

**TRNC
NEAR EAST UNIVERSITY
INSTITUTE OF EDUCATIONAL SCIENCES
ENVIRONMENTAL EDUCATION AND MANAGEMENT**

**LIBYANS PERCEPTION OF ENVIRONMENTAL AND
SOCIO-ECONOMIC IMPACTS OF OIL
EXPLOITATION IN TRIPOLI**

MASTER THESIS

**Master Student
Faed Mahmoud Buojaylah Fayid**

**Nicosia
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**Thesis Advisor
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Approval of the Institute of Educational Sciences Directorate

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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ABSTRACT

LIBYANS PERCEPTION OF ENVIRONMENTAL AND SOCIOECONOMIC IMPACTS OF OIL EXPLOITATION IN TRIPOLI

Faed Mahmoud Buojaylah Fayid

Master Degree, Environmental Education and Management

Thesis Advisor: Assist. Prof. Dr. Mert BAŞTAŞ

January 2019, 81 Page

This current study focuses on Libyans' perception of environmental and socio-economic impacts of oil exploitation in Tripoli. The major objective is to assess demographic factors with emphasis on how age difference among Libyan people influence remarkably their perceived positive/negative environmental impacts of oil exploitation.

The study primarily revealed, with descriptive and inferential statistical reports, people's perceptions of petroleum activities in the metropolitan city particularly in terms of age differences. Precisely four hundred respondents were targeted randomly across different areas the study was carried out. The research was done quantitatively with face to face and one to one distribution of questionnaires. The participants were positive about the study and fully participated voluntarily. A great percentage of civil servants, students, traders and others that run across different educational background were respondents in this current study.

Data were collected through questionnaires and were further processed by SPSS statistical software in which the frequency, percentage and ANOVA ratings were eventually shown. All the values entailed in the tables serve as the basis for comprehensive assessment.

The result of the descriptive statistical analysis revealed that a high percentage of the participants agreed/strongly agreed, neither agreed nor disagreed on the perceived environmental benefits/risks and socio-economic benefits/threats of oil exploitation in Tripoli. Meanwhile, a small percentage of the participants disagreed and strongly disagreed.

Contrarily, the inferential statistical analysis of our postulated statements of the problem finally revealed that age had no significant difference among the Libyan people on their perceived positive/negative environmental and socio-economic impacts of oil exploitation in Tripoli. All the four sub-problems and questionable statements were tested and validated by Analysis of Variance (ANOVA) – in which result varied with perceived positive environmental impacts P-values of 0.376, 0.505 and 0.746; for perceived negative environmental impacts – the P-values include 0.222, 0.676, 0.016 and 0.954; for perceived positive socio-economic impacts – the P-value results are 0.633, 0.067, 0.384 and 0.416; lastly, for perceived negative socio-economic impacts – P-value results are 0.331, 0.449, 0.344 and 0.488; in fact, a high percentage of the participants either agreed or strongly agreed.

The study concluded with some recommendations that address major environmental and socio-economic past and current challenges faced by the residents of Tripoli metropolitan city pertaining to oil exploitation.

Keywords: Environmental impacts, Oil exploitation, Perceptions, Socio-economic

ÖZET

LİBYA HALKININ TRİPOLİDEKİ PETROL İSTİSMARININ ÇEVRE VE SOSYO-EKONOMİK ETKİLERİ İLE İLGİLİ ALGILARI

Faed Mahmoud Buojaylah Fayid

Yüksek Lisans, Çevre Eğitimi ve Yönetimi

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Bu çalışma, Libya halkının Tripolideki petrol istismarının çevre ve sosyo-ekonomik etkileri ile ilgili algılarını ele almaktadır. Çalışmanın temel hedefi, Libya halkının, en başta yaş olmak üzere demografik faktörlerin petrol istismarının çevre üzerindeki olumsuz/olumlu etkilerini nasıl algıladıklarını incelemektir.

Çalışma öncelikle tanımlayıcı ve tahminsel bir raporla katılımcıların, başta kişisel profilleri ve yaş faktörü olmak üzere, halkın Tripoli şehrindeki petrol çalışmaları hakkındaki algılarını ortaya koymuştur. Çalışma, araştırmanın yapıldığı bölgeden rastgele seçilen 400 gönüllü katılımcı ile nitel ve yüz yüze görüşmeler ve anketlerle yürütülmüştür. Çalışmaya ayrıca farklı eğitim geçmişi olan çok sayıda kamu personeli, öğrenci, ticaretle uğraşan ve diğerleri cevaplarıyla katkıda bulunmuşlardır.

Anketlerle elde edilen veriler SPSS istatistiksel yazılım programıyla işleme tabi tutulmuş ve frekans, yüzdelik ve ANOVA derecelendirmeleri yapılmıştır. Tablolarda belirtilen tüm değerler detaylı değerlendirme için temel oluşturmuştur.

Açıklayıcı istatistiksel analiz sonucu, büyük oranda katılımcının Tripoli'deki petrol istismarının çevresel faydaları/riskelri ve sosyo-ekonomik tehlikeleriyle ilgili algılara katılıp katılmama yönünde görüş bildirmemişlerdir. Öte yandan, düşük yüzdelikte katılımcı görüşlerini “katılım” veya “kesinlikle katılım” şeklinde belirtmişlerdir. Bu bulguların tam tersine, kabul görmüş ifadelerimizin tahminsel istatistiksel analizi Libya halkının petrol çıkarımının olumsuz/olumlu etkileri konusundaki görüşlerinde yaş faktörünün bir etkisi olmadığını göstermiştir. Sorgulanan dört alt problemin geçerliliği ANOVA kanalıyla saptanmıştır. Sonuçlar, olumlu çevresel etki P değerleri 0.376, 0.505, ve 0.746, olumsuz

evresel etki P-deęerleri 0.222, 0.676, 0.016, ve 0.954 olarak eřitlilik gstermiřtir. Olumlu sosyo-ekonomik etki P-deęerleri 0.633, 0.067, 0.384 ve 0.416 ve olumsuz sosyo-ekonomik etki P deęerleri 0.331, 0.449, 0.344 ve 0.488 olarak saptanmıřtır. alıřmada katılımcıların byk yzdelięi cevaplarını katılıyorum, veya kesinlikle katılıyorum řeklinde grř belirtmiřlerdir.

Sonuç olarak bu alıřma, gnmzde Tripoli řehrinde yařayan Libyalıların srekli karřılařtıkları bařlıca evresel ve sosyo-ekonomik sorunlarına iliřkin bazı neriler sunmuřtur

Anahtar kelimeler: evresel etkiler, petrol istismarı, algılar, sosyo-ekonomik

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CONTENTS

ETHICAL DECLARATION	ii
ABSTRACT	iii
ÖZET.....	v
ACKNOWLEDGEMENTS	vii
CONTENTS	viii
ABBREVIATIONS	xi
KEY TERMS	xii
TABLE OF CONTENTS	xiii
FIGURES	xiv

CHAPTER I

INTRODUCTION	1
1.1. General Introduction.....	1
1.2. Problem	5
1.2.1. Sub- problem	6
1.3. The aim of the Study	7
1.4. The Significance of the Study	8
1.5. Assumptions	8
1.6. Limitations.....	9
1.7. Definition of Terminologies	9

CHAPTER II

LITERATURE REVIEW.....	11
2.1. The Origin of Crude Oil Exploitation and their Impacts Globally.....	11
2.1.1. The Socio-Economic Advantages of Crude Oil Exploitation.....	12
2.2. Coordination of the Activities of the Petroleum Sector	14
2.3. Assessment of the Socio-economic Effects of Crude Oil Exploitations	15
2.3.1. Crude Oil Exploitation Diminished the Vital Sectors of a State Economy	16
2.3.2. Crude Oil Economy suffered a lot from Dependent Consequences	17

2.3.3. Crude Oil Revenue is not Accountable	18
2.3.4. Huge International Liability	18
2.3.5. Communal Clashes and Insecurity	19
2.4. Ecological Effects of Crude Oil Exploitations	19
2.4.1. Air Pollution	20
2.4.2. Termination of Vegetation Cover	20
2.4.3. Water Pollution	21
2.4.4. Soil Pollution	22
2.4.5. Infection Threatens Human Life	22
2.5. Peoples' Awareness of Environmental Power Resources	23
2.6. Libyan Petroleum Sector	24
2.7. Environmental and Socio-Economic Effects of Petroleum Exploitation in Libya.....	26

CHAPTER III

RESEARCH METHODOLOGY	31
3.1. The Study Plan	31
3.2. Characteristics of Research Areas	31
3.3. Sample Size and Sampling Technique	33
3.4. Data Collection Method	33
3.5. Data Analysis Techniques	33
3.6. Ethical Considerations	34

CHAPTER IV

FINDINGS, ANALYSIS, AND INTERPRETATION.....	35
4.1. Findings	35
4.1.1. Descriptive Analysis of the Demographic Profile of the Respondents ..	35
4.1.2. Gender Profile of the Respondents	35
4.1.3. Assessment of Respondents on the Basis of Marital Status	36
4.1.4. Assessment of Educational Level of the Respondents	37
4.1.5. Assessment of Age Category of the Respondents	39
4.1.6. Assessment of Occupation Category of the Respondents	40
4.1.7. Assessment of Monthly Income Levels of the Respondents	41

4.2. A Descriptive Analysis of the Perceived Environmental and Socio-economic Impact of Oil Exploitation in Tripoli	43
4.2.1. The Perceived Environmental Benefits of Oil Exploitation among Libyan People in Tripoli	43
4.2.2. The Perceived Negative Environmental Impacts of Oil Exploitation among Libyan People in Tripoli	45
4.2.3. The Perceived Positive Socio-economic Impacts of Oil Exploitation among Libyan People in Tripoli	48
4.2.4. The Perceived Negative Socio-economic Impacts of Oil Exploitation among Libyan People in Tripoli	50
4.3. Analysis of Findings on the Basis of Sub Problems	53
4.3.1. The First Sub- Problem.....	53
4.3.2. The Second Sub- Problem	55
4.3.3. The Third Sub Problem	57
4.3.4. The Fourth Sub Problem.....	59
 CHAPTER V	
CONCLUSION AND RECOMMENDATION	61
5.1. Conclusion.....	61
 REFERENCES.....	65
TURNITIN	81

ABBREVIATIONS

ANOVA	: Analysis of Variance
GDP	: Gross Domestic Product
EIA	: Environmental Impact Assessment
OPEC	: Organization of Petroleum Exporting Countries
SPSS	: Statistical Package for the Social Sciences
UNEP	: United Nations Environment Programme
UNESCO	: United Nations Educational, Scientific and Cultural Organization
N	: Number of People
(%)	: Percentage

KEY TERMS

BIOSPHERE: It is the life supporting part of the earth. It is the part of the earth that sustains living things (UNESCO and UNEP, 1983).

ENVIRONMENT: Refers to habitats that involve the living and non-living things. These include man, nature, plants, animals, mountains, different kinds of landscapes, water bodies and all man-made features (Jacob, 2014).

ENVIRONMENTAL IMPACT: Various human activities or natural events that pose as a risk or threat or benefit to the environment both living and non-living things (Roth, 1992).

OIL EXPLOITATION: It involves using a combination of various technical means to regain maximally petroleum resources from the ground. The drilling depends on the nature of the rock, depth of petroleum location in the ground, characteristics of petroleum and physical infrastructures (Fink, 2015).

PERCEPTION: It is the ability to think or have knowledge of a particular situation. Basically, perception is the ability to understand using various human senses and experiences. It also implies awareness or sensitivity, consciousness, being able to observe and comprehend (Polkinghorne, 1988).

POLLUTION/CONTAMINATION: It is the releasing of harmful substances on the land, into air, and water (Pradhan & Kumar, 2014).

TABLE OF CONTENTS

Table 1: Gender of the Respondents.....	35
Table 2: Marital Status of the Respondents.....	36
Table 3: Educational Level of the Respondents.....	38
Table 4: Age Category of the Respondents.....	39
Table 5: Occupation Category of the Respondents.....	40
Table 6: Monthly Income Levels of the Respondents.....	42
Table 7: Perceived Environmental Benefits of Oil Exploitation in Tripoli.....	44
Table 8: Perceived Negative Environmental Impacts of Oil Exploitation in Tripoli....	46
Table 9: Perceived Positive Socioeconomic Impacts of Oil Exploitation in Tripoli..	48
Table 10: Perceived Negative Socioeconomic Impacts of Oil Exploitation in Tripoli.....	51
Table 11: ANOVA Result on How Age Difference among the Libyan People Significantly Influences their Perceived Positive Environmental Impacts of Oil Exploitation in Tripoli.....	53
Table 12: ANOVA Result on How Age Difference among the Libyan People Significantly Influences their Perceived Negative Environmental Impacts of Oil Exploitation in Tripoli.....	55
Table 13: ANOVA Result on How Age Difference among the Libyan People Significantly Influences their Perceived Positive Socioeconomic Impacts of Oil Exploitation in Tripoli.....	57
Table 14: ANOVA Result on How Age Difference among the Libyan People Significantly Influences their Perceived Negative Socioeconomic Impacts of Oil Exploitation in Tripoli.....	59

FIGURES

Figure 1: Map of Libya Showing Distribution of Oil Field.....	4
Figure 2: The World's Top 10 Holders of Proved Crude Oil Reserves.....	25
Figure 3: Crude Oil Production in Libya from January 2010 to October 2015.....	26
Figure 4: Inspections and Cleaning of Polluted Site in Libya.....	28
Figure 5: Pollution Site in one of the Coastal area in Libya.....	28
Figure 6: Graph Showing the Statistics of Unemployment Rate in Libya.....	29
Figure 7: Map of Libya Showing Population Densities Distribution with Specific Target on Tripoli.....	32
Figure 8: Gender Profile of the Respondents in Tripoli.....	36
Figure 9: Marital Status Profile of the Respondents in Tripoli.....	37
Figure 10: Educational Level of the Respondents in Tripoli.....	38
Figure 11: Age Category of the Respondents in Tripoli.....	39
Figure 12: Occupation Category of the Respondents in Tripoli.....	41
Figure 13: Monthly Income Level of the Respondents in Tripoli.....	42

CHAPTER I

INTRODUCTION

1.1. General Introduction

Petroleum production is the last stage after extraction activities that are accompanied by serious environmental implications on the biosphere, people well-being, and native communities. Petroleum industries involve the means of space cable searching devices and geophysical survey in order to demarcate petroleum fields of highly commercialized values. The moment commercialized petroleum fields are discovered, followed by construction of road networks, facilities, erecting of equipment stand, deployment of employees, expatriates, motors and mining equipment. It also involves the use of heavy mining facilities and volatile materials for the blasting of surface rocks. The visible implications on the environment comprises of massive ruining of vegetation resources, clearing away the nature and its biodiversity, releasing of harmful substances into the air, terrestrial and water environments. All these affect the life of plants, animals, petroleum company employees, man, and eventually result in loss of native settlements and natural landscapes. The ecological impacts of the invasion of petroleum exploitation indicated a grave ecological fear for the unprotected vegetation resources (Epstein and Sodha, 2002).

The petroleum sector in the USA generated harder and liquefied discarded materials compared to the urban areas, the farming sector, manufacturing, and other extractive sectors. Most of the discarded materials are dangerous and highly chemical in nature. Likewise, water generated during petroleum exploitation is, most of the time, redirected to the open water channels like rivers, lakes, sea, and lagoons – which are made of dangerous chemical substances. This ejected chemical water also pollutes the underground water resources. The noise and air pollution resulting from petroleum exploitation also create a lot of medical complications on people well-being in terms of skin related diseases, respiratory and heart diseases etc. (Doyle, 1994; Epstein and Sodha, 2002).

Although, there are no global statistical assessment facts showing the effects of petroleum exploitation on native people and their settlements, many researches and documentaries have shown the adverse effects of petroleum exploitation on the native people and rural ecological settings. For instance, many native people and their settlements were affected in Africa, South America, Middle East, Asia, Europe, and North America – which involved thirty-nine nations in petroleum exploitation areas. It has endangered the existence of the people, their tradition, agricultural values and forest resources (O'Rourke and Connolly, 2003; Kretzmann and Wright, 1997).

After considering the drastic environmental impacts of the petroleum industry globally, it is also good to know that the petroleum industry has tremendously impacted our world positively. Petroleum resources have effectively played a vital role in the areas of power generations, manufacturing, transport development, and employment generation (Young, 2000 and Doyle, 1994). Petroleum resource is high premium product in the global market. It commands multiple of billion worth of high currency value in any business deals in the global market, highly economic values with a lot of gains margin both for the multinational companies and public authorities in every nation across the globe. It generates more revenues through effective taxation, augments trade deficit and strong political tools for dialogue, diplomacy, and control. It creates employment opportunities that exceed two million employees globally (Energy Intell. Group, 2003). Despite the inadequate availability of comprehensive data, nations like Venezuela, Angola, Libya, Equatorial Guinea, Nigeria, and Ecuador earned more than fifty percent from their petroleum production in forms of gains and taxation. (O'Rourke and Connolly, 2003; Ross, 2001).

