Kostova (2003b), Wright, Filatotchev, Hoskisson, & Peng (2005).	Change and transformation of institutional systems is a process following distinct stages characterized by a different degree of maturity and stability of the new institutional arrangements Economic action of individuals and organisations is institutionally determined: ● Institutional patterns from the previous system continue to be observed owing to persistence and inertia of institutions ● When the new institutions are not fully developed, proliferation of organisational patterns may be observed.
3) National institutional systems Comparative capitalism and economic action National (and institutional) origin of business systems Institutional features of different types of business systems and comparative firm characteristics (e.g., ownership patterns, state coordination, trust in formal institutions, dominant firm type, growth patterns) Comparative capitalism approach to	Casper & Whitley (2004), Morgan, (2003), Morgan & Whitley (2003), Quack, Morgan, & Whitley (2000), Whitley (2000, 2003).	Determinism of (national) institutional environments in shaping business systems Within institutional environment (country) similarity (i.e., isomorphism) of business systems and organisational characteristics.

Topic Descriptions	Exemplary References	Main Institutional Ideas
the issue of MNC corporate governance Extent of MNC embeddedness/disengagement with national institutional systems		
4) Institutional constraints on MNCs Institutional environments determine the most effective MNC strategies and structures: ● Entry mode decisions in international expansion ● Partner selection in international alliances ● Country's propensity for entrepreneurial activity ● Firm strategic choices (e.g., diversification)	Child & Tsai (2005), Dacin, Oliver, & Roy (in press), Davis, Desai, & Francis (2000), Flier, Van den Bosch, &Volberda (2003), Henisz & Delios (2001), Hitt, Ahlstrom, Dacin, Levitas, & Svobodina (2004), Kogut, Walker, & Anand (2002), Lu (2002), Yiu & Makino (2002)	Determinism of (national) institutional environments in shaping organisations' practices and structures through institutional pressures for isomorphism (National) institutional environments can be more or less supportive of particular types of economic activity (e.g., entrepreneurship), depending on the established regulatory, cognitive, and normative institutional arrangements

Topic Descriptions	Exemplary References	Main Institutional Ideas
5) Diffusion, adoption, and institutionalization of organisational practices and structures across units within the MNC and across national borders Institutional explanation of cross-country differences in MNC practices and structures Institutional explanation of cross-border diffusion, dissemination, convergence/divergence of organisational practices Institutional constraints on transferring organisational practices across national borders; "permeability" of borders Multiple and complex institutional environments from which MNC subunits "draw" their practices and structures Handling of conflicting institutional pressures on MNCs and MNC subunits from the internal organisational environment and their multiple external environments; the role of managers (limited active agency) Relational context within MNCs and context's role in the institutional process of transfer and diffusion of organisational practices within the firm.	Eden, Dacin, & Wan (2001), Guler, Guille´n, & Macpherson (2002), Kostova & Roth (2002)	Determinism of national institutional environments in shaping organisations' practices and structures by enforcing isomorphism through coercive, mimetic, and normative mechanisms National institutional environments can be more or less supportive of particular types of certain organisational practices As a particular practice becomes fully institutionalized, it assumes a "taken-for- granted" status; developed institutional environments (external as well as internal) are characterized by clear expectations for firms' actions New emerging practices are brought in by outsiders or "peripheral/marginal" organisations that are successful; others start mimicking them, motivated by their increasing legitimacy; as a result, new patterns of organisational action become shared and gradually institutionalized
6) MNCs, MNC subunits, and host country institutional environments Liability of foreignness of MNCs in host countries: ● Sources and determinants of liability of foreignness ● Dynamics of liability of foreignness over time ● Strategies for overcoming liability of foreignness ● Consequences of liability of foreignness ● Measurement of liability of foreignness MNC legitimacy: ● Nature and distinctiveness of MNC legitimacy ● Factors of legitimacy of MNCs and MNC subunits	Lawrence, Hardy, & Phillips (2002), Levy & Egan (2003), Mezias (2002), Miller & Richards (2002),	(National) institutional environments grant legitimacy of organisations based on organisational compliance with institutional requirements Institutional requirements are established within the boundaries of an organisational field (class); organisations can be part of multiple organisational fields Legitimacy is necessary and critical for organisational survival Legitimacy is achieved through becoming isomorphic as a result of adopting practices and structures that are institutionalized in a particular environment (field).

