ASSESSMENT OF THE ECONOMIC, SOCIAL AND
POLITICAL OPPORTUNITIES IN THE DEVELOPMENT
OF A PETROLEUM PRODUCTS REFINERY IN SOUTH
SUDAN:
A CASE OF SMALL AND MEDIUM ENTERPRISES IN THE
OIL AND GAS SECTOR

BY

VALENTINO ACHAK DENG

UNITED STATES INTERNATIONAL UNIVERSITY-AFRICA

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VALENTINO ACHAK DENG

A Project Report Submitted to the Chandaria School of Business in Partial Fulfillment of the Requirements of the Degree for the Masters in Business Administration (MBA)

UNITED STATES INTERNATIONAL UNIVERSITY-AFRICA

SUMMER 2019
STUDENT DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than United States International University for academic credit.

Signature: __________________________  Date: __________________________

Valentino Achak Deng (ID No: 658716)

This project has been presented for examination with my approval as the appointed Supervisor.

Signature: __________________________  Date: __________________________

Dr. Paul Katuse

Signature: __________________________  Date: __________________________

Dean, Chandaria School of Business
ABSTRACT

The general objective of this study was to assess the opportunities in the construction of an oil refinery in South Sudan using the case of small and medium enterprises (SMEs) in the oil and gas sector. This study was guided by the following research objectives: To establish the economic opportunities of constructing oil refinery in South Sudan, to determine the political opportunities of constructing oil refinery in South Sudan, and to examine the social opportunities of constructing oil refinery in South Sudan.

This research adopted an explanatory research design. At the time of the research, there were a total of 172 SMEs that dealt with oil and gas sector in South Sudan and a sample of 120 was obtained. Convenient sampling technique was used in this study. The data collection techniques that were employed for the research included the use of structured questionnaires. The respondents were requested for their time prior to sending the actual questionnaire. A pilot test involving 5 respondents was carried out to evaluate the completeness, precision, accuracy and clarity of the questionnaires. In this study, the descriptive statistics such as percentages and frequency distribution was used to analyze the demographic profile of the participants. The demographic data was tabulated using frequency and percentages. In order to describe the data, the study used means of each variable. Inferential statistics such as correlation and regression analysis were used to analyze relationship between variables.

The findings on the economic opportunities of constructing a fossil fuel refinery in South Sudan revealed that the infrastructure has the potential to leverage lucrative long-term sustainable developments. Exporting refined petroleum products could enhance export market by increasing the volume and structure of refined petroleum products exportation. The revenues generated through processing and exporting refined oil products could improve the country’s balance of payments that can enhance economic prosperity. Successful establishment of a crude refinery will attract investors and leverage access to global and regional financial credit facilities. It would deeply help the country improve its’ macroeconomic environment. Moreover, the construction of a petroleum products refinery would attract foreign direct investment and stabilize the inflation rate.
The findings on the social opportunities of constructing a crude refinery in South Sudan indicated that the construction of an oil refinery would enable the government to reduce the high levels of poverty. Training of local workforce and provision of vital services through corporate social responsibility. The impact of a local oil refinery would enhance management capacity building. Technology transfer through establishment of a refinery would play a significant role in achieving higher productivity and competitiveness. However, the citizens may fail to accumulate special skills which may lead to the development of the education sector.

The findings on the political opportunities of constructing oil refinery in South Sudan revealed that trading with the neighboring partners in fuel byproducts may bring about political cooperation among the partner states. The political development goals can be achieved faster by uniting the country efforts. However, a small proportion of the respondents agreed that the construction of an oil refinery would improve coexistence among different ethnic communities and reduce poverty. Another small number of the respondents agreed that the construction of oil refinery would create a conducive environment for the country as an incentive to maintain peace.

The study concludes that the construction of an oil refinery would enable the government to reduce the high levels of poverty. South Sudan trading with the neighboring partners in fuel byproducts may improve political cooperation among the partner states. Trading in locally refined petroleum products can help South Sudan improve its capacity on factors associated with inflation, high interest rates, and recessions. It will further create access to potential trade routes and markets for its commodity exports.

The study recommends that the construction of an oil refinery should bring about long-term sustainable export development. This should enhance good relationship with the neighboring countries and deepen the co-operation among the partner states. The construction of crude refinery should further enable the government to reduce the high levels of poverty by improving energy security and reliable provision of affordable fuel. This will lead to economic growth and transformed livelihoods for the majority of South Sudanese people who currently are burdened by high cost fuel products and electricity generation.
ACKNOWLEDGMENT

I would like to extend a sincere gratitude to Dr. Kiriri, Prof. Wababala and Dr. Paul Katuse whose training, guidance, supervision, advice and encouragement were essential to the completion of this research project. I must admit that the three Chandaria School of Business titans manifested a profound sense of gentleness and broad-mindedness when going through each sentence, paragraph and chapter of this project. Guys, the nature of your lectures, knowledge and skills have served as a true inspiration for my learning at The United States International University and thereafter. Your understanding, patience, and encouragement has instilled in me a sense of discipline and duty which very much have served as a litmus test for the completion of this MBA project. May God bless you.
DEDICATION

To Julia Abuk Lual, my wife

and our beloved children:

Arou Achak Deng
Amiir Achak Deng
Atong Achak Deng
Adim Achak Deng
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CHAPTER ONE