In addition, petroleum producing areas are often characterized by crises pertaining to petroleum endowment exploitation and struggle for basic social amenities. Such crises include clash with native people regarding petroleum exploration, severe and persistent clash that hinder crude exploration and exploitation, regional political uproar, violence that involves destruction of petroleum infrastructures, cases of kidnapping especially in developing nations that connect with insecurity, encroachment into the land of the native people which resulted in so many uproars and civil agitations, massive industrial strikes of petroleum workers and resettlement problems among the native people, oil companies and the government.

All these crises combined together may result in a societal and financial setback for any nation concerned (Epstein and Sodha, 2002; Model, 2002).

Upon the basis of this study, adequate ecological sensitivity or awareness of the people would be very relevant in knowing and acknowledging the policies of the public authorities toward the release of harmful substances and the aftermath effects of well-being related threats. Adequate and constructive awareness of the people toward ecological contaminations is very vital in reducing the aftermath threats. People may not be in the position to control environmental contaminations, but their understanding and awareness of environmental contamination really matters. This is very foundational in creating adequate ecological sensitivity that could assist people to be safeguarded from contaminated surroundings, practice nature oriented and sustainable cultures and work towards developing ecological value (Wang and Shi, 2012). Other researches in the past focused more on people's ecological sensitivity using perquisites like ecological damaging control, conservation, and renewable improvement, but this study shall focus on the Libyan perception of environmental and socio-economic impacts of oil exploitation in Tripoli (Chen and Tao 2017).

1.1.1. Background of Study

Crude oil is a major predominant sector that covers the societal, cultural and financial life of people of Libya as the main basis of revenue both for the government and individual, manufacturing, commerce, and national pride. The discovery and capitalization of crude oil in Libya was dated to the year 1955 and 1959 in Zelten and Amal catchment respectively. This crude oil was found at high economic quantity which later turned as the financial backbone of Libya. The financial and governmental expectations being accrued to the oil sector globally were so much that these aftermath effects have resulted in the abandonment of other solid minerals sector of the Libyan economy. On the basis of the statistical data of IMF global financial institution, revealed in the year 2010, more than 95% of Libya exportation revenue generation were majorly derived from the crude oil sector (El Kailani, 2012).

Libya has the biggest untapped petroleum resources in the continent of African with roundup estimation of Forty-Six billion and 6 Million barrels and along with untapped liquefied natural gas of Fifty-Five Trillion cubic feet. Between the year 1970 and 1990, Libya experienced tough commercial prohibitions from the western world;

but they were still able to maintain sustainably with the quotas allocated to them by the OPEC which daily supply to the global market ranges from one million two thousand to one million six hundred thousand. In the year 2010 the supply quantity increased to one million eight hundred thousand on a daily basis. Libya crude oil production dropped significantly to one million five hundred thousand barrels daily in 2011 due to the civil crises of mass protest against the regime of Gadhafi (EIA, 2012).

Most essentially, Libya is highly rated for well standardized crude oil with mild Sulfuric contents that have a good market value for liquefied natural gas and other related petroleum products across European communities, Asia, Canada, and the USA. Libya is highly influential in the global oil market as they are positioned as major key players in both OPEC organization and global crude oil market (Colombo and Kinninmont, 2012). Considering the illustration given by the map below (Figure 1), Libya is endowed with 5 major petroleum fields that are broadly distributed in the western and eastern parts: examples are As-Sarie, Amal, Nafoora, Aswad, Hofra, Mabruk etc. (Precisely located in the Northeast of Libya). On the Western axis we have the following oil fields located in Muruzq, Elephant, Emgayet, Wafa, Atshad, Gazeil, and Tigi.

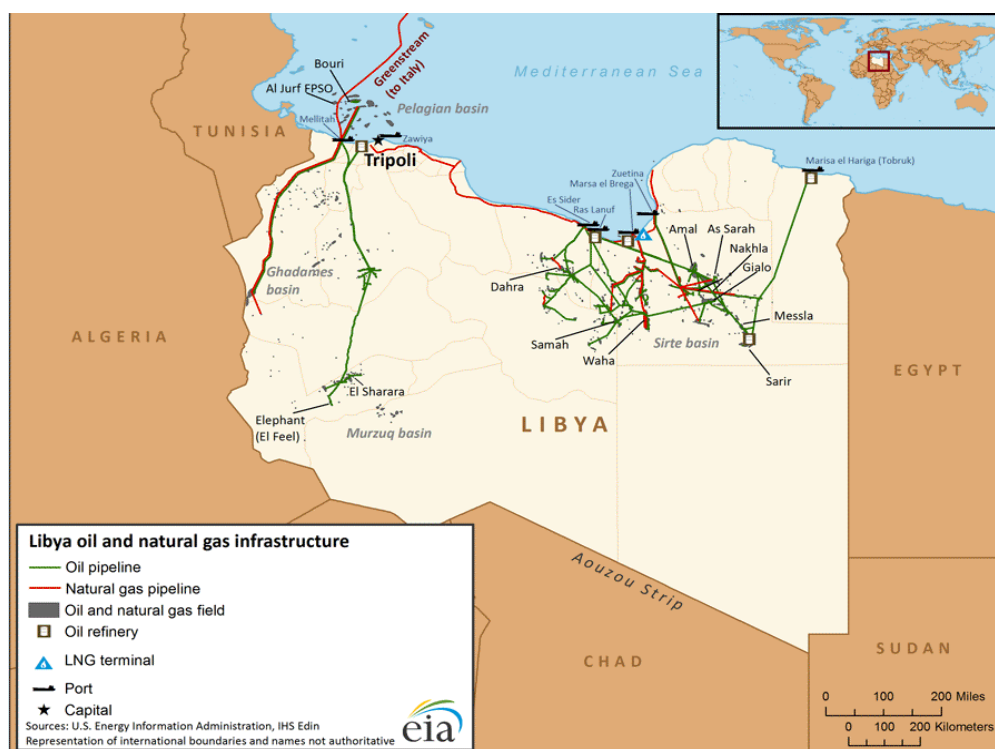


Figure 2: Map of Libya Showing the Distribution of Oil Fields

The large coverage of petroleum fields all across Libya territory have viably sustained high-quality life and reliable source of livelihood among Libyans and governments. This rated the Libyan economy to be above among other petroleum generating nations in Africa. Regardless of the closed economic system and global financial prohibitions, the governments were still able to support the Libyans with adequate infrastructures that include easily accessible accommodation, medical services, and availability of food at affordable prices, consistent power supply and other basic necessities of life (Edwik, 2007).

One of the remarkable challenges in petroleum exploitation in Libya is the absence of efficient infrastructures concerning petroleum wastes. Although many of the petroleum corporations were trying to create durable infrastructures to control their pollution activities, this has not yet been accomplished to this moment. Major pollution challenges come from the use of various infrastructures that are connected to petroleum exploration and exploitation. Discarding of petroleum waste indiscriminately is regular activities being carried out by petroleum incorporations in rural areas where most large commercial oil fields and exploitation infrastructures are sited. There is news from foreign incorporations that most native ecological concerned incorporation that is in-charge of contaminants do indiscriminately discharge in far extreme uninhabited desert areas. So the contaminated materials are either being exposed or covered with desert soil. Statistical data revealed that a large quantity of over 5 million loads of petroleum discards are deposited all across Libya territory. Researches carried out in high populated regions of Al-Zawiya and Tripoli depicted a large rate of land pollution. Thus, there are increasing responses or sensitivity amongst Libyans, nature activists and public authorities to establish more efficient operations within the petroleum industry, open supervisions, restrict enforcement and execution of rules that would protect the people of Libya and their environment (The Telegraph 31st January 2011: Oil and Gas Related Pollution in Libya). These socio-economic and environmental perceptions of Libyans regarding petroleum exploitation in Tripoli are what this study intends to critically consider on the basis of the positive and negative impacts.

1.2. Problem

The fundamental problem in this research lies on how the Libyan people perceived environmental and socioeconomic impacts of oil exploitation in Tripoli in

terms of positive socio-economic benefits, negative socio-economic risks, positive environmental opportunities, and negative environmental risks. Notwithstanding, there are constructive benefits of petroleum exploitation in any nations that are endowed with such natural resources, but the exploitation comes with a lot of destructive impacts if such resources are not properly managed and the gains being judiciously used to develop the people and the environment of the mining source. The constructive benefits include the mass creation of jobs for the people, increment in commercial activities both domestically and internationally, balancing of foreign trading earnings, massive financial and commercial development. On the other hand, petroleum exploitation could also create a lot of destructive impacts environmentally, economically, culturally and socially. These specifically include expulsions and release of contaminants, deforestation, erosion, severe ecological damage, water pollution, risk of health to the people in the communities, total extinction of biodiversity, soil and noise pollution (Nanok and Onyango, 2017).

1.2.1. Sub- problem

A rightful sustainable perception is required in order to protect our immediate surroundings and the gifts of nature in such a way that will guarantee livelihood of people ecologically, financially, commercially and socially as a society or global community. On the basis of this premise, this thesis is directed to raise some crucial fundamental problem statements/questions in order to ascertain the perceptions of Libyan people on the environmental and socio-economic impacts of oil exploitation in Tripoli as purposely postulated below:

- To what extent do age differences among Libyan people significantly influence their perceived positive environmental impacts of oil exploitation in Tripoli?
- To what extent do age differences among Libyan people significantly influence their perceived negative environmental impacts of oil exploitation in Tripoli?
- To what extent do age differences among Libyan people significantly influence their perceived positive socio-economic impacts of oil exploitation in Tripoli?

- To what extent do age differences among Libyan people significantly influence their perceived negative socio-economic impacts of oil exploitation in Tripoli?

1.3. The aim of the Study

Several past researches emphasized the social effects of environmental endowments utilization, but failed to consider some factors both socially, economically and environmentally that influence people's perception of oil exploitation in particular. This research aimed to assess how Libyan people perceive the environmental and socio-economic impacts of oil exploitation in Tripoli. The research targeted to find out the perception of the native people of Tripoli regarding oil exploitation and at the end recommend lasting solutions that will bring sustainable development to the study area. The aims of this research are well enumerated as follows:

- * To narrate descriptively how demographic factors among Libyan people significantly influence the perceived positive and negative environmental and socio-economic impacts of oil exploitation in Tripoli.

- * To explain descriptively how Libyan people perceived positively and negatively the environmental and socio-economic impacts of oil exploitation in Tripoli.

- * To analyze how age differences among Libyan people significantly influence their perceived positive environmental impacts of oil exploitation in Tripoli.

- * To assess how age differences among Libyan people significantly influences their perceived negative environmental impacts of oil exploitation in Tripoli.

- * To investigate how age differences among Libyan people significantly influence their perceived positive socio-economic impacts of oil exploitation in Tripoli.

- * To evaluate how age differences among Libyan people significantly influence their perceived negative socio-economic impacts of oil exploitation in Tripoli.

1.4. The Significance of the Study

The research intended to create awareness and as well to assess the level of knowledge among Libyan settlers regarding the activities of petroleum companies in Tripoli toward the environmental and socio-economic impacts of oil exploitation. Ecological conservation is a collective responsibility of everybody, the operators, governments, regulators, environmental activists, individual and people in various communities. Since manufacturing advancement particularly petroleum sector is regarded as the main factor triggering ecological contamination together with the increase in the numbers of people and serious consequences on the biosphere. Oil exploitation with its serious adverse effects on land, water, and air are massively degrading the environment at a very faster rate than anybody can ever imagine (Wang and Shi, 2012).

Thus, ecological contamination due to various operations of man has no limitation of spreading to different parts of the world carrying contaminants through the aid of breeze, water, and atmospheric vapors. With such contaminants the world natural environments are being affected with temperature rising, reduction of ozone blanket, the rise in sea level, acid rain, consistent polar ice melting, wildfire and spread of epidemic (Lee and Chun, 2002). The positive socio-economic effects are so restricted to a particular community or state, but the environmental consequences are very diffusing to all parts of the world – which indeed necessitate this research work.

1.5. Assumptions

Demographic factors among Libyan people significantly influence the perceived positive and negative environmental and socio-economic impacts of oil exploitation in Tripoli.

* Libyan people perceived positively and negatively the environmental and socio-economic impacts of oil exploitation in Tripoli.

* Age differences among Libyan people significantly influence their perceived positive environmental impacts of oil exploitation in Tripoli.

* Age difference among the Libyan people significantly influences their perceived negative environmental impacts of oil exploitation in Tripoli.

* Age differences among Libyan people significantly influence their perceived positive socio-economic impacts of oil exploitation in Tripoli.

* Age differences among Libyan people significantly influence their perceived negative socio-economic impacts of oil exploitation in Tripoli.

1.6. Limitations

This on-going study was limited by the following factors below;

* The primary data regarding Libyan perception on environmental and socio-economic impacts of oil exploitation were collected from selected residents of Tripoli who live close to the layout of the oil companies.

* The questionnaires were distributed to the respondents or residents on a random selection basis.

* Administering the questionnaires involved serious security risks and cost a lot in terms of resources, money, personnel and time.

* This study is limited to a quantitative research. There was no room for a qualitative or mixed method of data collection according to the way the questions were formulated in the questionnaire.

* The number of participants, 300, does not address to the whole population in Tripoli. In fact, the population settings were rural in nature with scattered settlements.

* The information gathered from the respondents on the basis of the demographic profile was not restricted to any gender, profession, age and social status.

1.7. Definition of Terminologies

1. Biosphere: It is the life supporting part of the earth that sustains living things (UNESCO and UNEP, 1983).

2. Environment: Refers to a habitat that involves the living and non-living things. These include man, nature, plants, animals, mountains, different kinds of landscapes, water bodies and all man-made features (Jacob, 2014).

3. Environmental Impact: Refers to various human activities or natural events that pose as a risk or threat or benefit to the environment, both living and non-living things (Roth, 1992).

4. Oil Exploitation: It involves using a combination of various technical means to regain maximally petroleum resources from the ground. The drilling depends on the nature of the rock, depth of petroleum location in the ground, characteristics of petroleum and physical infrastructures (Fink, 2015).

5. Perception: Refers to the ability to think or have knowledge of a particular situation. Basically, perception is the ability to understand using various human senses and experiences. It also implies awareness or sensitivity, consciousness, being able to observe and comprehend (Polkinghorne, 1988).

6. Pollution/Contamination: It is the releasing of harmful substances on the land, into air, and water (Pradhan and Kumar, 2014).

7. Settlements: Are a collection of people and buildings in forms of urban centers, towns, villages, hamlets, and homesteads (Qadeer, 2000).

8. Socio-Economic Impact: It involves various activities of man on the part of finance, commerce and social activities like norms, values, laws, education and infrastructural developments (UNESCO and UNEP, 1983).

9. Wastes: These are discarded materials which may be in solid or liquid forms. They include degradable materials (Demirbas, 2011).

CHAPTER II

LITERATURE REVIEW

2.1. The Origin of Crude Oil Exploitation and their Impacts Globally

Every nation across the globe are known to be facing three chronic challenges that include air contamination, global warming pertaining to climatic alteration and increment in the prices of petroleum products. The organic power means are mostly derived from crude oil, solid carbon materials, and liquefied gas, while the inexhaustible power means are derived from sea wave, latent heat from the earth, sunlight, biofuel, wind and electricity powered by water (Boyle, 2004 ve Sevim, 2010). The power consumption rate is increasing worldwide with inadequate supplies that are limiting the commercial advancement of the entire globe. Power generations and supplies are highly connected to diverse societal matters such as city expansion, eradication of impoverishment and social inequality, female gender advocacy, environmental population control and increase in human number densities. These aforementioned challenges are the main factors confronting the power sectors worldwide in terms of the standard and adequate supplies that will address societal challenges (Demirbas, 2017). Most essentially, petroleum as a means of generating power has seriously taken over the use of charcoal or solid carbon materials for many decades as modern power means for transportation, industries and domestic households (Owen et al., 2010). These imply that petroleum resources are not equally circulated globally with estimated global capacities in storing one trillion five hundred billion kegs and the output on daily basis accounted for approximately eighty-nine million kegs (Bentley, 2016; Kilian and Murphy, 2014).