9.2 Appendix 2: Form 10K

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 GENERAL INSTRUCTIONS

A. Rule as to Use of Form 10-K.

1. This Form shall be used for annual reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o (d)) (the "Act") for which no other form is prescribed. This Form also shall be used for transition reports filed pursuant to Section 13 or 15(d) of the Act.

2. Annual reports on this Form shall be filed within the following period:

a. 60 days after the end of the fiscal year covered by the report (75 days for fiscal years ending before December 15, 2006) for large accelerated filers (as defined in 17 CFR 240.12b-2):

b. 75 days after the end of the fiscal year covered by the report for accelerated filers (as defined in 17 CFR 240.12b-2); and

c. 90 days after the end of the fiscal year covered by the report for all other registrants.

3. Transition reports on this Form shall be filed in accordance with the requirements set forth in Rule 13a-10 (17 CFR 240.13a-10) or Rule 15d-10 (17 CFR 240.15d-10) applicable when the registrant changes its fiscal year end.

4. Notwithstanding paragraphs (2) and (3) of this General Instruction A., all schedules required by Article 12 of Regulation S-X (17 CFR 210.12-01 - 210.12-29) may, at the option of the registrant, be filed as an amendment to the report not later than 30 days after the applicable due date of the report.

B. Application of General Rules and Regulations.

1. The General Rules and Regulations under the Act (17 CFR 240) contain certain general requirements which are applicable to reports on any form. These general requirements should be carefully read and observed in the preparation and filing of reports on this Form.

2. Particular attention is directed to Regulation 12B which contains general requirements regarding matters such as the kind and size of paper to be used, the legibility of the report, the information to be given whenever the title of securities is required to be stated, and the filing of the report. The definitions contained in Rule 12b-2 should be especially noted. *See also* Regulations 13A and 15D.

C. Preparation of Report.

1. This form is not to be used as a blank form to be filled in, but only as a guide in the preparation of the report on paper meeting the requirements of Rule 12b-12. Except as provided in General Instruction G, the answers to the items shall be prepared in the manner specified in Rule 12b-13.

2. Except where information is required to be given for the fiscal year or as of a specified date, it shall be given as of the latest practicable date.

3. Attention is directed to Rule 12b-20, which states: "In addition to the information expressly required to be included in a statement or report, there shall be added such further material information, if any, as may be necessary to make the required statements, in the light of the circumstances under which they are made, not misleading."

D. Signature and Filing of Report.

1. Three complete copies of the report, including financial statements, financial statement schedules, exhibits, and all other papers and documents filed as a part thereof, and five additional copies which need not include exhibits, shall be filed with the Commission. At least one complete copy of the report, including financial statements, financial statement schedules, exhibits, and all other papers and documents filed as a part thereof, shall be filed with each exchange on which any class of securities of the registrant is registered. At least one complete copy of the report filed with the Commission and one such copy filed with each exchange shall be manually signed. Copies not manually signed shall bear typed or printed signatures.

2. (a) The report must be signed by the registrant and on behalf of the registrant by its principal executive officer or officers, its principal financial officer or officers, its controller or principal accounting officer, and by at least the majority of the board of directors or persons performing similar functions. Where the registrant is a limited partnership, the report must be signed by the majority of the board of directors of any corporate general partner who signs the report.

   (b) The name of each person who signs the report shall be typed or printed beneath his signature. Any person who occupies more than one of the specified positions shall indicate each capacity in which he signs the report. Attention is directed to Rule

12b-11 (17 CFR 240.12b-11) concerning manual signatures and signatures pursuant to powers of attorney.

3. Registrants are requested to indicate in a transmittal letter with the Form 10-K whether the financial statements in the report reflect a change from the preceding year in any accounting principles or practices, or in the method of applying any such principles or practices.

E. Disclosure With Respect to Foreign Subsidiaries.

Information required by any item or other requirement of this form with respect to any foreign subsidiary may be omitted to the extent that the required disclosure would be detrimental to the registrant. However, financial statements and financial statement schedules, otherwise required, shall not be omitted pursuant to this Instruction. Where information is omitted pursuant to this Instruction, a statement shall be made that such information has been omitted and the names of the subsidiaries involved shall be separately furnished to the Commission. The Commission may, in its discretion, call for justification that the required disclosure would be detrimental.

F. Information as to Employee Stock Purchase, Savings and Similar Plans.

Attention is directed to Rule 15d-21 which provides that separate annual and other reports need not be filed pursuant to Section 15(d) of the Act with respect to any employee stock purchase, savings or similar plan if the issuer of the stock or other securities offered to employees pursuant to the plan furnishes to the Commission the information and documents specified in the Rule.