1.0 INTRODUCTION
1.1 Background of the Study
South Sudan does not have its own production and delivery of refined petroleum products. For a long time, local oil refinery of fuel products has been part of the discussion in the sector without much implementation (Nour, 2011). An oil refinery is an industrial process plant where crude oil is transformed and refined into more useful products such as petroleum naphtha, gasoline, diesel fuel, asphalt base, heating oil, kerosene, liquefied petroleum gas, jet fuel and fuel oils (Feng, Hu, Charles & Wang, 2013). Petrochemicals feed stock like ethylene and propylene can also be produced directly by cracking crude oil without the need of using refined products of crude oil such as naphtha. Oil refineries are typically large, sprawling industrial complexes with extensive piping running throughout, carrying streams of fluids between large chemical processing units, such as distillation columns (Hildebrand, 2013). There is usually an oil depot at or near an oil refinery for the storage of incoming crude oil feedstock as well as bulk liquid products. An oil refinery is considered an essential part of the downstream side of the petroleum industry (Black, 2000). As the main crude producing country in eastern Africa, South Sudan does not have a refined petroleum products refinery which it can use to meet the ever growing local and regional fuel demands.

According to Feng et al. (2013), the Chinese were among the first civilizations to refine oil to refine oil for use as an energy source way back in 512 A.D. and 518 A.D. However, in the modern history of the petroleum industry oil refine began to evolve in 1846 in Canada where Abraham Gessner of Nova Scotia, Canada devised a process to produce kerosene from coal. Shortly thereafter, in 1854, Ignacy Lukasiewicz began producing kerosene from hand-dug oil wells near the town of Krosno, Poland (Gary and Handwerk, 1984). The first large petroleum refinery was built in Ploiești, Romania in 1856 using the abundant oil available in Romania (McGill & Weinbaum, 1973). In North America, the first oil well was drilled in 1858 by James Miller Williams in Oil Springs, Ontario, Canada. In the United States, the petroleum industry began in 1859 when Edwin Drake found oil near Titusville, Pennsylvania (Hildebrand, 2013). The industry grew slowly in the 1800s, primarily producing kerosene for oil lamps. In the early twentieth century, the introduction of the internal combustion engine and its use in automobiles created a market
for gasoline that was the impetus for fairly rapid growth of the petroleum industry. The early finds of petroleum like those in Ontario and Pennsylvania were soon outstripped by large oil found in Oklahoma, Texas and California (Black, 2000). This makes the United States to be the biggest refiner in the world followed by China, Russia, Japan, and India.

A geographical shift in the refining capacity is reshaping the global downstream industry, namely with refinery closures in developed countries and capacity additions in developing regions. For instance, the largest oil refinery in the 20th century has always been the Abadan Refinery in Iran. However, this refinery suffered extensive damage during the Iran-Iraq War. Since 2008, the Iran refinery has been overtaken by Jamnagar Refinery Complex in India which consist of two refineries side by side operated by Reliance Industries Limited with a combined production capacity of 1,240,000 barrels per day (197,000 m3/d) (Black, 2000). This has been followed by Paraguaná Refinery Complex in Paraguaná Peninsula in Venezuela with a capacity of 940,000 bbl/d (149,000 m3/d) and the third largest is SK Energy’s Ulsan in South Korea with 840,000 bbl/d (134,000 m3/d) (Feng et al., 2013).

Africa has also not been left behind in the construction of oil refineries. Though Africa as a continent has the least number of oil refineries in the world, there are several highly competitive oil refineries in some African countries. Currently, South Africa’s Sapref Refinery is the largest refinery in Africa producing 180,000 barrels per day which is followed by Egypt’s Mostorod Refinery with a capacity of 142,000 barrels per day. It has also been assessed that the Dangote Refinery will be the biggest in Africa which will produce 1,240,000 barrels per day (Vanguard, 2017). However, within the East African Community region, majority of the countries are still speculating the construction of an oil refinery, a good example is Kenya, Uganda, Tanzania, Rwanda, and Burundi (Njuguna, 2017). These statistics highlight the need to rapidly develop or increase African refining capacity. Oil production far exceeds refinery output and while the domestic market exists, it is underserved. Investment in this sector is critical and it would reduce dependence on imports, ease the burden on public finances from subsidies and create new job opportunities (Ufere, 2016). Besides the East African Community, South Sudan is still planning to commit to the new investment opportunity.
In South Sudan, energy accounts for about 50% of the gross domestic product, 98% of government revenue and 99% of export earnings. In the country, a refinery project has already been identified, construction has been underway, pipes have been laid and massive dredging operation has commenced but the emergence of the refinery has been unsuccessful. The country is one of the leading crude producing countries across the globe and in Africa, but without its own refinery (Nour, 2011). The lack of a local refinery means that the country is likely to be affected by plunging crude oil prices which could negatively affect South Sudan economy and lead to government financial deficit which has already been affected by the recent domestic political instability. Also, low investor confidence and the poor security situation pose serious obstacles to the government’s ability to boost crude oil production and development of refinery industry (Vangaurd, 2017).