From a historical perspective, exploitation of crude oil first originated in 3500 BC in the region of the present-day the Middle East and Chinese people republic. Crude oil was used as a medicinal means, building works and domestic means of powering household lightings. In the civilization era of the early 1900s, the exploitation of crude oil emerged in Eastern parts of Europe (Russian, Poland, and Romania), Canada and America. The rising consumption of crude oil triggers the

production capacity of fossil products. Later crude oil discovery and exploitation extended more to Middle East nations (like Saudi, Iran, and Iraq), Mexico and South America (Venezuela). The advent of success in automobile and mechanical industry, technology, space adventures, urbanization, human population growth, public governance, agriculture, and industrialization have made crude oil to be highly valuable (Forbes, 1937; Peterson, 2000). Then, crude oil was regarded as good and valuable environmental endowments that have no negative impacts due to mild numbers of human growth, low global output, use of crude implements, low technological advancement and small consumption rate of fossil energy. but in this modern day, crude oil exploitation both at the upstream and downstream sectors have grossly affected the aquatic animals, terrestrial environment, airspace resources, people and their sources of livelihood. These crude oil resources have helped to power so many vital parts of our modern state that include farming, industry, domestic and industrial power consumption, modern mobility means, education, security forces, science, and research. These also coupled with the increasing numbers of people that exceed more than seven billion. So crude oil resources are needed to address all their basic necessities (Lee and Mason, 2011). With the rising consumption globally, exploitation needs to be accelerated to boost output through advanced high-tech equipment coupled with inefficient utilization of crude oil resources that amount to putting more load on the ecosystem than what it can contain. These eventually resulted in so many environmental and socio-economic crises that are happening in oil-producing nations worldwide (Cao, 2007).

2.1.1. The Socio-Economic Advantages of Crude Oil Exploitation

It Supports the Commercial Growth of any Nation: Fossil energy resources is highly marketed globally and stimulate the commercial growth of several nations that have in abundant (Iledare and Pulsipher, 1999). It is the most vital of many resources and supporter of different kinds of finished goods or manufactured goods (Yang et al., 2006). Materials from fossil fuels include diesel, liquefied gas, tar substances, kerosene, petrol and different kinds of crude oil by materials (Al-Jarri and Startzman, 1997).

Crude oil is the main origin of liquefied gas: This gas is being utilized domestically, industrially and medically in medical centers (Adebayo and Tawa, 2012).

Fossil energy resources are the major origin of by-products for the manufacturing other finished goods in chemical-based industries: Such by-products or substances are usually used in manufacturing plastic products, soaps, medicinal materials, synthetic leather materials, substances for pests and insects' killer, carpets, fertilizers, volatile materials and coloring materials (Coates et al., 2002).

Petroleum resources are used to support farming activities: It provides chemicals for farm inputs in the eradication of insects, pests and unwanted plants, it provides soil enhancer in form of fertilizers to enrich the soil fertility and as well increase farm yields. In this contemporary age, most commercial and subsistence farm operators depend totally on these chemical materials to boost their production capacity in order to meet up with the growing demand for foodstuff. Petroleum materials (like diesel and kerosene) have been discovered in those days for the control of unwanted plants (Heinberg and Bomford, 2009). Also, the use of tars, sourced from petroleum materials and used as a soil, cover to prevent washing of topsoil and improve the water content of the soil. These have been used to support vegetable crops, grain crops and leguminous crops (Neblett, 1967). The uses of modern farm machinery have been powered mostly by petroleum products as a major source of energy. These have been so supporting indeed in promoting farming activities from the point of upstream to the downstream where it finally gets to the consumers (Heinberg and Bomford, 2009).

Crude oil is the energy and material behind space science. It serves as energy source for the operation of space science. Material needed for space adventures and maintenance are usually derived from petroleum products. Even the raw materials for the manufacturing of space plane with less weight which move at a very high speed are being sourced from petroleum by-products (Hibbard, 1963).

Crude oil energy supports all the activities in building industry: These involve works like road networks, airplane landing facilities, motor vehicles garage, dredging of water routes, and the building of barriers that prevent sea waves and flood, erection of stadium complex, the building of shopping mobs, skyscrapers and railways. For instance, civil engineering works among the European communities exceed ninety

percent, eighty-five percent in America; Chinese People Republic is approximately seventy-five percent on motor vehicles high way building; while Saudi highway building covered approximately forty-four thousand kilometers according to their building activities (Read, 2015; Berger, 1951; Adebayo and Tawabini, 2012).

Petroleum resources support the production of electric power: With the rising in the need of electric power for home use, industrial use, transportation use, municipal use, agricultural use and telecommunication use; these have triggers the use of liquefied gas and less of charcoal because of the ecological consequences and the need to abide with the ecological laws in order to reduce carbon emissions and effectively combat climate change; the statistics revealed that forty-nine percent of charcoal usage shall be reduced to thirty-nine and the usage of liquefied gas shall extend from twenty-four percent to twenty-seven percent from the year 2010 to 2035 respectively. These depicted the level of consistency and relevance of liquefied gas for electric power production over the space of time (Outlook, 2012).

2.2. Coordination of the Activities of the Petroleum Sector

The activities of the petroleum sector at every stage of operation are subjected to scrutinize coordination on the basis of nature protection, well-being, and rules regarding protection. Nature supporters contended that although petroleum sector is controlled by several official rules, the execution of such rules does not carry much weight of enforcement especially among the native people in the third world nations (Doyle, 1994). In advanced nations of the world, the effects of petroleum manufacturing operations and the reprocessing of petroleum are properly coordinated. The reprocessing and major content of petroleum finished products is indeed coordinated to avert any adverse effects both ecologically and wellbeing wise on the part of human and bio-diversities. For instance, America fossil energy coordination policies involve the control of the oxygen level of petroleum products, road transport, fossil energy policy, modified fossil energy policy and the onward liquefied natural gas control policy. With all these rules and policies enacted in American States there are a lot of weaknesses and shortcomings spotted in the rules that petroleum corporations outsmart in order to explore freely at the expense of people well-being and the environment. They make a lot of fortunes and damage ecological integrity from these shortcomings of the rules without facing any penalties for their offenses

(O'Rourke and Connolly, 2003). In fact, the petroleum corporations in American States are mostly excluded from the discharge of dangerous metallic chemicals, categorizing metallic chemicals like pollutants, all discards connected to petroleum extraction, air quality control, petroleum contamination rules and dangers regarding petroleum conduits and protection rules (Board et al., 2003).

Coordination of the activities of petroleum corporations could possibly be hindered by inadequate financial supports and shortage of workers, especially from petroleum regulatory bodies. The American States alone have more than two million kilometers outlets of petroleum conduits connecting every state. The regulatory bodies have fifty-five supervisors whose main duty is to assign penalties on petroleum conduits breakage, accidental outbreak by fire and life of oil staff that is being endangered or taken away. Absolutely, no judicious monitoring and prosecution regarding the bridging of rules by environmental regulators both in the advanced world and developing world. The desire of every state and government is to maximize output and profit at the expense of the populace and the environment while the petroleum operators and top government officials keep on enriching themselves (Nesmith and Haurwitz, 2001).

In third world nations, the rules on environmental protection and safety regarding petroleum exploitation are very difficult to assess thoroughly and administratively. The operation of these rules in these nations are not as strong, enforcing and viable as that of American rules. Many of these third world nations that are exporting petroleum are known to be feeble with their bulky ecological rules that lack administration, supervision, prosecution, legal framework, and efficient strategies. For instance, it was revealed by American power management that Nigeria has no program or strategy enacting the prevention of environmental contamination. The rules are just there without any power backing and prosecution (Raphael and Stokes, 2011). Ecuador and Saudi Arabia have no ecological rules that are coordinating petroleum exploitation but in the year 1990 and 2001 they both established ecological ministries respectively (Chalecki, 2002; O'Rourke and Connolly, 2003).

2.3. Assessment of the Socio-economic Effects of Crude Oil Exploitations

Many nations that have abundant mineral resources are usually referred to be economically sustainable with high revenue generation and high incomes per head as

well. Crude oil exporting nations were involved with this assessment. These assessments were based on the pros and cons effect of crude oil exploitation both socially and economically. Also, several researchers in this matter have been referring crude oil endowment as evil endowment due to the severe devastating effects it has on the people and their livelihood, especially in developing nations of the world (Auty and Warhurst, 1993; Sachs and Warner, 2001). Research also buttressed that petroleum endowed nations, particularly in the developing world, experienced stagnant development in comparison to the nations that are not endowed with petroleum resources. These nations are usually known for bad oppressive leadership, frequent civil crisis, misappropriation of public funds, high rate of poverty, financial hardship, poor development of infrastructures, and commercially unviable for meaningful development (Shaxson, 2007 and Karl, 2007).

The great harvest of foreign exchange earnings from crude oil exportation in the early year of 1970 brings a large fortune of revenue and fast commercial development. Despite the harvest of these fortunes, after the period of thirty years, the third world oil producing nations were still struggling with financial stagnation, commercial setback, high rate of jobless people, inadequate social amenities, high rate of illiteracy levels due to poor educational services, poor state of health sector, high rate of international liabilities financially, poor development of human resources, insecurity, low life expectancy rate, extremely low capital per head, poor state of environmental sanitation and degradation. For instance, Angola is one of the biggest exporters of crude oil in Africa, but still suffered high death rate of young children than any nations that are not producing oil in Africa. Likewise,

Equatorial Guinea with high day to day exportation of crude oil still massively prone to low revenue earnings on every individual or household with massive corruption and high death rate among children due to poor health facilities and shortage of medical personnel (Shaxson, 2007).

2.3.1. Crude Oil Exploitation Diminished the Vital Sectors of a State Economy

The flow of crude oil revenue results to what could be called low financial illness or setback. In this case, so many revenues pumped into the financial system resulted to high valuation of money, increment in the prices of goods ranges from farm

produces to manufacturing goods which were highly costly and less advantage to the challenging foreign goods. Thus, the manufacturing cost of domestic goods becomes too high because of the increment in overhead costs. The exportation of domestic goods index reduced drastically with a decline in farming and manufacturing activities. The economy shifted from being mixed to mono-economy that are characterized with to reliance on crude oil economy. Such kind of economy as it is operating today in the developing world will mostly be affected either positively or negatively with the sudden shift of price in global trade of crude oil. The macroeconomic effects are few people becoming too wealthy at the expense of the masses that grossly suffered joblessness, impoverishment, unable to access adequate social services and another drastic socio-economic setback (Shaxson, 2007).

Nigeria in those days happens to be one of the global leader and exporter of cocoa, palm oil, rubbers, and groundnuts. The farming output then was exactly seventy-five percent of the overall exportation precisely in early 1970s. The production and exportation of farm products diminished to sixty percent between the period of 1975 and 1978. Currently, crude oil has accrued to ninety percent of domestic exportation with foreign earnings of four hundred billion dollars. Nigerians impoverishment still maintained with masses surviving on lowest capital per head (Sala-I-Martin and Subramanian, 2003).

2.3.2. Crude Oil Economy suffered a lot from Dependent Consequences

In this situation, the nations depend so much on crude oil. This implies that most of its revenue generation will solely come from abroad through the vast exploitation and exportation of crude oil to the global market with low or complete absence of domestic output and meaningful economic opportunities that could serve as sustainable revenue source for the national economy. It also implies a nation with a weak financial system, unstructured and unreliable revenue generation system that will not be able to cater sustainably for its state affairs governmentally, socially, financially and security wise. In fact, fiscally and monetary policies of such nations have no base. The revenue generation in Germany through all forms of tax was estimated approximately to thirty-seven percent of internal production capacity compared to Kuwait and UAE crude oil exporters that have approximately three percent and two percent of their internally generated production output respectively. But according to

the year 2002 statistics, other Arab nations that are non-producers of crude oil generate closely to seventeen percent from their internally generated production output. All these shortcomings among crude oil exporting nations are mainly due to misappropriation of public fund and lack of focus for economic diversification (Karl, 2007).

2.3.3. Crude Oil Revenue is not Accountable

Most of the crude oil revenue being generated in developing nations dropped into an illegitimate purse that is not publicly accountable. The main national of crude oil revenue account is always complex, fraudulently designed, misrepresented and misappropriated in order to broaden the avenue for embezzlement and stealing among the top government officials and their private syndicates (Heilbrunn, 2004). According to the information from USA intelligence section, the large fortunes of money made from crude oil exports in Angola are in the possession of few educated people who constantly used public offices accumulate excessive money and such fraudulent acts are common factor spreading across various aspects of governance (Gary and Karl, 2003). Thus, close to four billion and two million dollars made as earnings from petroleum resources suddenly could not be accounted for. Although, Angola has no information on petroleum earnings while the populace lacks evidence to press charges against the government. Briton Petroleum Conglomerate were ready to disclose how they were paying the Angola public authority on petroleum proceedings but later declined due to the threat of disengaging their services from Angola petroleum sector (Ganesan, 2004).

2.3.4. Huge International Liability

With the high foreign exchange earnings coming from crude oil sector particularly the huge amount of money made through crude oil exportation still many oil exporting nations are highly liable to international loans which accrued so much liabilities on their fragile crude oil dependable economy. Thus, the situation of the global market and price fluctuation determined revenue and cash reserve state. Revenue generated is not judiciously spent on wise diversified projects, investments, and infrastructures, but lavishly spent on unaccountable projects that have no social, economic and environmental values. For instance in Ecuador, the foreign earnings from crude oil exports were not up to the money allocated by the government for

overhauling international financial liabilities or loans. Currently, Ecuador overhauling costs for international financial liability loans of which fifty percent of the earnings derived from crude oil resources (Acosta, 2003).

2.3.5. Communal Clashes and Insecurity

Places, where crude oil resources are being exploited, are usually prone to communal crises and persistent security problems and acts of violence are more in these areas than any other places where there is the absence of crude oil exploitations which vary from twenty-three percent to less than one percent respectively. The author also added the threat of violence even without the presence of mineral resources in the third world nations is probably estimated at the rate of fourteen percent. With the presence of other mineral resources-twenty two percent- the presence of crude oil will trigger close to forty percent threat toward acts of violence (Collier and Hoeffler, 2000).

2.4. Ecological Effects of Crude Oil Exploitations

Crude oil is one of the most complicated environmental resources that contained high molecules of carbon and other related harmful volatile substances which are released knowingly or unknowingly during the course of exploration and exploitation at any point either upstream or downstream. It has severe devastating effects on the well-being of people, living and non-living components of the ecosystem (Kisic et al., 2009). The release of harmful substances into the environment has serious destructive effects that could endanger the existence our bio-diversities both at the terrestrial and marine levels. These effects have been spreading from every point of petroleum exploitation that involves geophysical survey, establishment of exploitation ground, clearing of petroleum fields, boring and blasting of rocky obstacles, construction of conduits for easy transportation of petroleum products, coordination of oil leakages and sanitation of polluted areas and ending exploitation activities (Ko and Day, 2004). Crude oil exploitation pollutes earth particles, minimizes the land use and value inputs of land or land potentials are kept barren for so many decades (Kisic et al., 2009). The rejuvenation of ecosystems after severe destruction by oil exploitation could be very tough, highly capital intensive and time-consuming to regain the original state. Because of the cancerous and harmful fossil substances that crude oil containers,

it becomes so rigorous for an environment to regain its natural quality whether in polar or tropical or temperate or desert areas (Das and Chandran, 2010).

Also, the environmental degradation, shrinking and destruction of the vital parts of the ecosystems are mostly connected to power and massive exploration of fossil fuels. The extinction or gradual reduction of some species of bird families in a western part of North America continent was majorly connected to petroleum exploitation (Lyon and Anderson, 2003). Even many of these marine birds with their communities and natural life succession have been altered due to petroleum contamination (O'Hara and Morandin, 2010). The atmospheric air standard of our cities due frequent high traffic rate with carbon emission, emission from municipal wastes, emission from construction companies and emission from industries all from various sources are basically connected to power and fossil fuels production. The consequences of these lead to the creation of greenhouse effects in the atmosphere, depletion of the ozone layers, emergent of heart-related diseases that affect human health and vegetation loss and vital parts of their functioning systems (Rodriguez et al., 2009).

2.4.1. Air Pollution

Air pollution is among the dreadful challenges affecting crude oil producing nations worldwide. It involves releasing of gas discriminately through persistent combustion that is taking place in the oil field of operation. Only a little quantity of gas is directly utilized and stored for other purposes domestically and industrially. This combustion activity releases several chemical substances into the airspace such as carbon dioxide, carbon molecules, Sulfuric molecules, metallic chemicals, and organic gaseous substances. Approximately two million of gaseous substances of the aforementioned chemicals are combusted every day. Specialists in the field of biological science have asserted that the contamination is only affecting the air environment and its precipitation which in turn endanger the bio-diversities of both the animal and plant communities (Feldt, 2008).

2.4.2. Termination of Vegetation Cover

Building the exploitation field of crude oil involves the movement of massive equipment and facilities which results to removal large span of vegetation covers, creating new road networks and extending the existing ones do more havoc to the

natural vegetation and affect so many wildlife. The vegetation on the path linking the oil field will definitely be cleared away completely. Likewise, the erection of living apartments for oil workers, facilities for petroleum extraction, the casing of extraction facilities and laying of petroleum conduits and airstrip takes several hectares of land with vegetation cover that is eventually cleared. Also, people lose their living environment, cultural homes, and farmland, they longed for relocation and restoration of land which could involve the clearing of another vegetation cover for new homes and farmland (Feldt, 2008).