G. Information to be incorporated by Reference.

1. Attention is directed to Rule 12b-23 which provides for the incorporation by reference of information contained in certain documents in answer or partial answer to any item of a report.

2. The information called for by Parts I and II of this form (Items l through 9A or any portion thereof) may, at the registrant's option, be incorporated by reference from the registrant's annual report to security holders furnished to the Commission pursuant to Rule 14a-3(b) or Rule 14c-3(a) or from the registrant's annual report to security holders, even if not furnished to the Commission pursuant to Rule 14a-3(b) or Rule 14c-3(a), provided such annual report contains the information required by Rule 14a-3. **Note 1.** In order to fulfill the requirements of Part I of Form 10-K, the incorporated portion of the annual report to security holders must contain the information required by Items 1-3 of Form 10-K; to the extent applicable.

Note2. If any information required by Part I or Part II is incorporated by reference into an electronic format document from the annual report to security holders as provided in General Instruction G, any portion of the annual report to security holders incorporated by reference shall be filed as an exhibit in electronic format, as required by Item 601(b)(13) of Regulation S-K.

3. The information required by Part III (Items 10, 11, 12,13 and 14) may be incorporated by reference from the registrant's definitive proxy statement (filed or

required to be filed pursuant to Regulation 14A) or definitive information statement (filed or to be filed pursuant to Regulation 14C) which involves the election of directors, if such definitive proxy statement or information statement is filed with the Commission not later than 120 days after the end of the fiscal year covered by the Form 10-K. However, if such definitive proxy statement or information statement is not filed with the Commission in the l20-day period or is not required to be filed with the Commission by virtue of Rule 3a12-3(b) under the Exchange Act, the Items comprising the Part III information must be filed as part of the Form 10-K, or as an amendment to the Form l0-K, not later than the end of the 120-day period. It should be noted that the information regarding executive officers required by Item 401 of Regulation S-K (§ 229.401 of this chapter) may be included in Part I of Form 10-K under an appropriate caption. See Instruction 3 to Item 401(b) of Regulation S-K (§ 229.401(b) of this chapter).

4. No item numbers of captions of items need be contained in the material incorporated by reference into the report. However, the registrant's attention is directed to Rule 12b-23(e) (17 CFR 240.12b (e)) regarding the specific disclosure required in the report concerning information incorporated by reference. When the registrant combines all of the information in Parts I and II of this Form (Items 1 through 9A) by incorporation by reference from the registrant's annual report to security holders and all of the information in Part III of this Form (Items 10 through 14) by incorporating by reference from a definitive proxy statement or information statement involving the election of directors, then, notwithstanding General Instruction C(1), this Form shall consist of the facing or cover page, those sections incorporated from the annual report to security holders, the proxy or information statement, and the information, if any, required by Part IV of this Form, signatures, and a cross-reference sheet setting forth the item numbers and captions in Parts I, II and III of this Form and the page and/or pages in the referenced materials where the corresponding information appears.

H. Integrated Reports to Security Holders.

Annual reports to security holders may be combined with the required information of Form 10-K and will be suitable for filing with the Commission if the following conditions are satisfied:

1. The combined report contains full and complete answers to all items required by Form 10-K. When responses to a certain item of required disclosure are separated within the combined report, an appropriate cross-reference should be made. If the information required by Part III of Form 10-K is omitted by virtue of General Instruction G, a definitive proxy or information statement shall be filed.

2. The cover page and the required signatures are included. As appropriate, a cross-reference sheet should be filed indicating the location of information required by the items of the Form.

3. If an electronic filer files any portion of an annual report to security holders in combination with the required information of Form 10-K, as provided in this

instruction, only such portions filed in satisfaction of the Form 10-K requirements shall be filed in electronic format.

I. Omission of Information by Certain Wholly-Owned Subsidiaries.

If, on the date of the filing of its report on Form 10-K, the registrant meets the conditions specified in paragraph (1) below, then such registrant may furnish the abbreviated narrative disclosure specified in paragraph (2) below.