The major oil production fields are in South Sudan but the major oil refineries, ports and pipelines, which developed before the country gained her independence in 2011, are located in Sudan. Both Sudan and South Sudan produce three crude oil blends: Dar, Nile, and Fula. The Dar blend is a heavy paraffinic type of crude oil that has a high acid content and must be heated during transport to avoid congealing in ship tanks. The Dar blend is produced in the Melut Basin, which is controlled by South Sudan. The Nile blend is produced in the Muglad Basin; it is a medium, low-sulfur waxy crude oil and is a more attractive blend to refiners because of its high fuel and gasoil yields. The Fula blend is a highly acidic crude oil that is produced in the Muglad Basin and is transported via pipeline to the Khartoum refinery, where it is processed for domestic use rather than for export (Shankleman, 2011).

The Petrodar (PD0C) pipeline transports crude oil from Palogue and Adar Yale oil fields in the Melut Basin to the Bashayer Marine Terminal in Port Sudan. The pipeline is approximately 850 miles long with a design capacity of 500,000 b/d, and it has several heating units to facilitate the movement of the Dar blend crude oil along the pipeline. The Greater Nile Petroleum Operating Company (GNPOC) pipeline transports Nile blend crude oil from the Heglig oil fields (Blocks 2 and 4) in Sudan and the Thar Jath and Mala oil fields in South Sudan to the Bashayer Marine Terminal in Port Sudan for export, and to two refineries in El-Obeid and Khartoum for refining and distribution to the domestic

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market. South Sudan’s Thar Jath-Heglig section of the pipeline is approximately 100 miles and has a capacity of 200,000 b/d; the Heglig-Port Sudan section is approximately 930 miles long with a design capacity of 450,000 b/d. In September 2014, ownership of the pipeline and facilities was fully transferred to a local Sudanese pipeline operator, Petro lines for Crude Oil Ltd (Nour, 2011).

In the economic context, the development of a refinery in South Sudan can accelerate economic growth and bring about structural transformation of the economy (World Bank, 2008). Oil has recently contributed to the improvement of economic performance and Foreign Direct Investment (FDI) in South Sudan. This will also increase share of the South Sudanese government in oil revenues from partnerships with foreign oil producing companies. Under the political context, South Sudan has been characterized by a long history of political instability, continuing civil wars and the complex north-south conflict (Vanguard, 2017). The construction of an oil refinery can bring about government self-sufficiency, increase government resources, revenues and spending, economic growth (GDP growth and composition), foreign trade (volume and structure of exports), balance of trade, reduce government debt, balance of payment, FDI, promote a commitment to implementing long-run sustainable economic and social development plans in South Sudan. Under the social context, South Sudan has a higher population with a lower standard of economic development, high rates of poverty and unemployment as compared to most developing countries. Also, the impact of local oil refinery can enhance capacity building. Capacity-building which will include having quality education, training, science and technology (S&T) and research and development (R&D) infrastructure and the growth of the economy. The oil refinery can also lead to the creation of more employment opportunities (Vanguard, 2017).

Therefore, establishing a local oil refinery can create positive effects and opportunities by enabling the country to gain self-sufficiency in oil by satisfying domestic demand (Nour, 2011). This in turn will save the government foreign exchange, the resources used to import refined oil and generated surplus revenues, which will fund other domestic needs. Furthermore, the local production and exportation of refined oil implies that South Sudan will shift from an oil importing economy into an oil exporting economy (Njuguna, 2017). This therefore implies that there is an urgent need for a local oil refinery company in the
country. Hence, the need of the study on the assessment of political, social and economic opportunities of constructing an oil refinery in South Sudan using the case of SMEs in the oil and gas sector.

1.2 Statement of the Problem
Most of the studies conducted in the oil sector look at the effect of energy price regulations (Andrew, 2016), inland petroleum transport risk (Gaicuhie, 2015), fuel consumer protection (Mutero, 2017), national competitiveness of Kenya’s oil cluster (Busiyile, 2009), the use of mobile technology in petroleum industry (Gikonyo, 2013), developing competitive advantage at Kenya Petroleum Refineries Limited (Munyao, 2008) and management of oil marketing companies (Kalama, 2007). None of these studies conducted any assessment on the implications of the oil refinery specifically in South Sudan. It is on this basis that there was a need to carry out a study on the assessment of political, social and economic opportunities of constructing oil refinery in South Sudan.

1.3 General Objective
The general objective of this study was to assess the opportunities in the construction of an oil refinery in South Sudan using the case of small and medium enterprises (SMEs) in the oil and gas sector.

1.4 Specific Objectives
This study was guided by the following specific objectives:
1.4.1 To establish the political opportunities of constructing oil refinery in South Sudan.
1.4.2 To determine the social opportunities of constructing oil refinery in South Sudan.
1.4.3 To examine the economic opportunities of constructing oil refinery in South Sudan.

1.5 Importance of the Study
The study findings can be of benefit to a number of stakeholders, such as the following.

1.5.1 Ministry of Energy and Mining
It is agreed that investment in local oil refinery is important for economic growth. The recommendations from the study can provide important contributions to the Ministry of
Energy and Mining in coming up with appropriate policies to assist the government in pursuing policies that restore and sustain high growth rates in the South Sudanese economy. For some time, the government of South Sudan has tended to veer towards foreign investors to refine its oil. Of late though, there has been a deliberate government policy to refine its oil locally to achieve self-sustainability for long term economic growth. The study can also definitely contribute to the existing empirical literature on the assessment of political, social and economic opportunities of constructing oil refinery in South Sudan. In this context, it also helps us to draw an important policy lesson. The contrasting views on the subject are numerous and a comprehensive study using the South Sudan scenario is bound to enrich the available literature on the subject.