2.4.3. Water Pollution

The underground and surface water have been terribly polluted from waste substances of crude oil, bottom groundwater of crude oil and metallic chemical substances. The leftover water that needs to be rejected back into the drilling channels were abandoned as surface water, oil corporations deliberately refused to restore the wastewater to the source because it is highly capital intensive to embark on such project after the exploitation of crude oil. Siting Texaco corporation as a case study, they have found wanting of releasing metallic chemical water with an estimated volume of seventy million cubic meters on earth surface which later resulted with formation of more than nine hundred pools within the era of 1964 to 1990. Due to these, many water bodies in Ecuador and oil-producing nations have been polluted and accessing quality water is very difficult (Smith and Gullo, 2008; Patel, 2012).

Similar cases also happen in Canada where the exploration of sandstone petroleum formed water pools that stretch beyond one hundred thirty kilometers square. The metallic chemical substances and Sulfuric emissions endangered the life of the people and the entire ecosystem. Wildlife has to be consistently controlled and monitored so as not to enter contaminated pool water because losing their life is highly obvious. Research conducted in recent times also revealed that over eleven million cubic meters of polluted water move outward from so many segmented pools on daily basis – which have actually affected the ecological endowments and as well endangered their succession. For example the spillage that happens at the seaside of Alaska which polluted an estimated area of one thousand one hundred kilometers and terminated the life of approximately thirty-six thousand flying fowls (Holroyd and Simieritsch, 2009).

2.4.4. Soil Pollution

Petroleum contamination majorly has severe devastating impacts that alter the soil components, soil profile, vegetation cover and soil microbes (Carls et al., 1995). The soil ecological existence through the release of petrochemical substances at the stages of the upstream and downstream activities, strong metallic chemical substances and toxic organic materials are frequently released into the soil environment (Osuji and Opiah, 2007). Basically, soil is an essential environmental endowment that controls all biological, non-biological, physical, natural cleansing and feeding processes and successions of the earth. Crude oil contamination reduces soil nutrients and degraded the soil to the extent that it negatively affects the bio-diversities of that particular environment. Soil stands in the mid of marine environment, land environment and the human that are directly connected to pollution (Bisht et al., 2010; Chibuike and Obiora, 2013). Soil contamination proceeds further to affect the natural feeding connections in the ecosystem, the well-being of human and other wildlife resources are affected by metallic chemical substances and restoration of soil quality will take longer period due to the presence of metallic chemical substances that are degradable (Iwegbue et al., 2006; Bamforth and Singleton, 2005).

2.4.5. Infection Threatens Human Life

Almost all the activities that are carried out during the course of crude oil exploitation have higher tendency threatening human with infection. Such infection threats vary with cancerous infection, congenital problem, nerve disorder, the defection of fetus, skin related infection and experience of threatened abortion among pregnant women (Feldt, 2008). All these infections are caused by metallic chemical substances that are mostly washed away by rainwater and later absorbed into the water bodies of the earth. It is a common event in tropical and temperate regions where these petroleum resources regularly exploited (San Sebastian and Curi, 2000; Hurtig and Sebastian, 2004).

However, there is a direct link between petroleum exploitation and human and ecological well-being. Petroleum exploitation endangered human life particularly in the third world nations where the methods used in exploration are environmentally unviable and native populace do not have adequate knowledge about the environmental consequences of crude oil pollution on their general well-being. The

activities of the oil corporations have altered the quality of the water foundations, ecosystem feeding connectivity and all the natural recovering systems that keep nature at balance (Darkwah, 2010)

2.5. Peoples' Awareness of Environmental Power Resources

Fundamentally, knowledge is quite synonymous to understanding, awareness, and people perception: people knowledge regarding power generation through the science of hi-tech showed more remarkable value as a theme of discussion in learning and strategy finding institutions in European and Northern America continent for the past three decades (Freudenburg, 1984; Wynne, 1982).

The findings revealed the comprehensive views of people on matters relating to uranium energy and keeping of its discarded materials, sustainable power plans that contain high sea and terrestrial breeze, harnessing of sand liquefied gases, extraction and utilization of petroleum by harnessing the CO and facilitating into the reservoir. This finding is facilitated through the zeal of acquiring more understanding in relation to societal and governmental procedures that gives room for open discussion and opinions on threatened hi-tech; these also involve forces that trigger people views. On the basis of past findings with regards to knowledge of power generation and more contentious hi-techs or machinery – this connotes populace views about ecological and hi-tech threats which include diverse agitations and qualitative inquiries that exceed proper evaluation of threat (Thomas et al., 2016).

It does not involve perception of threats and gains being considered by the people; it involves other personal traditional advantages and global perspectives or attitudes, uprising groups and highly impacting actions from the people, agitations regarding people networking and step by step justice, gravity of belief in organization of threat and rules, and agitations for the safeguarding of treasurable environmental resources (Pidgeon et al., 1992; Pidgeon and Demski, 2012).

Actually, the origination of this community threat holds uncommon contentions based majorly on the threat that collaborate societal and governmental matter which positioned as serious dangers to highly traditional areas or communities and personalities that may increase the level of awareness of dangers (Henwood and Pidgeon, 2016; Pidgeon et al., 2003). Basically, the idea of acknowledging danger or threat is often a very difficult and dependent notion (Pidgeon et al., 1992); the

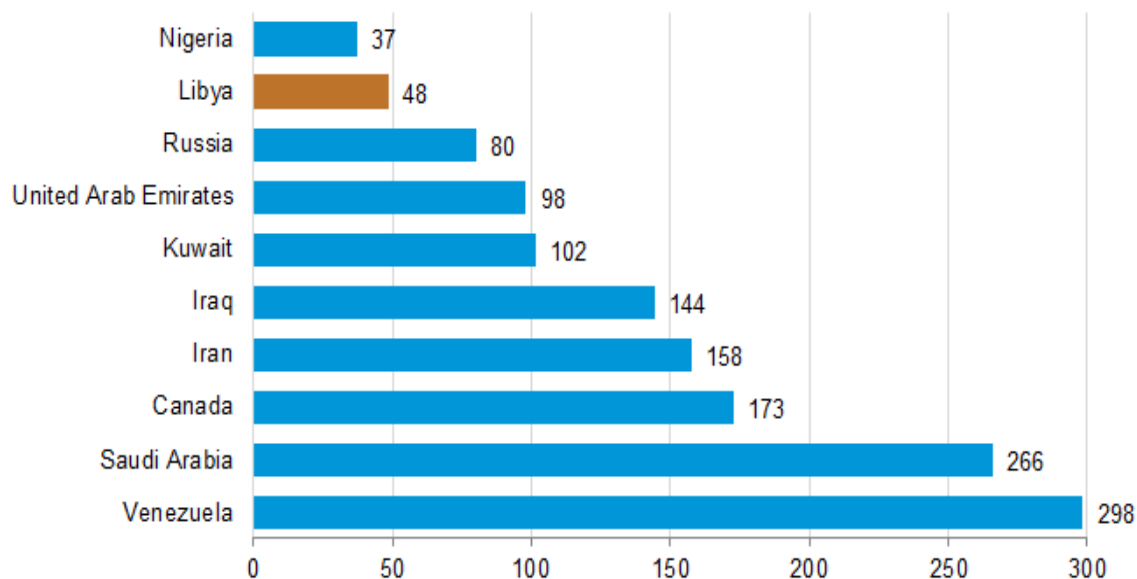
awareness of people attitudes regarding power generation alternatives that include renewable power sources (like biomass, solar, wind, sea waves, hydro-electric power and geothermal) have a role to play in open public discussion across every nation of the world in relation to alternatives power sources that could be ecological viable and generally acknowledged as people prospective power sources, but it should be noted that generally acknowledgeable hi-tech may not or may necessarily be the best viable power alternative source for a vast period of time in any particular nation of the world (Pidgeon et al., 2003).

2.6. Libyan Petroleum Sector

Libyan economy is predominately rooted in oil exploration and exploitation. Petroleum is a major international trading commodity and in fact the main source of foreign exchange earnings and the main driving force behind the Libyan economy. Their petroleum resources are highly rated as quality among other producers worldwide and mostly demanded by many western nations because of the small content of Sulfuric materials. The exploration and sells of Libyan oil to the international market have been hindered by political crisis and revolution that took place in the year 2011. The exploration and commercialization of oil commodity resumed back gradually between the year 2012 and 2013; but still hindered by public uprising, blockage of exploration grounds and transportation especially at Tripoli where most exploitations were largely concentrated. These crises extended to the year 2014 and 2015. The exploration capacity picked up gradually to over four hundred thousand kegs on daily basis compared to one million six hundred and fifty thousand explored daily in the year 2010 (Blashchanitsa, 2014). Libya happens to be the number one biggest producer and reserve of petroleum in Africa; it is also among the first to ten producers of petroleum in the world according to the graph statistics in figure 2 (Xu and Bell, 2016).

Figure 2. The world's top 10 holders of proved crude oil reserves

billion barrels

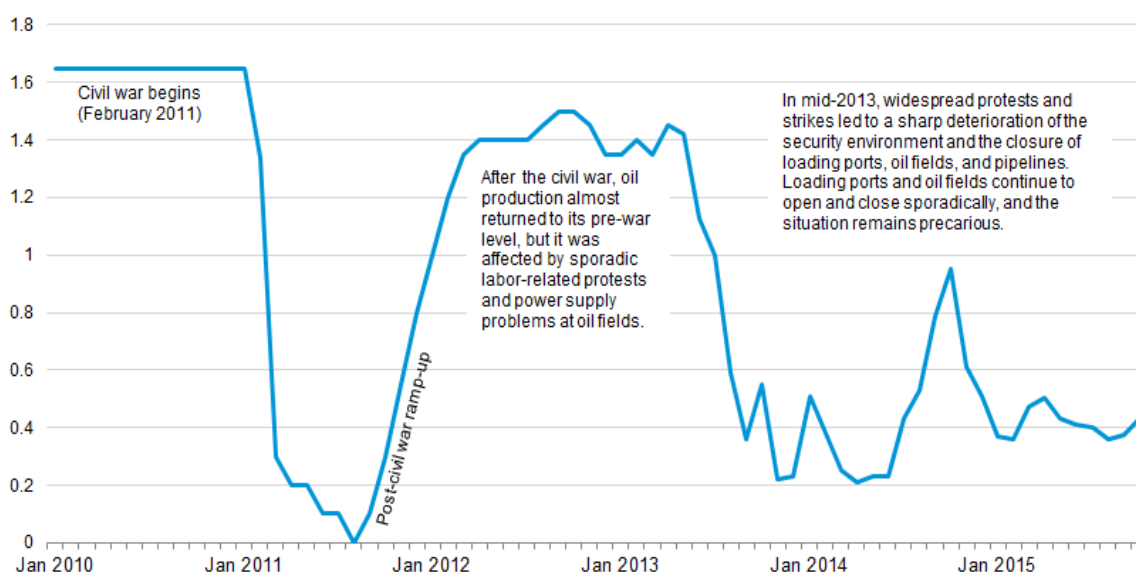


Source: *Oil & Gas Journal*, at the end of 2014

However, before the Libyan political unrest and revolution that affected the petroleum industry with drastic fall in daily exploration rate of steady rising growth from one million four hundred thousand to one million seven hundred and forty thousand in the year 2000 to 2008. Growth of over 1.6 million kegs daily was maintained from 2010 till the first month of 2011 and by the second month of that year 2011 with remarkable fall in production – which later picked up the following year 2012 fluctuating within the range of 1.4 million kegs slightly above and below, later production of petroleum falls greatly below one million kegs daily from the year 2014 to 2015 correspondingly with regards to figure 3 (Khalil and Asheibe, 2015).

Figure 3. Crude oil production in Libya, January 2010 to October 2015

million barrels per day



Source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, November 2015

2.7. Environmental and Socio-Economic Effects of Petroleum Exploitation in Libya

One of the major matters of concern Libyan petroleum industry is basically related to environmental pollution. The matter rests much on the body that handles the rule of laws pertaining to Libyan ecosystem. Ecological rules have been existing with no answer to Libyans' perceived ecological agitations or protests. Even with these, the crude oil industry still faced with so many ecological damages, social amenities and renewability setback (Selim, 2009). This is due to non-abiding to the enacted regulations that are controlling the oil industry and safeguarding the ecosystem (Otman and Karlberg, 2007; Irhoma, et al., 2014). In Libya, contamination of airspace, water, and terrestrial environments particularly the soil receives no attention because of inadequate knowledge, wrong approach and poor level of education relating to ecological matters and concepts (Ali and Harvie, 2013). Considering the fact that Libya is environmentally gifted with diverse bio-diversities but the people have no adequate understanding, administration or organizational framework, hi-tech and science orientation and capitals of ecological renewability that could promote and support commercial development and people well-being (Tolbaand Saab, 2008). Major environmental problems prevailing in the oil industry of Libya are the constant emission of natural liquefied gases and the contamination of water bodies with metallic

chemical substances in reference to figure 4 and 5 (Selim, 2009). There is no comprehensive periodic information disclosure concentrated on the activities of the oil exploiters on the basis of ecological, societal and commercial effects of their operations; emphasis should be on oil conglomerates that are not ecologically and infrastructural viable (Singh et al., 2009).

Other factors that contributed adversely to the manifestation of the environmental effects that Libyans are experiencing in their crude oil sector are poor leadership which depicted common remarkable issues that need to be addressed in most developing nations across the Arab continent, Africa and Venezuela. It also showed the absence of governmental will and determination to reform the crude oil sector (Mehlum et al., 2006; Humphries et al., 2011). Mismanagement and financial malpractices have dominated this sector which in turn make the environmental control ministries to be powerless and inactive to their service in protecting the environment and the people well-being. These make the oil conglomerates to fail in organizational societal obligations through financial supports and other related services to the environment (Amundsen et al., 2010).

Absence of empirical findings or surveys on the part of the people and government to ascertain the environmental and people's conditions in relation to oil exploitations, such that all activities of the oil conglomerates are not properly checked from the stages of installation and production, transportation of crude oil to refinery and distribution which could be connected to inexperienced staff and absence of facilities and aids that will facilitate their findings (D'amato et al., 2009). Most oil conglomerates in Libya concentrated more on the development of hi-tech facilities that will enhance effective exploration of crude oil (by decreasing production expenses) or by using the existing old hi-tech facilities at the expense of the people and the environment – which commonly dominate the crude oil sector of Libya. Oil conglomerates were also affected by the existing and present governmental structure of Libyan society which has no commitment to reducing the ecological effects of oil exploitation (Escobar and Vredenburg, 2011).



Figure 4: Inspections and Cleaning of Polluted Site in Libya (Sourced from Google Search, Images of Oil Pollution in Libya).



Figure 5: Pollution Site in one of the Coastal areas in Libya (Sourced from Google Search, Images of Oil Pollution in Libya).

On the aspect of socio-economic effects of oil exploitation, severe impoverishment dominated the state of Libya prior to the finding of petroleum in the year 1959. The revenue on each headcount was far below fifty dollars annually. It is a predominately agrarian society with the absence of energy and other valuable environmental endowments. Farming advancement is restricted due to the low amount of rainfall, high temperature, persistent drought and desertification, poor soil fertility, incompetent human population and primitive or local workmanship (Higgins, 1959).

The exploitation of crude oil has transformed and prospered the state of Libya economically and socially (Terterov and Wallace, 2002). Revenue on each headcount of individual increased from fifty dollars to one thousand seventy dollars annually. The commercial system of Libya has shifted from farming, clothe- making and vocational works to a petroleum commercialized state, It indeed adversely changed the farming economy which contributed approximately thirty percent of general internal production and created jobs for over seventy percent for the population at the prime time of the year 1950. Now farming has become inactive and has minimum impacts on the growing commercial sectors that rely on crude oil proceeds (St John, 2008).