1. Conditions for availability of the relief specified in paragraph (2) below.

a. All of the registrant's equity securities are owned, either directly or indirectly, by a single person which is a reporting company under the Act and which has filed all the material required to be filed pursuant to section 13, 14, or 15(d) thereof, as applicable, and which is named in conjunction with the registrant's description of its business;

b. During the preceding thirty-six calendar months and any subsequent period of days, there has not been any material default in the payment of principal, interest, a sinking or purchase fund instalment, or any other material default not cured within thirty days, with respect to any indebtedness of the registrant or its subsidiaries, and there has not been any material default in the payment of rentals under material long-term leases;

c. There is prominently set forth, on the cover page of the Form 10-K, a statement that the registrant meets the conditions set forth in General Instruction (I)(1)(a) and (b) of Form 10-K and is therefore filing this Form with the reduced disclosure format; and

d. The registrant is not an asset-backed issuer, as defined in Item 1101 of Regulation AB (17 CFR 229.1101).

2. Registrants meeting the conditions specified in paragraph (1) above are entitled to the following relief:

(a) Such registrants may omit the information called for by Item 6, Selected Financial Data, and Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations provided that the registrant includes in the Form 10-K a management's narrative analysis of the results of operations explaining the reasons for material changes in the amount of revenue and expense items between the most recent fiscal year presented and the fiscal year immediately preceding it. Explanations of material changes should include, but not be limited to, changes in the various elements which determine revenue and expense levels such as unit sales volume, prices charged and paid, production levels, production cost variances, labour costs and discretionary spending programs. In addition, the analysis should include an explanation of the effect of any changes in accounting principles and practices or method of application that have a material effect on net income as reported

(b) Such registrants may omit the list of subsidiaries exhibit required by Item 601 of Regulation S-K (§ 229.601 of this chapter).

(c) Such registrants may omit the information called for by the following otherwise required Items: Item 4, Submission of Matters to a Vote of Security Holders; Item

10, Directors and Executive Officers of the Registrant; Item 11, Executive Compensation; Item 12, Security Ownership of Certain Beneficial Owners and Management; and Item 13, Certain Relationships and Related Transactions.

(d) In response to Item l, Business, such registrant only need furnish a brief description of the business done by the registrant and its subsidiaries during the most recent fiscal year which will, in the opinion of management, indicate the general nature and scope of the business of the registrant and its subsidiaries, and in response to Item 2, Properties, such registrant only need furnish a brief description of the material properties of the registrant and its subsidiaries to the extent, in the opinion of the management, necessary to an understanding of the business done by the registrant and its subsidiaries.

J. Use of this Form by Asset-Backed Issuers.

The following applies to registrants that are asset-backed issuers. Terms used in this General Instruction J. have the same meaning as in Item 1101 of Regulation AB (17 CFR 229.1101).

1. *Items that May be Omitted*. Such registrants may omit the information called for by the following otherwise required Items:

(a) Item 1, Business;

(b) Item 1A. Risk Factors;

(c) Item 2, Properties;

(d) Item 3, Legal Proceedings;

(e) Item 4, Submission of Matters to a Vote of Security Holders;

(f) Item 5, Market for Registrant's Common Equity and Related Stockholder Matters;

(g) Item 6, Selected Financial Data;

(h) Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations;

(i) Item 7A, Quantitative and Qualitative Disclosures About Market Risk;

(j) Item 8, Financial Statements and Supplementary Data;

(k) Item 9, Changes in and Disagreements With Accountants on Accounting and Financial Disclosure;

(l) Item 9A, Controls and Procedures;

(*m*) If the issuing entity does not have any executive officers or directors, Item 10, Directors and Executive Officers of the Registrant, Item 11, Executive Compensation, Item 12, Security Ownership of Certain Beneficial Owners and Management, and Item 13, Certain Relationships and Related Transactions; and

(n) Item 14, Principal Accountant Fees and Services.

(2) *Substitute Information to be Included*. In addition to the Items that are otherwise required by this Form, the registrant must furnish in the Form 10-K the following information

(a) Immediately after the name of the issuing entity on the cover page of the Form 10-K, as separate line items, the exact name of the depositor as specified in its charter and the exact name of the sponsor as specified in its charter.

(b) Item 1112(b) of Regulation AB;

(c) Items 1114(b)(2) and 1115(b) of Regulation AB;

(d) Item 1117 of Regulation AB;

(e) Item 1119 of Regulation AB;

(f) Item 1122 of Regulation AB; and

(g) Item 1123 of Regulation AB.

(3) *Signatures*.

The Form 10-K must be signed either:

(a) On behalf of the depositor by the senior officer in charge of securitization of the depositor; or

(b) On behalf of the issuing entity by the senior officer in charge of the servicing function of the servicer. If multiple servicers are involved in servicing the pool assets, the senior officer in charge of the servicing function of the master servicer (or entity performing the equivalent function) must sign if a representative of the servicer is to sign the report on behalf of the issuing entity.