1.5.2 Oil Importers and Exporters
The study that can also be of benefit to the oil importers and exporters (whether corporate or individuals) by letting them understand how their activities contribute to the growth of GDP. In a way, it may enhance levels of government revenues that would translate to economic, political and social benefit among the people of South Sudan.

1.5.3 Researchers and Academicians
The findings from this study can be important to the researchers and scholars. The results can enable academicians to come up with tentative solutions and strategies in outlining the most appropriate strategy in developing a competitive oil refinery strategy in South Sudan.

1.6 Scope of the Study
The scope of this study was based on the SMEs in the energy sector in Juba South Sudan. The sample comprised of SMEs managers or owners involved in the oil sector. An extensive questionnaire was employed, and professional enumerators were used to ensure the best-quality data and minimize non-sampling error. The survey was carried out in approximately 3 weeks beginning 19th of January to April 10th, 2019.
1.7 Definition of Terms

1.7.1 Barrel
The standard unit of liquid volume for oil in the petroleum industry, equal to 42 US gallons, 34.97 Imperial gallons or 159 litres (Hildebrand, 2013).

1.7.2 Base Stock
The primary petroleum fraction from which a specification product is blended (Hildebrand, 2013).

1.7.3 Extraction
The process of separating a material by means of a solvent into a fraction soluble in the solvent (extract) and an insoluble residue (Black, 2000).

1.7.4 Oil Refinery
An oil refinery is an industrial process plant where crude oil is transformed and refined into more useful products such as petroleum naphtha, gasoline, diesel fuel, asphalt base, heating oil, kerosene, liquefied petroleum gas, jet fuel, and fuel oils (Feng et al., 2013).

1.8 Chapter Summary
Chapter one presents the background on the political, social and economic opportunities of constructing oil refinery in South Sudan. The chapter also outlined the specific research questions of this research, the importance of the study, the scope of the study as well as the working definitions of specific terms used in the project. Chapter two is on the literature review and it provides insight into what other researchers have done on the political, social, and economic opportunities of constructing oil refinery. Chapter three is on research methodology and it highlights the various methods and procedures used by the researcher in conducting the research. Chapter four is on the result and findings of the study. Chapter five is on the summary, discussion, conclusion and recommendation of the study.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

The general objective of this study was to assess the political, social and economic opportunities of constructing oil refinery in South Sudan using the case of SMEs in the oil and gas sector. The first section of the literature review studies on the economic opportunities of constructing oil refinery in South Sudan. The second section of the literature review studies the political opportunities of constructing oil refinery in South Sudan. And, the third section examines the social opportunities of constructing oil refinery in South Sudan. The chapter ends with a summary.

2.2 Economic Opportunities of Constructing Oil Refinery

2.2.1 Economic Development

The construction of an oil refinery deeply influences a country’s economic development. Oil is also the most valuable commodity in world trade. As Doyle (2008) notes, “Roughly two billion dollars a day now change hands in worldwide petroleum transactions. It is the world’s first trillion-dollar industry in terms of annual dollar sales.” The oil industry is phenomenally profitable for some corporations and governments. Taxes from oil are a major source of income for some 90 governments. Petroleum is the largest single item in the balance of payments and exchanges between nations and a major factor in local level politics regarding development, jobs, health, and the environment. For many countries, oil is crucial to national economic viability, accounting for upwards of 80% of total national exports for Libya, Iran, Kuwait, Saudi Arabia, and Venezuela.

The global oil industry also provides significant jobs, profits, and taxes. As the International Labor Organization (ILO) notes the oil industry directly employs more than 2 million workers in production and refining. The ILO further estimates that each job in oil production or refining generates one to four indirect jobs in industries that either supply needed inputs or benefit from value added activities. Interestingly, there are limited public data on the benefits of oil. Revenue and investment data from oil producing regions are sparse. This lack of transparency on oil’s benefits has, in fact, motivated an international “Publish What You Pay” campaign to require oil companies to disclose their payments to developing country governments for oil concessions. Dispersed information
Sources indicate that some countries, such as Ecuador and Angola, receive up to 50% of their revenue from oil taxes and profit sharing (UNCTAD, 2014).

Oil, also, obviously creates significant and varied negative impacts and costs to human health, cultures, and the environment. Thus, it is critical to evaluate the costs as well as the benefits of oil. Although the NEPDG report encourages more oil development, it provides little information on the negative consequences of this development. Instead, the report cites only technological advances that have minimized the impacts of oil exploration and refining (Al-Fattah, 2013).

### 2.2.2 Creation of Jobs

In the oil industry, jobs are created around the extraction of the natural resource. The creation of employment opportunities, either directly or indirectly, has been one of the most prominent impacts of oil sector in the South Sudan economy. Total employment and urban employment in oil industry have increased significantly (Al-Fattah, 2013). This means that most employment opportunities were created in the petroleum sector of South Sudan. As a result, the contribution of employment in the oil sector has been very uneven as compared to the other sectors in the economy of South Sudan. Even multinational companies have provided the technology and employed South Sudanese in sharing the gains of oil wealth in the country (Ozorhon, 2007). Similarly, across the globe oil and gas industry total employment continues to rise. Thus, the construction of an oil refinery may support a number of jobs creation directly or indirectly.