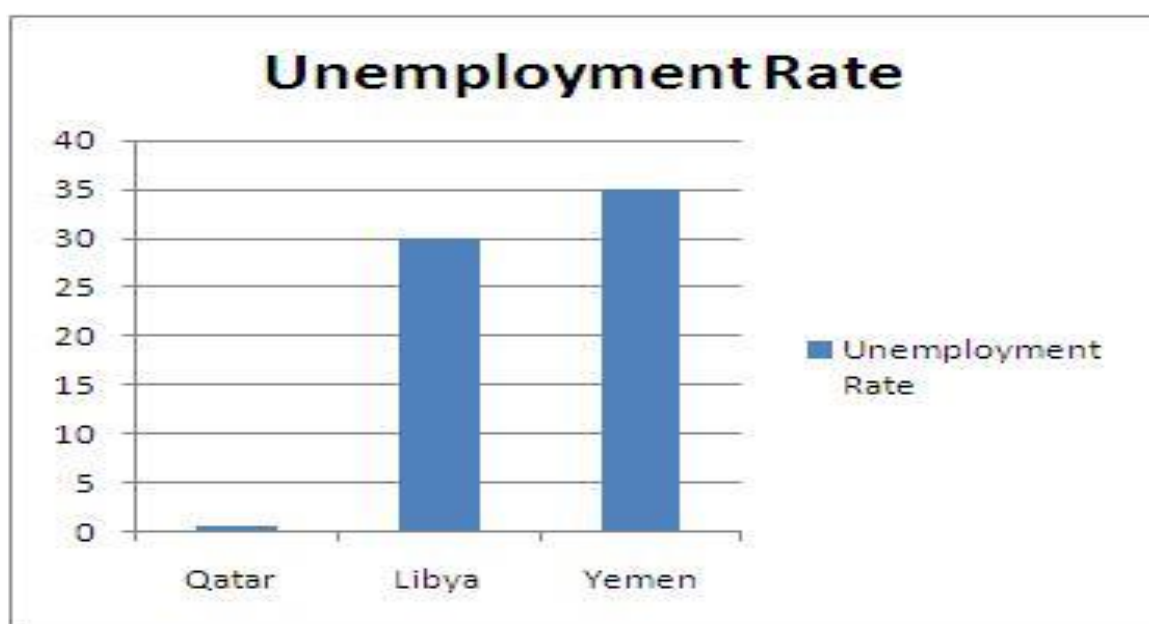


Figure 6: Graph Showing the Statistics of Unemployment Rate in Libya (Sourced from Google Search, Images of Oil Pollution in Libya).

On the contrary, crude oil earnings both domestically and internationally have contributed immensely to the socio-economic growth of Libya state in the areas of job creation, formal schooling and literacy advancement, social amenities, viable water schemes, medical services, transportation, human resources building capacity, adequate housing provision and facilities, advancement of aviation industry, availability of loan facilities for individual investments (Aschauer, 1989a; Aschauer, 1989), reduced expenses on individual investments due to government subsidizing policies, adequate standard of living at low costs, adequate security with low crime rate, regular electricity supply, availability of raw materials for petrol chemical and

local manufacturing companies (Morrison and Schwartz, 1996). All these are generally perceived as positive socio-economic effects of oil exploitation by the Libyan populace. With the remarkable contribution of the crude oil sector in Libya, the unemployment rate still remains as high compared to the oil-producing nations like the state of Qatar (See details in Figure 6).

CHAPTER III

RESEARCH METHODOLOGY

This particular chapter focused on the techniques that utilized in the collection of statistical facts and evaluation of research works. It explained the motive for the selection of research field, stated the processes and rules that were applied immediately. The finding of facts is the methodological technique of gathering, assessing and clarification of empirical statistics to discover the latest understanding and provide solutions to some fundamental issues in relation to the study theme, objectives, problem statements, and research questions or hypotheses. Methodological study is a fundamental and common process in a study theme. Virtually all studies should be observed on the basis of pre-requisites regarding a selected research method which may be by interviewing, filling in forms, questionnaires, and surveillance of study areas by proper documentation (Silverman, 2013).

3.1. The Study Plan

A study plan refers to a program of study. It involves problems statements which may vary from four and above that should be in connection to the research theme, research questions or postulated hypotheses, nature of statistics to be gathered, sortation of valuable facts and method that could be used to evaluate the outcomes of the study. Basically, it is mostly based on formulated study questions and experience of the scholars (Silverman, 2013). Thus, narrative and inferential techniques were adequately used and observed accordingly. The research work focused on a specific area in Tripoli to collect empirical facts without covering vast areas because of the enormous population densities of Tripoli. The scope of population coverage was narrowed down to 400 respondents.

3.2. Characteristics of Research Areas

Tripoli is the administrative capital and the biggest metropolitan of Libya with an overall land mass of about one thousand one hundred forty-three kilometer square and runs side by side with the Mediterranean seashore. The cosmopolitan coverage of Tripoli is made up of nine localities that exclusively involve Tripoli central areas, Hey Alandlus, Alswani, Ain Zara, Abuslim, SuqAjumma, Tajoura, Janzur, and Kaser Ben

Ghashir. It has the highest population of about one million one hundred and eighty-eight. It is located at the northwestern part of Libya in between the desert region and Mediterranean seashore. Tripoli has been strategically structured as a big city for so many decades by the Phoenicians, Greeks, Romans, Arabs, Muslims, Ottomans and Italians. The metropolitan city of Tripoli is highly connected socially, economically, traditionally and politically to modernization and is influenced by different colonial masters. Due to the influence of diverse colonial masters with their uniqueness of backgrounds, these have actually altered the existing traditions, socio-economic, political and environmental perceptions of the inhabitants over so many decades till the present age (Cohen, 2002).

In fact, the metropolitan area of Tripoli and Benghazi are experiencing a steady progressive population growth with a city expansion growth rate of approximately ninety-six and eighty-five percent respectively because of the economic prosperity and socio-economic benefits and the positive environmental impacts of crude oil exploration. The implication is that the rural population in Libya is seriously declining due the abundant opportunities related to oil exploitation that are attributed to the metropolitan settlements of Tripoli as detailed in figure 7 showing population distribution densities. State city planners are now taking drastic steps to control the rural-urban drift. Social amenities have been overstretched and that call for the need to extend infrastructural development to the under developing rural areas (Otmanand Karlberg, 2007).

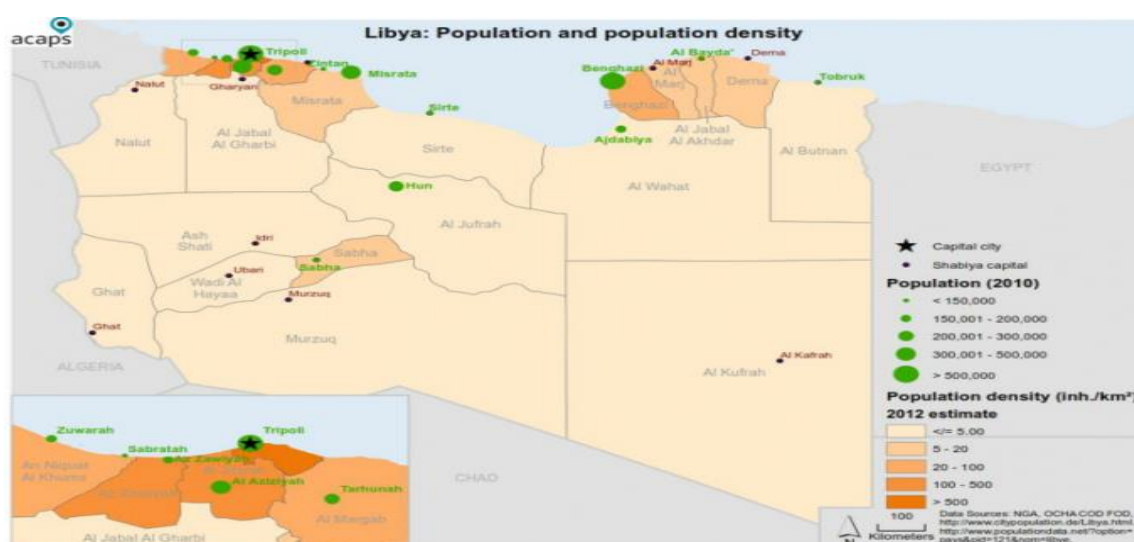


Figure 7: Map of Libya Showing Population Distribution Densities with Specific Target on Tripoli.

3.3. Sample Size and Sampling Technique

It is the overall people in which the on-going study is directed to in order to finalize the verdict of the findings collected from the study area. These focused people vary demographically according to their age, gender, marital status, educational status, occupational and income status. The data collected from the respondents would serve as reference points to all the findings being evaluated during the course of study. The study area comprises of nine districts that are located in Tripoli catchment of Libya. The entire district would be stratified and exactly three hundred questionnaires would be administered to the respondents on a random basis. Thus, it is very vital to set up research aims before setting out for field investigation. The number of respondents must be decided with appropriate size that could be used to represent the general population of the study area. In addition, the study area must be well structured for easy sampling of the respondents so as the questionnaires are distributed accordingly.

Sampling involves selection of respondents among numerous populaces in a targeted study field (Mugenda and Mugenda, 2003). This implies that summaries and findings which have been investigated in the research could be generally accepted as opinions representing the whole populace. In this on-going study, stratified and random sampling was used as a technique to access the respondents on the basis of equal representation of opinions related to the study objectives.

3.4. Data Collection Method

The residents of the study area were first of all informed and well oriented about the study particularly on the benefits it could be brought to the entire Libyan society. Consent of approval was actually received from the people and Municipal Area Council of the targeted study area. The study instrument (questionnaires) were administered and collected on one on one basis for the period of twenty-one days.

3.5. Data Analysis Techniques

The data was gathered and assessed through inferential and descriptive data analysis which also included statistical diagrams (like table and pie chart) to represent Libyans' perception of the matters clearly defined and structured in the instrument of study according to the proposed sub-problem statements. The information gathered from the respondents were entered accurately, analyzed and deduced through statistical software called Statistical Package for Social Science (SPSS). These

eventually served as a base for the study data analysis, conclusions, and suggestion for policymakers and scholars or researchers who intend to do further research.

3.6. Ethical Considerations

All the ethical rules and official courtesy were duly observed, which involved getting the approval, audience and confidentiality assurance from the respondents. The respondents' willingness to be interviewed and share views about oil exploitation in their locality were quite encouraging and added more positive impacts to the actualization of this research. The respondents were well informed about the motives of the study and the significance of their involvement that would make the research meaningful and accomplished. In fact, the respondents were duly regarded and counted as very special people. This is one of the principal rules of moral practice in research activities (Schutt, 2009). The involvement of this moral practice in research makes the respondent more open-minded, comfortable and willing to share their opinions with sincerity without any distortion of information. All the information given were treated as classified data which are judiciously used for the motives of this study without any intention to divert the respondents information for any other functions may be political or otherwise. The moral principles of research were also observed during the data assessment stage. The reliability of the given information was equally observed and well represented through efficient classification of opinions being gathered from the respondents. All these were done in order to ascertain the reliability, originality and the authenticity of the data used for this study (Schutt, 2009).

CHAPTER IV

FINDINGS, ANALYSIS, AND INTERPRETATION

4.1. Findings

4.1.1. Descriptive Analysis of the Demographic Profile of the Respondents

The results of the field survey from Tripoli metropolitan city vary significantly because different categories of people as respondents were given the opportunity to be represented without any biasedness in our questionnaire distribution and management according to gender, marital status, educational qualification, age, occupation, and monthly income level. All these aforementioned demographic profiles were collected, imputed, analyzed and interpreted with reference to appropriate citations to back up the results of our findings in relation to the Libyans perception of the environmental and socioeconomic impact of oil exploitation in Tripoli. So, all these were done critically according to the information offered by the respondents below:

4.1.2. Gender Profile of the Respondents

The outcomes of the investigation and interpretation were revealed in Table 1 and Figure 8 below, which shows a vary of responses from the two main gender categories.

Table 1

Gender of the Respondents

		Frequency	Percentage
Gender	Male	220	55.3%
	Female	163	41.0%
Total		383	96.2

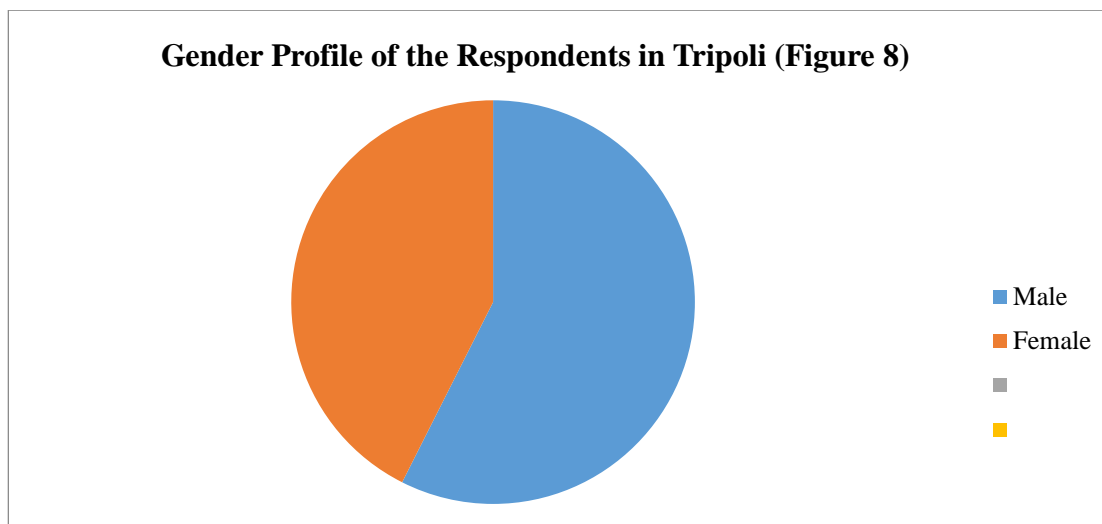


Figure 8. Gender Profile of the Respondents in Tripoli

The results of the survey indicated a very high response from the male than the female, with 53.3% to 41.0% respectively. It otherwise showed how active and concerned environmentally and socioeconomically are the male over the female consciousness. The male were more active in this research survey than the female counterparts. This result tends to support the assertion that sex differences mostly regard female to a family making affairs particularly in the countryside settings, but this possibly contradicts the drive of modern urban life where female are socially and environmentally active (Dunn, 2016).

4.1.3. Assessment of Respondents on the Basis of Marital Status

The result from the field investigation showed a wide disparity of response especially from the male that has a very rate of a percentage than the female as evidently in Table 2 and Figure 9 below.

Table 2.

<i>Marital Status of the Respondents</i>			
Marital Status	Single	145	36.4%
	Married	213	53.5%
	Divorced	39	9.8%
Total		397	99.7

Furthermore, the outcome of the field revealed that more married people regardless of their gender participated more than the single and divorced people from 53.5% to 36.4% and 9.8% correspondingly.

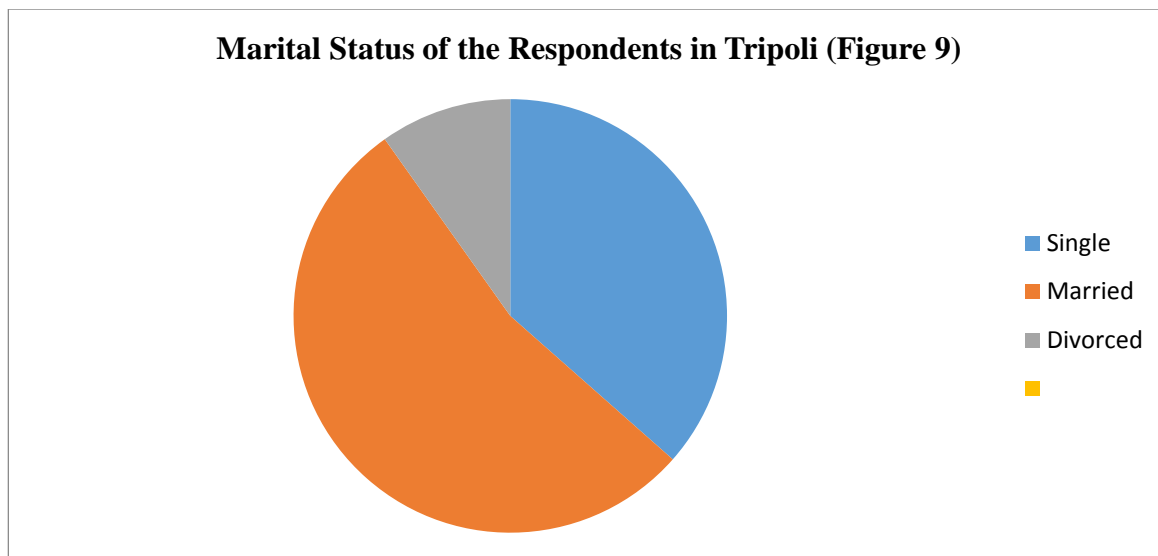


Figure 9. Marital Status of the Respondents in Tripoli

These imply that the married people showed more enthusiasm, willingness and great responsibility in this research survey than the single and divorced people. It also indicated that the married people have a lot of interests at stake than the single and divorced people. The attitudes that people sometimes display on issues affecting our immediate environment could be largely influenced by our societal status which every researcher must have knowledge of while dealing with different personalities (Gaspar et al., 2010; Devine-Wright, 2007).