On the other hand, extractive industries can have important negative impacts on jobs elsewhere in the economy. These effects are often considered manifestations of Dutch disease, a reference to the experience of the Netherlands after large natural gas fields were discovered in the province of Groningen in the late 1950s (Solow, 2013). The ensuing export revenue led to strong real exchange rate appreciation, deterioration in competitiveness in sectors exposed to international competition, and a loss of jobs in these tradable sectors (World Bank, 2007). Some industrial countries confronted with resource booms have successfully protected or fostered the diversification of their economies. Norway offers what may be the most striking example (World Bank, 2011). With strong backing from the labour movement, centralized collective-bargaining agreements...
ensure that real wages do not grow more rapidly than the productivity of the tradable sectors, excluding oil (Hayami & Ruttan, 2009). Wage moderation supports employment opportunities for everybody, to the point that the unemployment rate remained close to 3 percent during the recent global financial crisis. Oil revenue is used for long-term investments but is not immediately converted into higher labour earnings (Solow, 2014).

2.2.3 Foreign Direct Investment (FDI)
In many countries, attracting investment has become the sum of industrial policy. According to Gawad and Muramalla (2013), foreign investment today is regarded as the central engine for economic growth. Donors and international financial institutions such as the United States (US), the International Monetary Fund (IMF) and the World Bank have noted that attracting FDI is a key economic policy goal for most countries. Further UNCTAD data (World Investment Report, 2012) reveals that China is the biggest country that attracted FDI in 2011 in the world with 123985 million dollars (M$) around 30.4% FDI inflow/GDP and Belgium is the first in top 10 European countries in attracting FDI (with 89142 M$) flowed by UK and France (with 53949M$ and 40945M$ respectively); Russian, Federation from Eurasia attract 52878M$; Australia from Oceania attract 41317M$; Canada and Mexico from North America attracts 40932M$ and 19554M$ respectively; Brazil and Venezuela from South America attracts 66660M$ and 5302M$ respectively; Egypt was the biggest country from North Africa in attracting FDI through the last 10 years until 2010 but FDI inflow dropped from 6385M$ in 2010 to 483M$ in 2011; Nigeria is the biggest country from west Africa in attracting FDI- it attracts 8915M$; and Saudi Arabia is the biggest country from West Asia attracting 16400M$ (UNCTAD, 2014).

Moreover, according to World Trade Organization (WTO); International Exports Statistics, the top five countries leading in their net exports of oil and gas industries in 2011 are as follows (next exports in thousand barrels per day of each country is given in parenthesis): Saudi Arabia (8167), Russia (7504), UAE (2309), Kuwait(2343), Nigeria (2242). The WTO report has segregated the world petrol and gas exports regions in the World in to seven different regions such as North America, Central and South America, Europe, Eurasia, Middle East, Africa, Asia, and Oceania. Gas and oil refinery industry depend on Multinational Corporations (MNCs). Which possess huge capital and high
technology and the main channel for this firm’s expansion strategy is FDI. FDI in oil, gas and refinery industries promotes petrochemical exports and all other kinds of exports. There is a huge competition among the various countries of the world to get export oriented FDI. This is essentially true among developing countries like Egypt, China, and Brazil (FDI Report, 2015).

Considering the fact that FDI is means for developing countries to get capital inflows, access to foreign technology, management skills and marketing networks (Gawad & Muramalla, 2013). It can promote export activities in South Sudan by providing access to global markets and facilitating export-oriented production with an inflow of capital and access to modern technology. Thus, FDI encourages exports of host country economies by way of enhancing their domestic capital for exports, facilitating in transfer of technology and new products and services for exports, providing linkages with new and large global markets, and lastly, helps in training the host country workforce in improving their both technical and management capabilities.

2.2.4 Inflation and Exchange Rate Fluctuation
Inflation and exchange rate fluctuation are two very important financial indicators that have a significant bearing on the cost of delivering a project. The exchange rate indicates how the local currency is performing against other world major currencies. High inflation will lead to a rise in production cost (Giora & Anderson, 2014). It may be naive to be overly optimistic of any significant changes in the economic performance of South Sudan in the near future, since the economy is heavily dependent on imports (Deng, Mertenskoetter & de Vondervoort, 2012). Thus, the macroeconomic health of the nation is thus closely tied to the vagaries of the global crude oil price. Business may not look attractive unless the country is able, somehow, to break its present over-dependence on oil.

The overall goal of oil management in South Sudan is to ensure that the people are the beneficiaries of the oil revenue. To ensure that it is the broader masses that will benefit from the oil wealth, the South Sudan must create policy cohesion within the government to preserve the peace with the country. Moreover, the government should increase its accountability and transparency by working with other international actors, such as the
Extractive Industries Transparency Institution (EITI) to avoid the oil curse (Claes, 2002). The government of South Sudan can utilize incoming revenue as a part of an economic diversification process. Suggested areas are agriculture, mining, and hydropower. This implies that the country needs technical assistance not only for increased oil recovery, but also with the expansion of other industries (Thurber, Hults & Heller, 2011).

The overall goal is to find solutions to make the oil revenue benefit the people of South Sudan, while simultaneously finding ways to optimize larger economic diversification process that uses oil revenue to create long-term sustainable economic conditions for South Sudan (Kvelland, 2013). The management of oil is part of a larger capacity building process in South Sudan. But the capacity building is complex process with many layers of obstacles which are interconnected. The barriers to this development is associated with the country’s long history of regional conflict, domestic instability, international policy incoherence, poor diplomatic relations and the oil resource curse. Since independence, much hope of South Sudanese has been tied to the oil development in the country and the source of 98 percent of state revenue. In recognition of the difficult ahead, the fact of the matter is that oil will play a huge role of the country’s future (Haouas & Heshmati, 2011).

2.3 Political Opportunities of Constructing Oil Refinery

2.3.1 Peace and Stability

Oil is a much sought-after resource in the modern world economy. This can provide an incentive for western nations to maintain peace and stability in a country. However, discovery of new oil reserves in Brazil, Venezuela, Canada, Alaska and Russia, have challenged the status quo. Several world events have led to major oil disruptions in the past two decades or so. But, not always with significant economic impacts: the 1973 Arab oil embargo, the Iranian revolution (1979), the eight year Iraq-Iran war, and Iraq’s invasion of Kuwait and the subsequent embargo on Iraqi supplies. More recent events include the frequent bombing of the main export pipeline of Colombia, the massive explosion on the Piper Alpha platform in the North Sea, civil war in Angola, weather-related or export policy inspired shut-offs of Russian oil exports, prolonged oil worker strikes in Nigeria, and hurricane damage to Mexican oil installations in 1995.
On the other side, South Sudan trading with the neighboring partners in fuel by products may bring about political stability. This may be as a result of increased interaction among countries in commerce and slowly turning into one big family. A multitude of institutions and organizations will be involved to facilitate trade and security matters, combine resources for the achievement of common goals and strengthen internal dialogue when conflict occurs (Collier & Gunning, 1995). This could stimulate the invitation of South Sudan into the East African Community integration. According to Aluoka, Vonderbank and Rapuro (2001), the EAC aims at widening and deepening co-operation among the partner states in, among others, political, economic and social fields for their mutual benefit. This can result to the establishment of a peaceful and stable environment for productivity, trade and investments as a prerequisite for the sustainable development of the region. Development goals can be achieved faster by uniting the country efforts. In addition, significant impact can be achieved by the creation of new investments opportunities in world-market production based on the region's comparative advantages in oil resources.

2.3.2 Political Instability

In the last three decades, there have been many conflicts across the world. Wallensteen and Sollenberg (1998) article on armed Conflict and Regional Conflict Complexes between the periods of 1989 to 1997 noted that there were 103 armed conflicts in 69 locations in the world. There have been several definitions of conflict, for instance, Addison, Billon and Murshed (2003) provides that conflict is a form of civil war. But of great interest is the way Wallensteen and Sollenberg (1998) divides conflict into three main categories: minor armed conflict, intermediate armed conflicts, and war. The minor armed conflict is where the number of battle related deaths during the course of conflicts is below 1,000. The intermediate armed conflict has more than 1,000 deaths in a given year, and war has more than 1,000 battle related deaths during any given year. Together, the last two categories (intermediate armed conflict and war) are referred to as major armed conflicts.

Conflict in South Sudan is not a new phenomenon. The conflicts have affected the development of the country and portraying a negative perception. Collier and Hoefler (1998) article on economic causes of civil war, argue that a number of conflicts are
closely associated with exploitation of natural resources. The conflicts depend on revenues from natural resources such as oil and reach a point where economic motives become dominant over the political motives. Collier and Hoefler (2001) emphasize that greed produces greater grievances and fuels more conflict. Addison et al. (2003) also explains that the location of natural resources such as oil affects the occurrence of conflicts. De Soysa (2000) implies that countries that are abundant in point resources are more likely to experience conflicts than countries that possess only diffuse resources, especially when the resources are associated with land reforms. In summary, natural resources such as oil constitute a major source of conflict in South Sudan and other parts of the world.

2.3.3 Border Dispute on Transit Fee
Deng, Mertenskoetter and de Vondervoort (2012) explain that there are severe disputes about fees for oil exports from South Sudan through the Sudanese pipelines leading to the harbour of Port Sudan. Over 75% of pre-independence oil production is in South Sudan, and Sudan attempted to charge South Sudan a USD 32 per barrel to USD 38 per barrel transit fee for using Sudan’s pipeline for export. Negotiations reached a deadlock in early 2012, upon which Sudan impounded two cargoes. South Sudan then stopped production. According to the IEA Oil Market Report of 10 February 2012, all 274 wells in block 1/2/4 and 600 wells in block 3/7 were shut or forced to reduce production by 25 January 2012.