4.1.4. Assessment of Educational Level of the Respondents

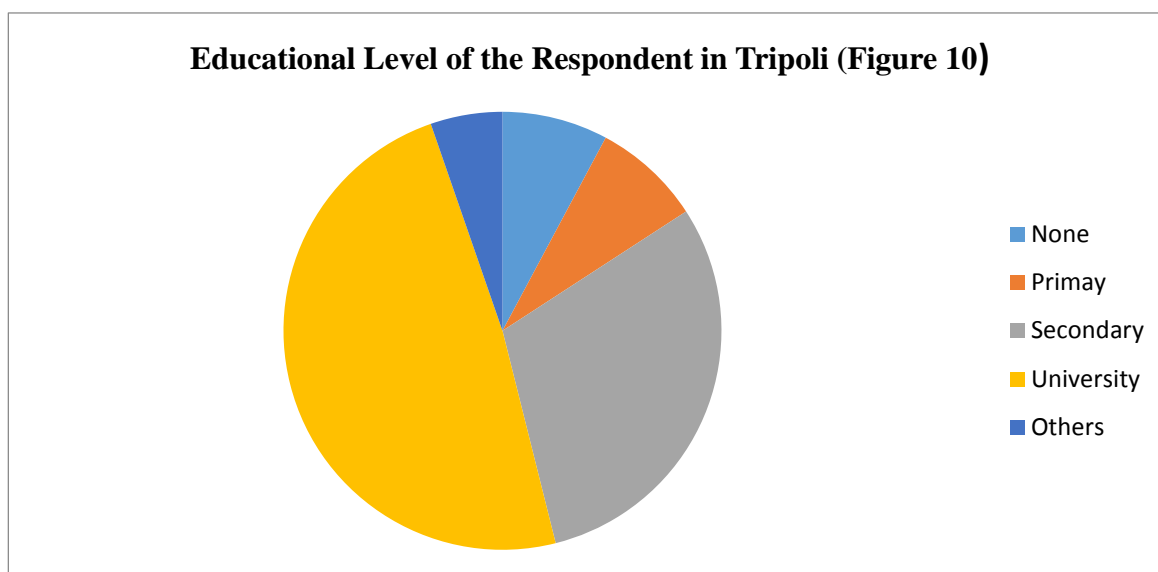
The survey that was carried out in Tripoli regarding the educational level of the respondents covered different categories from formal to informal and non-classified educational qualifications as vividly displayed in Table 3 and Figure 10 below.

Table 3.

Educational Level of the Respondents.

Level of education	None	31	7.8%
	Primary	32	8.0%
	Secondary	120	30.2%
	University	193	48.5%
	Others	21	5.3%
	Total	397	99.7

The final result of the survey showed that most educated people in Tripoli were covered; respondents that obtained university degrees were rated as 48.5%, followed by secondary school education category 30.2%, primary school category 8.0%, none which signified the illiterate people were rated as 7.8% and other which were informally educated people 5.3%.

**Figure 10.** Educational Level of the Respondent in Tripoli

In fact, the educated people from university to primary levels were actively involved in this survey study showing a remarkable participation from different categories of education and personality. The academic achievement in life or qualification determined individual capacities and the manners in which everyone responded to issues regarding the events prevailing in the society (Dietz et al., 1998).

4.1.5. Assessment of Age Category of the Respondents

The survey ran across different age categories from the least age to the peak age and the response was highly supported on the basis of Table 4 and Figure 11 below.

Table 4.

Age Category of the Respondents

Age Category	Below 15 years	9	2.3%
	15 to 20	39	9.8%
	21 to 25	65	16.3%
	26 to 30	62	20.6%
	31 to 35	91	22.9%
	35 and above	112	28.1%
	Total	398	100.0

Although, there was disparity in response from the different age categories; more response actually comes from age category 35 and above to 31 to 35, 26 to 30, 21 to 25, 15 to 20 and below 15 – with percentage rating of 28.1%, 22.9%, 20.6%, 16.3%, 9.8%, and 2.3% respectively.

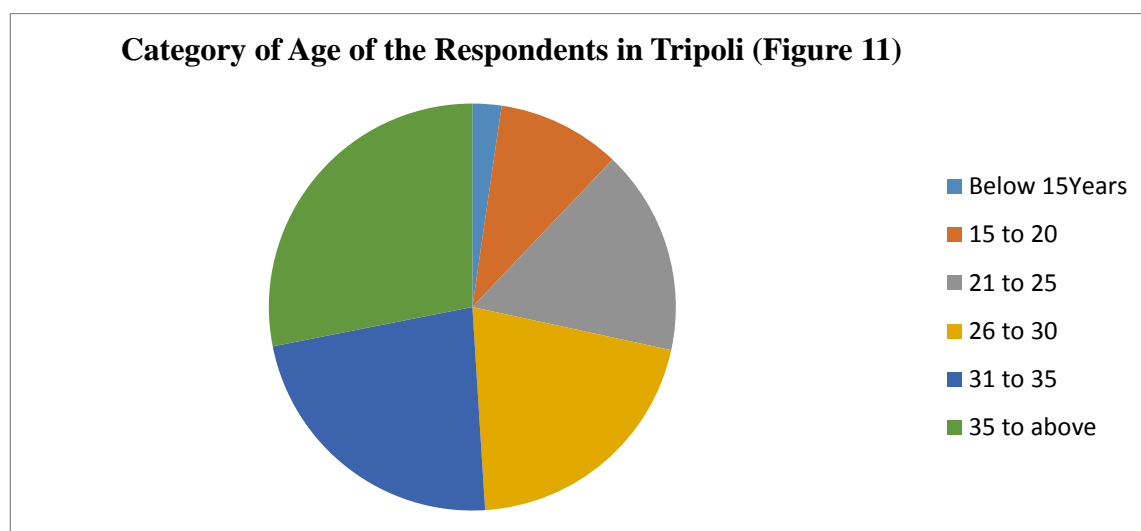


Figure 11. Category of Age of the Respondents in Tripoli

The survey revealed significantly the most active and working population of Libyan society geometrically rising in percentage from below age 15 to 35 above. Age is basically important in such public surveys like this study. The most matured responded to this survey with high percentage rate and it kept on dropping in percentage till the least matured age. These imply that people's responses to the public survey could be strongly influenced by their age category, as it is revealed in this survey (Stern, 2000).

4.1.6. Assessment of Occupation Category of the Respondents

The research covered so many occupational groups from primary to secondary and white collar occupation, which positively contribute to the socioeconomic, political and environmental activities in Libyan society. None of the occupational groups in Libya was left out during the public survey as depicted in Table 5 and Figure 12 below.

Table 5.

Occupational Category of the Respondents

Occupation	Farmer	25	6.3%
	Fishermen	17	4.3%
	Trade	42	10.3%
	Student	126	31.7%
	Hunter	16	4.0%
	Civil servant	143	35.9%
	Others	21	5.3%
Total		390	98.0%

As earlier emphasized, the result of the survey showed all the occupational groups that have strong socio-economic indicators in Libyan economy. The civil servants were the most highly occupational groups with 35.9% rate followed by students who were regarded as dependent population, 31.7%, trade 10.3%, Farmers 6.3%, others 5.3% and fishermen 4.3%.

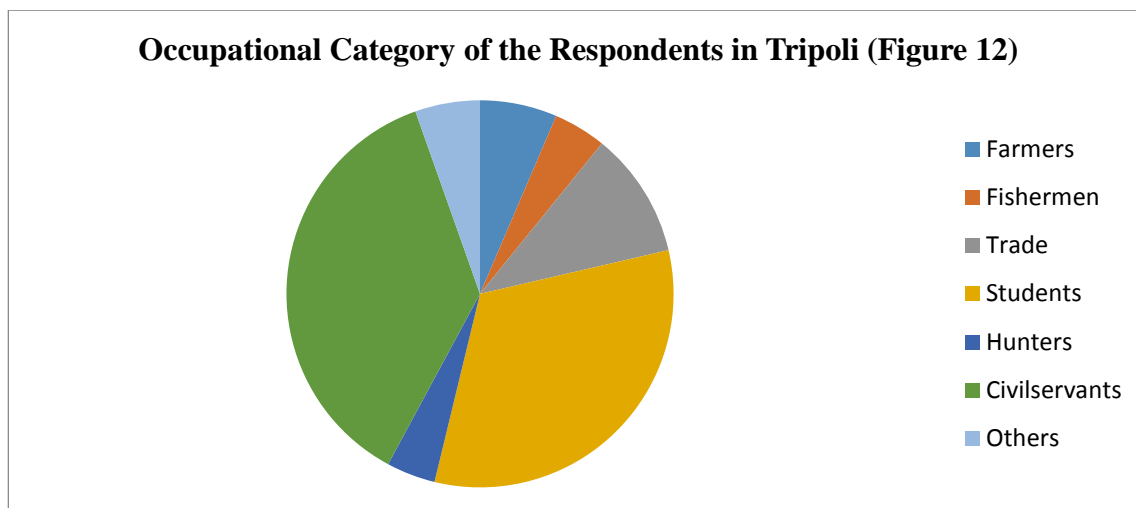


Figure 12. Occupational Category of the Respondents in Tripoli

This occupational survey of Libya indicated a positive demographic profile with more than 62% of the population regarded or categorized as active or working population, contributing greatly to the national income, Gross Domestic Product (GDP) and productivity output of Libyan economy. It is so crucial according to several researches that different conceptual frameworks are formulated. The end results revealed that occupational groups in which someone belongs will be a strong determinant factor to responses to issues bordering the society both socio-economically and environmentally (Berenguer et al., 2005).

4.1.7. Assessment of Monthly Income Levels of the Respondents

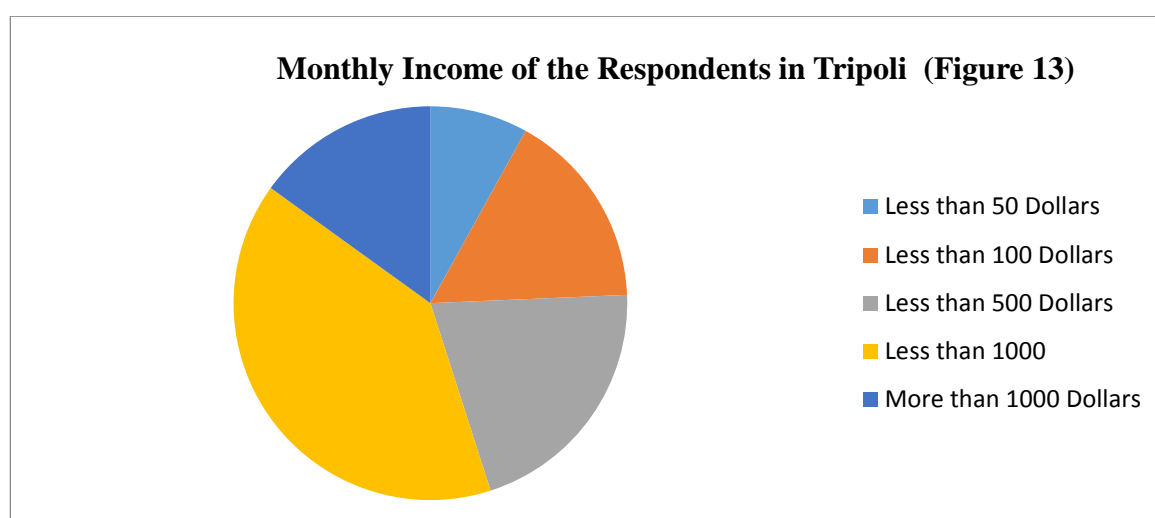
The study survey ran across various income levels, but high responses actually emerged from Middle-income earners and followed by higher income earners and lastly low-income earners as illustrated in Table 6 and Figure 13 below.

Table 6.

Monthly Income Levels of the Respondents

	Less than 50 dollar	31	7.8%
	Less than 100 dollar	63	15.8%
Monthly income			
	Less than 500 dollar	80	20.1%
	Less than 1000 dollar	154	38.7%
	More than 1000 dollar	58	14.6%
	Total	386	97.0

On the basis of comparison especially with the advanced countries of the world, the monthly income level of various classes does not depict the economy prosperity of Libyan society with a rich oil- producing economy compared to the oil-rich counterparts in the Middle East region such as Qatar, Saudi Arabia, United Arab Emirate, Omen, Bahrain and Kuwait.

**Figure 13.** Monthly Income of the Respondents in Tripoli

However, for people actively involved in all affairs of the society high-income levels play a remarkable role giving voice to the people while low income relegates the voice of the people. In fact, people would be socially active as shown from the result of the public survey. People of average income and higher income responded in the high percentage that ranging from 38.7% (Below 1000 Dollars) to 20.1% (Below 500 Dollars), 15.8% (Below 100 Dollars) and 14.6% (More than 1000 Dollars) separately; while the lowest income earners indicated just 7.8%. Thus, response, interest and full involvement on social and natural surroundings related matters could mainly rest on people financial capacities, mostly connected to the capital per head (Stern et al, 1999).

4.2. A Descriptive Analysis of the Perceived Environmental and Socio-economic Impact of Oil Exploitation in Tripoli

4.2.1. The Perceived Environmental Benefits of Oil Exploitation among Libyan People in Tripoli

According to the result of Table 7 shown below, the issues of environmental concerns regarding the positive impact indicated various variations of responses. Some people strongly agreed, agreed, neither agreed nor disagreed, disagreed and strongly disagreed.

Table 7.

Perceived environmental benefits of Oil Exploitation in Tripoli

RQ	Response	Frequency	%
Reduced carbon emissions/ air pollution through the non-usage of coal	Strongly agree	84	21.1
	Agree	184	46.2
	Neither agree nor disagree	97	24.4
	Disagree	28	7.0
	Strongly disagree	4	1.0
	Total	397	99.7
Forced the state to address water conservation issues	Strongly agree	92	23.1
	Agree	191	48.0
	Neither agree nor disagree	80	20.1
	Disagree	23	5.8
	Strongly disagree	7	1.8
	Total	393	98.7
Oil companies seriously comply with environmental rules	Strongly agree	100	25.1
	Agree	161	40.5
	Neither agree nor disagree	107	26.9
	Disagree	25	6.3
	Strongly disagree	4	1.0
	Total	397	99.7
Patronage of health and safety by oil companies	Strongly agree	173	43.5
	Agree	133	33.4
	Neither agree nor disagree	58	14.6
	Disagree	29	7.3
	Strongly disagree	4	1.0
	Total	397	99.7
Natural and Bio-diversities are usually considered	Strongly agree	74	18.6
	Agree	170	42.7
	Neither agree nor disagree	133	33.4
	Disagree	15	3.8
	Strongly disagree	5	1.3
Total		397	99.7

The respondents in Tripoli metropolitan city gave various responses to environmental benefits of oil exploitation on the reduced carbon emissions/air pollution through the non-usage of coal – which accounted 21.1% strongly agree,

46.2% agree, 24.4% neither agree nor disagree, 7.0% disagree and 1.0% strongly disagree. The Libyan state emphasis on water issues were rated as 23.1% strongly agree, 48.0% agree, 20.1% neither agree nor disagree, 5.8% disagree and 1.8% strongly disagree. On the basis of Oil companies complying with the environmental rules on the downstream and upstream sectors, the result depicted a strong significant of agreement of 40.5%, 26.9% neither agree nor disagree, 25.1% strongly agree, 6.3% of disagree and 1.0% strongly. Patronage of health and safety by Oil companies as perceived by the Libyan people varies as 43.5% strongly agree, 33.4% agree, 14.6% neither agree nor disagree, 7.3% disagree and 1.0% strongly disagree, while their perceptions of natural and bio-diversities usually considered by Oil companies showed a wider margin of 42.7% agree, 33.4% neither agree nor disagree, 18.6% strongly agree, 3.8% disagree and 1.3% strongly disagree. The environmental perceptions rating showed a high remarkable number of respondents supporting that the Oil companies were protective of the environment in terms of reducing pollution, addressing water conservation issues, complying with environmental regulations, promotion of health and safety as well as protection of natural surroundings. It is expedient to initiate influential enlightenment among people of various attitudes at a very broad scope of study in order to have a wider range of perceptions to toward the immediate surroundings and human activities (Stern and Gardner, 1981).

4.2.2. The Perceived Negative Environmental Impacts of Oil Exploitation among Libyan People in Tripoli

The result of the responses that were collected and analyzed on this aspect according to Table 8 below showed a high percentage of acknowledgment rate to perceived negative environmental impacts due to the oil exploitation in Tripoli. The negative environmental impacts as perceived by the Libyan people are so great that it covers most vital parts of the environment and human activities.

Table 8.

Perceived Negative environmental impacts of Oil Exploitation in Tripoli.