There are various employees belonging to the Chinese-Malaysian oil consortium who have been expelled on the grounds of “non-co-operation”. South Sudan’s landlocked geography forces it to remain dependent on Sudan to transport its oil through Sudan’s pipelines to the Bashayir terminal along the Red Sea, impelling both countries into a mutually dependent relationship. Due to its dramatic loss of oil export revenue, Sudan relies heavily on the fees it charges South Sudan for using its pipelines and facilities. In January 2012, disagreement between the two countries over oil transportation fees led South Sudan to boldly shut down its entire oil production. After nearly 15 months of fruitless negotiations, both countries finally agreed on a transit fee and South Sudan resumed oil production (Global Risk Insight, 2011).
2.3.4 Government Self-Sufficiency

The desire for self-sufficiency has always been a common trait of human society. After all, no one likes to be dependent upon others, especially for vital commodities and services. From a geopolitical perspective, this sentiment is arguably at its strongest when it comes to energy (Al-Fattah, 2013). The Arab Oil Embargo, Russia’s gas supply cut-offs to Europe and Venezuela’s and Iran’s threats to use the ‘oil weapon’ have all reinforced importing nations’ urge for energy self-sufficiency. No country is more preoccupied with this than the United States, where for the past four decades achieving energy self-sufficiency has been the mainstay of Washington’s energy policy. The only difference between Republicans and Democrats is that the former emphasizes supply side solutions (‘Drill Baby Drill’) whereas the latter call for an ‘oil diet’ that uses less oil through taxation or increased fuel economy standards. The construction of the oil refinery by the government of South Sudan can bring about self-sufficiency in the country, thereby improving its national security, alleviate its debt and overcome budget crisis by yielding more stable gasoline prices (Giora & Anderson, 2014). For example, the United States’ oil sector is practically self-sufficient. Followed by other countries such as France, Brazil, Russia, Saudi Arabia and Canada which are well endowed with refined petroleum products.

Other countries such as China, Japan and Germany to name a few are poor in resources in relation to their needs and their dependency on energy imports is growing by leaps and bounds. This means that if hydrocarbons dominate both our electricity and transportation systems, most nations will never be able to achieve self-sufficiency and will continue to rely on the global energy trading system (Al-Fattah, 2013). While the pursuit of energy self-sufficiency lends itself to tactical solutions such as increased domestic production or fuel economy mandates that may have a positive effect on a nation’s trade balance and the environment, it would not have a profound impact upon the global price of crude and geopolitics (Giora & Anderson, 2014). The reason is that oil is a fungible commodity whose price is being determined in the world market on a minute-by-minute basis. A price of a barrel of oil is more or less equal to every consumer, and when the price spikes, it does so for everyone regardless of where their supply comes from. This is not always
the case for natural gas: unless it is traded in the form of liquefied natural gas, its price is pre-determined in long-term contracts (O’Sullivan, 2012).

2.3.5 Policy Challenges

The loss of sizeable portions of oil resources in the North and extreme reliance of the economy on oil in the South reveal critical challenges for long-term sustainable development in both countries (Guarcello, Rosati & Lyon, 2011). The North needs to urgently transform from oil resource rich country to less oil dependent economy to accommodate for decline in oil revenues (Anton, Hernandez & Levy, 2012). Declining reliance on oil sector in the North raises scarcity value of oil rents and importance of effective investment of oil rents for sustainable economic development. Even though the South inherited three quarters of oil reserves, the Ministry of Petroleum and Mining, Republic of South Sudan (2012) forecasts that oil reserves will be exhausted in 20 years if no new finds are made.

The Hartwick-Solow rule requires transformation of non-renewable, exhaustible oil resources into alternative human, physical, social and renewable natural capital through public investment to accommodate for less oil dependent economy. In natural resource rich countries, natural capital, in often cases the largest component of wealth has been extracted without compensating it with alternative forms of capital. Hartwick (2007) and Solow (2013) claim that an economic development would be on a sustainable path if total wealth of a nation is non-declining. Hartwick urges that rents from natural resource extraction should be invested in alternative forms of capital to sustain economic development instead of being used as public current expenditures.

As oil rents are mostly captured by the government, the government can play critical role for sustainable, inclusive growth by efficiently collecting the oil rents and by effectively investing public savings into alternative human, public, social and renewable natural capital (IMF, 2012). It should be clearer which policies they should implement if natural resource rich countries shift their focus on economic performances from GDP to adjusted savings or ratio of public investment to natural resource depletion (Solow, 2014). When adjusted savings rate is negative, it signals that the country is depleting its natural capital without replacing it by alternative capital (Shankleman, 2011). Alternatively, if the ratio
of public investment to natural resource depletion is far below 100%, rents from natural resources are not transformed into alternative capital but used as public current expenditure. This, in turn, means that, assuming natural resources will be exhausted in the long run. The economy then is not on a sustainable path and will not be able to maintain the same standard of living. Because oil reserves in Sudan and South Sudan are expected to be halved by 2020, immediate steps are required to diversify the economy (Ministry of Petroleum and Mining, Republic of South Sudan, 2012).

2.4 Social Opportunities of Constructing Oil Refinery

2.4.1 High Rates of Poverty

South Sudan is expansive, largely rural, yet widely depopulated. Almost 83 percent of the population resides in rural areas. Poverty is endemic with at least 80 percent of the population defined as income-poor and living on an equivalent of less than US$1 per day. More than one third of the population lacks secure access to food. However, it is a well-endowed and potentially rich country. The Nile River is its major natural feature. It traverses the country and flows through some of its regional centers, including the capital city, Juba. It facilitates trade, administration and urbanization in some rural areas (Egmond & Erkelens, 2007).