RQ	Response	Frequency	%
Contamination of water quality	Strongly agree	97	24.4
	Agree	183	46.0
	Neither agree nor disagree	73	18.3
	Disagree	38	9.5
	Strongly disagree	7	1.8
	Total	398	100.0
Distraction due to noise/ dust / light / odor	Strongly agree	112	28.1
	Agree	193	48.5
	Neither agree nor disagree	55	13.8
	Disagree	31	7.8
	Strongly disagree	5	1.3
	Total	396	99.5
Harming of domestic livestock and wildlife	Strongly agree	62	15.6
	Agree	112	28.1
	Neither agree nor disagree	130	32.7
	Disagree	77	19.3
	Strongly disagree	16	4.0
	Total	397	99.7
Degradation of the rural landscape and natural habitat	Strongly agree	54	13.6
	Agree	160	40.2
	Neither agree nor disagree	128	32.2
	Disagree	41	10.3
	Strongly disagree	13	3.3
	Total	396	99.5
Potential for earthquakes	Strongly agree	71	17.8
	Agree	127	31.9
	Neither agree nor disagree	103	25.9
	Disagree	77	19.3
	Strongly disagree	17	4.3
	Total	395	99.2
Problems of air pollution, the release of methane, soil contamination, the danger of oil spillage, waste water, and climate change effects	Strongly agree	76	19.1
	Agree	192	48.2
	Neither agree nor disagree	84	21.1
	Disagree	37	9.3
	Strongly disagree	7	1.8
Total		396	99.5

Abandoning of other natural resources contributes to too much reliance on fossil fuels.	Strongly agree	56	14.1
	Agree	88	22.1
	Neither agree nor disagree	177	44.5
Abandoning of other natural resources contributes to too much reliance on fossil fuels.	Disagree	67	16.8
	Strongly disagree	10	2.5
Total		398	100.0

However, as a point of emphasis, the responses covered every component of the environment and human endeavor such as contamination of water quality with 46.0% of agree, 24.4% of strongly agree, 18.3% of neither agree nor disagree, 9.5% of disagree and 1.8% of strongly disagree. The perceived distraction rate due to noise/dust/light and odor were rated with dissatisfaction of 48.5% agree, 28.1% of strongly agree, 13.8% of neither agree nor disagree, 7.8% disagree and 1.3% of strongly disagree. On issues relating to harming of domestic livestock and wildlife by oil exploitation the people exhibited a mild level of dissatisfaction with 32.7% neither agree nor disagree, 28.1% agree, 19.3% disagree, 15.6% strongly agree and 4.0% strongly disagree. Considering the degradation caused by the oil companies to the rural landscape and natural habitat, the perceptions of the people varies as 40.2% of agree, 32.2% of neither agree nor disagree, 13.6% of strongly agree, 10.3% of disagree and 3.3% of strongly disagree. The possibility of earthquakes happening during the course of oil exploitation were accounted as 31.9% of agree, 25.9% of neither agree nor disagree, 19.3% of disagree, 17.8% of strongly agree and 4.3% of strongly disagree. Perceptions of the people of other related environmental problems (such as air pollution, release of methane, soil contamination, danger of oil spillage, waste water and climate change) varies with 48.2% of agree, 21.1% of neither agree nor disagree, 19.1% of strongly agree, 9.3% of disagree and 1.8% of strongly disagree. While the responses regarding too much reliance on fossil fuels at the expense of other natural resources – showed high significant rate of people neither agree nor disagree 44.5%, 22.1% of agree, 16.8% of disagree, 14.1% of strongly agree and 2.5% of strongly disagree.

Aggregately, the result indicated highly negative perceptions of the environmental impacts of Oil exploitation in Tripoli. The percentages of people neither agree nor disagree were so high to some extent, which could likely be due to lack of

environmental knowledge and public awareness especially from the part of the Libyan government and other environmental frontiers. The highly crucial part of our contemporary world is the significant passion for the immediate surroundings and how it could be protected sustainably (Hodgkinson and Innes, 2000).

4.2.3. The Perceived Positive Socio-economic Impacts of Oil Exploitation among Libyan People in Tripoli

The opinions of the respondents on the positive socio-economic impacts of oil exploitation in Tripoli vary from their demographic profiles and how they probably understand social and economic matters. Thus, Table 9 below shows remarkable responses from our various respondents on the improvement of the local economy with high rate of 42.7% as agree, 37.2% of strongly agree, 12.8% of neither agree nor disagree, 5.5% of disagreeing and 1.3% of strongly disagree; revenue and tax generation from an oil operation.

Table 9.

The Perceived Positive Socio-economic Impacts of Oil Exploitation in Tripoli

RQ	Responses	Frequency	%
Improvement of the local economy	Strongly agree	148	37.2
	Agree	170	42.7
	Neither agree nor disagree	51	12.8
	Disagree	22	5.5
	Strongly disagree	5	1.3
	Total	396	99.5
Revenue and tax generation (increased income for people in gas businesses and wealth creation, benefits from chemical, energy and water services industry)	Strongly agree	118	29.6
	Agree	151	37.9
	Neither agree nor disagree	79	19.8
	Disagree	39	9.8
	Strongly disagree	11	2.8
	Total	398	100.0
Opportunity for job creation (new business and restaurant creation)	Strongly agree	160	40.2
	Agree	147	36.9
	Neither agree nor disagree	46	11.6
	Disagree	34	8.5
	Strongly disagree	8	2.0
	Total	395	99.2

Infrastructural development (improved in local services/school/libraries/roads, increased population with housing/property values, created new research and development for the state universities)	Strongly agree	148	37.2
	Agree	170	42.7
	Neither agree nor disagree	51	12.8
	Disagree	22	5.5
	Strongly disagree	5	1.3
Total		396	99.5
Generation of energy (increased in Libyan energy production/security, new markets and uses for natural gas)	Strongly agree	113	28.4
	Agree	162	40.7
	Neither agree nor disagree	90	22.6
	Disagree	27	6.8
	Strongly disagree	5	1.3
Total		397	99.7
Foreign business interaction	Strongly agree	118	29.6
	Agree	157	39.4
	Neither agree nor disagree	68	17.1
	Disagree	45	11.3
	Strongly disagree	9	2.3
Total		397	99.7
Community development (benefit to local charities/non-profit organizations, the creation of new awareness/ positive publicity for the region, improved community tribal relations)	Strongly agree	140	35.2
	Agree	128	32.2
	Neither agree nor disagree	62	15.6
	Disagree	44	11.1
	Strongly disagree	23	5.8
	Total	397	99.7
Reduction of natural gas prices	Strongly agree	96	24.1
	Agree	169	42.5
Reduction of natural gas prices	Neither agree nor disagree	94	23.6
	Disagree	34	8.5
	Strongly disagree	3	0.8
Total		396	99.5

Income and wealth for the people in gas, chemical, energy and water related businesses which strongly put a vital plus to Libyan micro economic growth with 37.9% of agree, 29.6% of strongly agree, 19.8% of neither agree nor disagree, 9.8% of disagree and 2.8% of strongly disagree. The impacts also extended to several jobs creations with respondents response of 40.2% strongly agree, 36.9% of agree, 11.6%

of neither agree nor disagree, 8.5% of disagree and 2.0% of strongly disagree. Infrastructural development resulted in improvement in local services, schools, libraries, road construction, housing development and increment in property values, new research and development for all state universities for which responses vary with 42.7% of agree, 37.2% of strongly agree, 12.8% of neither agree nor disagree, 5.5% of disagree and 1.3% of strongly disagree. Opinions on whether energy generation (in terms of energy production and security, new market and values for natural gas) has impacted Tripoli socio-economically were rated with 40.7% of agree, 28.4% of strongly agree, 22.6% of neither agree nor disagree, 6.8% of disagree and 1.3% of strongly disagree. Responses on whether oil exploitation has created foreign business interaction differ with 39.4% agree, 29.6% strongly agree, 17.1% neither agree nor disagree, 11.3% disagree and 2.3% strongly disagree; impact on community development were highly supported with 35.2% strongly agree, 32.2% agree, 15.6% neither agree nor disagree, 11.1% disagree and 2.3% strongly disagree; lastly, most respondents showed their satisfaction on reduction of natural gas prices due to oil exploitation with 42.5% agree, 24.1% strongly agree, 23.6% neither agree nor disagree, 8.5% disagree and 0.8% strongly disagree. Moreover, summarizing this appraisal on the perceived positive socio-economic impacts of oil exploitation in Tripoli depicting that over 66% of the respondents agreed with all the impacts on the basis of improvement of local economy, revenue and tax generation, opportunity for job creation, infrastructural development, improvement of energy generation, foreign business interaction, community development and reduction of natural gas prices. The positive impacts of oil exploitation from a societal perspective are to transform this natural endowment above revenue generation into vital communal physical facilities like efficient medical delivery, recreational center, efficient schooling system, accessible transport delivery and standardized living conditions for people in concern (Tulaeva and Tysiachniouk, 2017).

4.2.4. The Perceived Negative Socio-economic Impacts of Oil Exploitation among Libyan People in Tripoli

Table 10 shows how Libyan people in Tripoli perceived the negative impacts of oil exploitation. The study revealed a high percentage of people supporting all laid down of the socio-economic impacts of oil production from the upstream to the downstream sectors. It was largely agreed that oil exploitation has caused serious

traffic congestion/accidents with 38.9% of agree, 30.2% of neither agree nor disagree, 14.6% of disagree, 12.3% of strongly agree and 4.0% of strongly disagree. Damaging of roads by heavy trucks vary with 36.9% of agree, 27.1% of neither agree nor disagree, 20.4% of disagree, 11.3% of strongly agree and 4.3% of strongly disagree.. Safety and health risks for workers accounted as 49.0% of agree, 24.4% of neither agree nor disagree, 13.6% of strongly agree, 9.5% of disagree and 3.0% of strongly disagree. High rate of societal ills (such as crime, prostitution and drugs trafficking) with 33.2% of agree, 22.9% of strongly agree, 20.1% of disagree, 18.1% of neither agree nor disagree and 5.8% of strongly agree. Social inequalities (in terms of unfairness treatment to landowners and industrialists) vary with 32.7% agree, 29.6% of neither agree or disagree, 17.8% of disagree, 14.3% of strongly agree and 4.5% of strongly disagree; corrupt political practices were also rated with 34.2% strongly agree, 31.4% agree, 19.8% of neither agree nor disagree, 11.1% disagree and 3.0% strongly disagree while high rate of communal conflicts was also rated with 29.6% agree, 24.4% of neither agree nor disagree, 20.4% of strongly agree, 19.8% of disagree and 5.8% of strongly disagree.

Table 10.

The Perceived negative socioeconomic Impacts of Oil Exploitation in Tripoli

RQ	Response	Frequency	%
Truck traffic congestion/accidents	Strongly agree	49	12.3
	Agree	155	38.9
	Neither agree nor disagree	120	30.2
	Disagree	58	14.6
	Strongly disagree	16	4.0
	Total	398	100.0
The damaged roads by heavy trucks	Strongly agree	45	11.3
	Agree	147	36.9
The damaged roads by heavy trucks	Neither agree nor disagree	108	27.1
	Disagree	81	20.4
	Strongly disagree	17	4.3
	Total	398	100.0
Unsafe risks/ conditions for workers harm human health	Strongly agree	54	13.6
	Agree	195	49.0
	Neither agree nor disagree	97	24.4

	Disagree	38	9.5
	Strongly disagree	12	3.0
	Total	396	99.5
Increase in crime/Prostitution/Drugs	Strongly agree	91	22.9
	Agree	132	33.2
	Neither agree nor disagree	72	18.1
	Disagree	80	20.1
	Strongly disagree	23	5.8
	Total	398	100.0
Unfair treatment to landowners/ Inequitable leasing contracts/protection for landowners benefits only for a few landowners and industries, decreases property values, lack of citizen control over the industrial operation	Strongly agree	57	14.3
	Agree	130	32.7
	Neither agree nor disagree	118	29.6
	Disagree	71	17.8
	Strongly disagree	18	4.5
	Total	394	99.0
Increased potential for political corruption	Strongly agree	136	34.2
	Agree	125	31.4
	Neither agree nor disagree	79	19.8
	Disagree	44	11.1
	Strongly disagree	12	3.0
	Total	398	99.5
Negative impact on race relations	Strongly agree	81	20.4
	Agree	118	29.6
Negative impact on race relations	Neither agree nor disagree	97	24.4
	Disagree	79	19.8
	Strongly disagree	23	5.8
	Total	398	100.

The findings of the field survey showed a high rate of acceptance to the perceived negative socioeconomic impacts of oil exploitation in Tripoli with the sum of agree which covered 48.2% to 65.6%; it was globally noted that oil producing areas suffered a lot of socio-economic effects such as impoverishment, marginalization, low standard of living, low farm productivity, shortage of infrastructures, loss of valuable land by the native people and most often regarded as the distressed areas indeed (Okpako, 2014).

4.3. Analysis of Findings on the Basis of Sub Problems

For the purpose of clarity, direction and logical assertions for the scope of this research the following statements of problems were formulated so as to have a basis for inferential statistical analysis.

4.3.1. The First Sub- Problem

The first sub-problem postulated that “To what extent do age difference among Libyan people significantly influence their perceived positive environmental impacts of oil exploitation in Tripoli?” the answer was revealed in ANOVA statistical analysis as shown in Table 11 below.

Table 11.

ANOVA on How Age Difference among Libyan People Significantly Influences their Perceived Positive Environmental Impacts of Oil Exploitation in Tripoli

RQ	Respondents	N	DF	Chi-Sq	P-value
Age among non-use of coal/reduced carbon emission and air pollution, energy security, low prices for gas prices	Strongly agree1	84	4	4.226	0.376
	Agree 2	184			
	Neither agree nor disagree3	97			
	Disagree4	28			
	Strongly disagree5	4			
	Total	397			
There is no significant age differences among people that perceived positively Non-usage of coal/reduced carbon emission and air pollution 1=2=3=4=5					
Age among natural and bio-diversity/compliance with environmental rules/addressing	Strongly agree	74	4	3.323	0.505
	Agree	170			
	Neither agree nor disagree	133			
	Disagree	15			
	Strongly disagree	5			

issues of water	Total	397				
contamination						
There is no significant age difference among people that perceived positively natural bio-diversity, compliance to environmental rules and water contamination. 1 = 2 = 3 = 4 = 5						
	Strongly agree	173				
	Agree	133				
Age among priority	Neither agree nor disagree	58				
to health and safety	Disagree	29	4	1.946	0.746	
	Strongly disagree	4				
	Total	397				
There is no significant age differences among people that perceived positively priority to health and safety 1 = 2 = 3 = 4 = 5						

The result in Table 11 indicate that there are no significant differences in terms of age among Libyan people on their perceived positive environmental impacts of oil exploitation in the areas of non-usage of coal, reduced carbon emissions, air pollution, energy security and low prices for gas which depicted 0.376 value with 184 respondents agree to 97 neither agree nor disagree, 84 strongly agree, 28 disagree and 4 strongly disagree, natural and bio-diversity, compliance with environmental rules and addressing of water contamination showed value of 0.505 with 170 participants agree, 133 neither agree nor disagree, 74 strongly agree, 15 disagree and 5 strongly disagree; while on the basis of priority to health and safety were valued for 0.746 with 173 respondents of strongly agree, followed by 133 agree, 58 neither agree nor disagree, 29 disagree and 4 strongly disagree. Thus, the societal views of ecological influences are mostly evaluated from the areas of well-being and luxury, accessibility by modern transport systems, easy access to work, affluence, pleasures, class, and well-secured systems with necessary amenities, people and cultural preservation, secured ecosystem and total wellbeing of the people (Rosa and Dietz, 1998).

4.3.2. The Second Sub- Problem

The second sub- problem stated that “To what extent do age differences among Libyan people significantly influence their perceived negative environmental impacts of oil exploitation in Tripoli According to the result revealed in Table 12 that there is no significant age differences among Libyan people regarding their perceived negative environmental impacts in the areas of water contamination, noise/dust/light/odor, soil and water pollution, waste water and climate change effects with P-value of 0.222 (descriptively 183 respondents were rated as agree, 97 as strongly agree, 73 as neither agree nor disagree, 38 as disagree and 7 as strongly disagree; age among harming domestic livestock and wildlife were rated for P-value of 0.676 while 130 participants were rated as neither agree nor disagree, 112 as agree, 77 as disagree, 62 as strongly agree and 16 as strongly disagree; age among potential earthquake depicted a low-value P 0.016 – which possibly call for another field survey to clarify people opinions about earthquakes potential for any perceived negative impact of oil exploitation in Tripoli, age among abandoning of other natural resources triggers too much reliance on fossil fuels – these indicated P-value of 0.957 – while participants response vary with 177 of neither agree nor disagree, 88 agree, 67 disagree, 56 strongly agree and 10 strongly disagree. The result to some high degree depicted that age has no significant influences on perceived negative environmental impacts of oil exploitation in Tripoli. Basically, whether it is accepted or rejected, human is mostly affected by what is visible and invisible in the regions of the atmosphere, hydrosphere and biosphere and all the symbiosis relationships with the living organisms; thus the destructive effects on our natural surroundings are real (Azaiki, 2007).

Table 12.

ANOVA Result on How Age Differences among Libyan People Significantly influence their Perceived Negative Environmental Impacts of Oil Exploitation in Tripoli

RQ	Respondent	N	DF	Chi-Square	p-value
Age among contamination of water, distraction due to	Strongly agree 1	97			
	Agree 2	183			

noise/dust/light/odor, soil and water	Neither agree nor disagree 3	73			
pollution, waste water and climate change effects.	Disagree 4	38			
	Strongly disagree 5	7			
Total		398			
There is no significant age difference among water contamination, pollution, wastewater and climate change effects $1 = 2 = 3 = 4$					
	Strongly agree 1	62			
	Agree 2	112			
Age among harming domestic livestock and wildlife	Neither agree nor disagree 3	130	4	2.325	0.676
	Disagree 4	77			
	Strongly disagree 5	16			
Total		397			
There is no significant age difference among harming domestic livestock and wildlife $1=2=3=4=5$					
Age among potential earthquakes	Strongly agree 1	71			
	Agree 2	127			
	Neither agree nor disagree 3	103	4	12.249	0.016
	Disagree 4	77			
	Strongly disagree 5	17			
Total		395			
<i>Earth quake</i> $1 \neq 2 \neq 3 \neq 4 \neq 5$ showing one of those that respond to is different, that required further analysis, at the end earthquake with neither agree nor disagree have the highest (32.55) while earthquake with those disagree has the least with (28.39)					
	Strongly agree 1	56			
Age among abandoning of other natural resources' contributes to too much reliance on fossil fuels.	Agree 2	88	4	0.678	0.954
	Neither agree nor disagree 3	177			
	Disagree 4	67			
	Strongly disagree 5s	10			
Total		398			
There is no significant age difference among abandoning other natural resources contribute to too much reliance on fossil fuels Resources $1 = 2 = 3 = 4 = 5$					

4.3.3. The Third Sub Problem

The third sub problem stated that “To what extent do age difference among the Libyan people significantly influence their perceived positive socioeconomic impacts of oil exploitation in Tripoli?”

Table 13

ANOVA Result on How age Difference among the Libyan People Significantly influences their Perceived Positive Socioeconomic Impacts of Oil Exploitation in Tripoli

RQ	Respondent	N	Degree of freedom	Chi-square	p-value
Age among improving local economy, foreign business interaction, generation of energy and reduction of natural gas prices.	Strongly agree	139	4	2.562	0.633
	Agree	167			
	Neither agree nor disagree	51			
	Disagree	22			
	Strongly disagree	5			
	Total	384			
	Improvement of local economy 1 = 2 = 3 = 4 = 5				
Age among revenue and tax (increased income for people in gas businesses and wealth creation, benefits from chemical, energy and water services industry	Strongly agree1	118	4	8.788	0.067
	Agree 2	151			
	Neither agree nor disagree 3	79			
	Disagree 4	39			
	Strongly disagree 5	11			
	Total	398			
	Revenue and tax generation 1 = 2 = 3 = 4				
Age among job opportunity (new business and restaurant creation)	Strongly agree 1	160	4	4.170	0.384
	Agree 2	147			
	Neither agree nor disagree 3	46			
	Disagree 4	34			
	Strongly disagree5	8			
	Total	395			
	Opportunity for job creation 1 = 2 = 3 = 4 = 5				
Strongly agree	118				

Age among infrastructural development (improved in local services/school/libraries/roads, housing and property development, new research and development for state universities	Agree	137			
	Neither agree nor disagree	106	4	3.929	0.416
	Disagree	29			
	Strongly disagree	4			
Total		394			
Infrastructural development 1 = 2 = 3 = 4 = 5					

The outcome of the ANOVA (Analysis of Variance) revealed that there is no significant age difference among Libyan people regarding their perceived positive socioeconomic impacts of oil exploitations on the basis of improving local economy, foreign business interaction, generation of energy and reduction of natural gas prices – were all rated aggregately of P-value of 0.633 while participants response vary with 167 agree, 139 strongly agree, 51 neither agree nor disagree, 22 disagree and 5 strongly disagree; age among revenue and tax generation have the least significant P-value of 0.067 while respondents opinion vary with 151 agree, 118 strongly agree, 79 neither agree nor disagree, 39 disagree and 11 strongly disagree; age among job opportunity indicated a significant with P-value of 0.384 while the number of participants differs with 160 strongly agree, 147 agree, 46 neither agree nor disagree, 34 disagree and 8 strongly disagree; finally, age among infrastructural development was rated for P-value of 0.416 while the view of the number of respondents ranged from 137 agree to 118 strongly agree, 106 neither agree nor disagree, 29 disagree and 4 strongly disagree. All the positive socioeconomic indicators followed the same assertion that there is no significant age difference among Libyan people regarding their perceived positive socioeconomic impacts of oil exploitation in Tripoli. Depending on the system of government and the policies of oil incorporations, the positive gains of oil exploitation exceed more revenue generation covered by highly capital intensive amenities development, medical delivery, financial and facility supports for schooling program, emerging of service markets, acquiring and transferring of technologies (Tulaeva and Tysiachniouk, 2017).

4.3.4. The Fourth Sub Problem

Lastly, the fourth sub problem asserted that “To what extent do age differences among Libyan people significantly influence their perceived negative socio-economic impacts of oil exploitation in Tripoli?”

Table 14.

ANOVA Result on How age Differences among Libyan People Significantly influences their Perceived Negative Socioeconomic Impacts of Oil Exploitation in Tripoli

RQ	Respondent	N	DF	Chi-square	p-value
Age among truck congestion/accident	Strongly agree	49	4	4.597	0.331
	Agree	155			
	Neither agree nor disagree	120			
	Disagree	58			
	Strongly disagree	16			
Total		398			
There is no significant age difference among truck congestion and accident 1=2=3=4=5					
Age among damaging road by heavy trucks	Strongly agree	45	4	3.693	0.449
	Agree	147			
	Neither agree nor disagree	108			
	Disagree	81			
	Strongly disagree	17			
Total		398			
There is no significant age difference among damaging road by heavy trucks 1=2=3=4=5					
Age among unsafe risks/conditions for workers, harm human health, increase crime rate/prostitution/drugs, social inequalities	Strongly agree	91	4	4.491	0.344
	Agree	132			
	Neither agree nor disagree	72			
	Disagree	80			
	Strongly disagree	23			
Total		398			
Age among corrupt politicians and negative	Strongly agree	136			
	Agree	125			
	Neither agree nor disagree	79			

impact on race relations	Disagree	44	4	3.434	0.488
	Strongly disagree	12			
Total		396			
There is no significant age difference among corrupt politicians and a negative impact on race relations 1=2=3=4=5					

The Table revealed that there is no significant age differences in relation to truck congestion/accident (with respondents of 155 agree, 120 neither agree nor disagree, 58 disagree, 49 strongly agree and 16 strongly disagree), damaging road by heavy trucks (with participants of 147 agree, 108 neither agree nor disagree, 81 disagree, 45 strongly agree and 17 strongly disagree), unsafe risks and condition (132 participants agree, 91 strongly agree, 80 disagree, 72 neither agree nor disagree and 23 strongly disagree), corrupt politicians and negative impact on race relations (136 respondents strongly agree, 125 agree, 79 neither agree nor disagree, 44 disagree and 12 strongly disagree) with vary P-values of 0.331, 0.449, 0.344 and 0.488 respectively. All the aforementioned negative socio-economic impacts could be efficiently evaluated as diminished capital per head, termination of major primary works of the native people, extinction of nativity, extreme suffering and absence of wellbeing (Babatunde, 2010). The majority of the multinational corporations are not prompt and even not ready to address these socio-economic challenges due to lack of understanding and lawlessness on their own part (Yakovleva, 2011).

CHAPTER V

CONCLUSION AND RECOMMENDATION

The data collected during the course of study were carefully inputted and analyzed professionally with the aid of Software Package for Social Science both descriptively and inferentially. All the results revealed in 14 Tables were evaluated critically with appropriate citations toward the direction of the statements of problem, objectives of study, assumption of study and uniquely filling the gap opens by the significance of study. It is expected and academically necessary for the expansion of the body of knowledge that this current research is widely open to all forms of input, explanation, recommendation, arguments, proofing facts and assessment as it may be required in this particular section of the study.

5.1. Conclusion

As it may possibly be observed from the content of Figure 1 to 13 and Table 1 to 14, there is so much information and well-analyzed results about the Libyans perception of environmental and socio-economic impacts of oil exploitation in Tripoli. This was considered descriptively on the basis of demographic profiles of respondents and perceived positive/negative environmental and socio-economic impacts according to inferential statistics on how age differences among Libyan people significantly influence their perceived positive and negative environmental and socio-economic impacts respectively. It is extremely very important to regard demographic factorss to a large extent in exposing the views of our respondents regarding the constructive and destructive implications of oil operational activities in Tripoli. The survey result varies with male genders having the highest rate of 55.3% versus 41.0% of their female gender, married respondents highly participated, great numbers of educated people were involved from primary to university school level, high percentage of active population shows significant response in this survey from age 15 to 35; civil servants, students, and traders fully participated and as well registered their full opinions (See details in Table 1 to 6 and Figure 8 to 13). People across various income levels fully participated; thus, people of diverse demographic characteristics were given attention so as to make the outcome of our on-going study unbiased, critically objective and

giving room for opinion expression of every respondent regarding their social, financial and surrounding states (Zelezny et al., 2000).

The result of the descriptive statistical analysis revealed that a high percentage of the participants to agree/strongly agree, neither agrees nor disagrees on the perceived environmental benefits/risks and socio-economic benefits/threats of oil exploitation in Tripoli while a slight percentage of the participants accepted to disagree and strongly disagree (See the details in Table 7 to 10). It was revealed by the past researches that most people in metropolitan cities are socially, financially, ecologically and health-wise conscious than the countryside people regarding excessive mining and utilization of biosphere possessions (Arcury and Christianson, 1990).

On the other hand, this thesis considered the inferential statistical analysis of our postulated statements of problem. The result finally revealed that age has no significant difference among Libyan people on their perceived positive/negative environmental and socio-economic impacts of oil exploitation in Tripoli. All the four sub-problems and questionable statement were tested and validated by Analysis of Variance (ANOVA) – in which results varied in perceived positive environmental impacts P-values of 0.376, 0.505 and 0.746; for perceived negative environmental impacts – the P-values include 0.222, 0.676, 0.016 and 0.954; for perceived positive socioeconomic impacts – the P-value results are 0.633, 0.067, 0.384 and 0.416; lastly, for perceived negative socioeconomic impacts – P-value results are 0.331, 0.449, 0.344 and 0.488. In fact, a high percentage of the participants either accepted to agree or strongly agree (See the details in Table 11 to 14). These results imply that the research ran across all age categories and age is not a barrier to this current study. Most profoundly, demographic characteristics particularly age, gender, social class, educational qualification, and income level greatly influence the perceptions of people about any socially, economically and environmentally related issues across all nations in the world. So many researches proved this point or notion to be fundamental especially during any empirical research of this nature. This demographic influence on people's perceptions could be shaped by the events of the society around us such as public interests and desires, political policies, the media world, public laws and regulations, money affluence, science and hi-tech, social values and commercial situations of the country (Stern, 2000).

5.2. Recommendation

Since it has been attested notionally and empirically that people perceptions, manners, principles, and attitudes are not only personally influenced, but other operational and functional segments of the society played a great role particularly while considering this current study on the Libyans' perceptions of environmental and socio-economic impacts of oil exploitation in Tripoli. Thus, on the basis of our study the researcher make the following recommendations so as to address some of the environmental and socio-economic challenges ever and currently faced by the residents of Tripoli metropolitan city pertaining oil exploitation:

- * The government of Libyan society should reform some of their existing laws and regulations that are guiding oil exploitation.

- * The government ministry controlling petroleum resources should address holistically to major environmental and socio-economic challenges affecting the people as a result of oil exploitation in Tripoli.

- * All the activities of the oil operators must be checked and regulated to the extent that it does not put them to be above the laws and reckless in their mode of operation.

- * Libyan political system should be fundamentally reformed against all forms of corrupt practices such as bribery, ethnic favoritism, the unlawful seizing of landed properties and other social inequality practices.

- * Government and the private sectors must practice free economy system and the gains from the crude oil proceeds should be duly distributed to all states or province or regions in Libya without minding their tribal groups and social status.

- * The government should increase and as well maintain all the existing infrastructures across the state such as roads, telecommunications, school facilities, housing facilities, water supply, electricity, and other urban services.

- * The aftermaths of social ills such as crime, drug trafficking, prostitution, and waste menace should be properly managed and controlled by the appropriate bodies and law enforcement agencies.

* Libyan government especially the new emerging state of Libya should set up a development plan that will be in line with their oil producing and prosperous counterparts such as Qatar, Saudi Arabia, Kuwait, and United Arab Emirate.

* The government, environmental regulatory bodies and Oil operators must seriously address every environmental problem facing oil producing areas in Libya; such cases of water contamination, all forms of pollution, land degradation, climate change effects, and deforestation – should be promptly addressed.

* All sorts of socioeconomic set back (such as poverty, unemployment, social inequality, low agricultural productivity, over-dependent on petroleum resources etc.) as a result of oil exploitation should be addressed with adequate planning and policymaking.

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Appendix -1**QUESTIONNAIRE**

The objective of the questionnaire is to collect information about Libyans perception of the Environmental and socioeconomic impact of oil exploitation in Tripoli. The information you provide will be valuable for the academic purpose of Near East University, Turkish Republic of North Cyprus TRNC. Therefore, your genuine, honest, and prompt response is a valuable input for the quality and successful completion of the research. The information you give is used only for academic purpose and will be kept confidential.

PART I: Demographic Status

Age: Below 15 () 15-20 () 21-25 () 26-30 () 31-35 () 35 and above ()

Gender: Male () Female ()

Marital status: Single () Married () Divorced ()

Level of education: None () Primary () Secondary () University ()
others (specify) _____

Occupation: Farmer () Fisherman () Trader () Student () Hunter ()
Civil servant () others (specify)_____

Average level of income per month: Less than \$50 () Less than \$100 () Less than \$500 () Less than \$1000 () More than \$1000 ()

Part II: PERCEIVED POSITIVE SOCIOECONOMIC

No	Items	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
1	Improved local economy/Buffered recession					
2	Increased local/state tax revenues					
3	Created new job opportunities					
4	Created new businesses/restaurants					

5	Increased income/wealth for people with gas leases					
6	Improved local services/schools/libraries/r oads					
7	Benefited chemical/energy/water services industry					
8	Increased population/housing/propert y values					
9	Increased Libyan energy production/security					
10	Created new markets/uses for natural gas					
11	Reduced natural gas prices					
13	Created new Rand D programs for state universities					
14	Benefited local charities/nonprofits					
15	Created new awareness/Positive publicity for the region					
16	Improved community race relations					

**PART III: PERCEIVED ENVIRONMENTAL
BENEFITS/OPPORTUNITIESSS**

N0	Items	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
16	Reduced CO2 emissions/Air pollution/Coal usage					
17	Forced state to address water conservation issues					
18	Oil companies seriously comply with environmental rules					
19	Nature and bio-diversities are usually considered while exploiting crude oil					
20	Health and safety are usually prioritize					

PART IV: PERCEIVED NEGATIVE SOCIOECONOMIC

No	Items	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
22	Truck traffic/Congestion/Accidents					
23	Damage to roads					
24	Inadequate state/federal oversight of the industry					
25	Well explosions/Blowouts/Drilling accidents					
26	Lack of citizen control over industry operations					
27	Inequitable leasing contracts/Protection for landowners.					
28	Unsafe risks/Conditions for workers					
29	Increased crime/Prostitution/Drugs					

30	Benefits only large landowners and industry					
31	Decreases property values					
32	Harms human health					
33	Creates a local boom and bust economy					
34	Increased potential for political corruption					
35	Negative impacts on race relations					

PART V: PERCEIVED NEGATIVE ENVIRONMENTAL IMPACTS/THREATS

No	Items	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
36	Potential for groundwater/aquifer contamination					
37	Noise/Dust/Lights/Odors					
38	Harm to domestic livestock/animals/wildlife					
39	Degrades rural landscape/natural habitat					
40	Potential for earthquakes					
41	Air pollution/Methane releases/Climate change					
42	Danger from spilled cracking fluids/wastewaters					
43	Reduced water quality					
44	Soil contamination.					
45	Contributes to continued reliance on fossil fuels					

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