South Sudan holds other natural resources including oil, gold, silver, iron ore and copper, and many more. The country’s large fertile lands have produced cassava, groundnuts, sweet potato, sorghum, sesame, maize, rice, finger millet, cowpea and beans. Although landlocked, the country does not lack for access to potential trade routes and markets for its commodity exports. At the same time, the economy is dominated by the oil sector (Giora & Anderson, 2014). Outside the oil sector, livelihoods are currently concentrated in low productive, unpaid agriculture and pastoralist work. As much as 85 percent of the working population is engaged in non-wage work, chiefly in subsistence agriculture and livestock rearing (about 78 percent of the working population) (UNCTAD, 2014).

The agriculture sector is mostly rain-fed and very vulnerable to changing weather patterns. South Sudan experiences both widespread and localized droughts and floods. There is virtually no manufacturing industry and practically all intermediate and
consumer goods are imported. The only modern industrial sector is the oil industry, in which foreign investors, particularly Chinese, Indian and Malaysian dominate (Deng, Mertenskoetter & de Vondervoort, 2012). The conflict, falling oil revenues and rapidly depreciating currency have further exacerbated economic hardships in South Sudan. Conflict has blocked the path towards inclusive and sustainable growth, but developing an oil refinery industry would create employment and improve the livelihoods for the poor in the war-affected areas (Giora & Anderson, 2014).

2.4.2 Capacity Building

Majority of domestic contractors lack sound financial base. They do not have sufficient access to funds, credit facilities and do not have the appropriate technological capabilities, plant and equipment and key personal to handle projects properly (Egmond & Erkelens, 2007). Their financial woes are deepened by delays in payment, especially, for work done on public projects. To sustain liquidity, some contractors trade quality and value for money by compromising on quality materials or workmanship. Some even end up abandoning projects altogether (Westring, 1997).

Also, to a large extent, the technical and managerial competencies of many of the domestic contractors remain doubtful manifesting very often in poor quality product delivery (Agyakwa-Baah, 2009). This paucity of local expertise is evidently the reason the nation’s major construction projects are awarded to the few large foreign contractors (Assibey-Mensah, 2009). The emerging new technologies in construction, design, materials and components and the growing sophistication of customer demands when juxtaposed with the current level technical and managerial competencies of the majority of domestic contractors reveals a yawning gap that must be closed if the domestic partners are to achieve a competitive edge.

Foreign participation in the construction of local refinery may bring about advanced managerial skill and enhance internal efficiency and international competitiveness in the production of oil by products (Agyakwa-Baah, 2009). Given the need to reform State Owned Enterprises, but bearing in mind the weaknesses of the domestic oil market and the lack of managerial capacity, the South Sudan policy to allow joint venture in oil
refinery may be on the right tract in building capacity in the oil and gas sector (Egmond & Erkelens, 2007).

2.4.3 Training of Employees

Training refers to educational skills that are compatible with the level of awareness about knowledge of and familiarity with the concept of entrepreneurship as being a viable career path (Schoof, 2006). Training and education have the most important impact on the development of an oil refinery. There are skills which are necessary in the production of fuel by products. According to Habibullah (2007), the goal of the training programs is to teach employees the skills and practices in the production of oil by-products. It was found that the knowledge gained from such training programs translate into better business practices, thus increasing incomes (Habibullah, 2007). Higher levels of education tend to have larger development impacts than lower levels. Gyimah-Brempong (2011) advocates for rapid increased tertiary education in African in the production of oil by products to accelerate economic growth and poverty eradication.

2.4.4 Upgraded Skills

One indicator in the construction of an oil refinery is the percentage share of skilled workers in the total number of workers employed. Research suggests that oil refineries are technical fields that require efficient labor utilization in production because they put more of their total labor force into direct production and less into non-productive administrative activities (Djurovic, 2012). The research also found that oil refineries have a higher level of labor quality in their employment composition. Oil refineries tend to hire more employees with university and higher education, particularly in capital intensive and technology intensive industries (Giora & Anderson, 2014). They also tend to hire fewer employees with lower education.

Ezeoha (2008) explains that oil refineries are known to transfer superior technology and management skills which are important for the development of the sector. Transfer of skills and technology can have a positive impact on the overall economic performance of a country by improving the skills and knowledge of the employees in the country. Ezeoha (2008) adds that oil refineries significantly drive the transfer of technological skills leading to a significant growth in the economy. Part of the reason of why
government provide special incentives in the oil and gas sector is to transfer technology and skills. With the emergence of globalization, increase in business activities, knowledge and information have gained significant importance for the success of any economy. It is believed that upgrade of skills is as a result of accumulation of factors of production or the improvement of technology or both in the oil and gas sector.

2.4.5 Transfer of Technology
For a firm to invest in oil and gas refinery it must possess technology (Kogut, 1988). It could also be some specific intangible assets or capabilities such as technology and information, managerial, marketing and entrepreneurial skills, organizational systems and access to intermediate or final goods (Kumaraswamy, Palaneeswaran & Humphreys, 2010). There is clear evidence that technology and managerial skills must be transferred in the construction of oil refinery in South Sudan. Technology plays a significant role in achieving higher productivity and competitiveness. The last necessity relates to strengthening the capacity of the government to clarify, protect the property rights of individuals and transparency of government actions (Matthews, 2009). This implies that oil refineries employ a more technically efficient way in their production and benefit more from economy of scale by employing more technologically advanced production methods (Matthews, 2009). This suggests that oil refineries use higher technology and higher skills in their production.

2.4.6 Research and Development
As exploration and production activities advance in the oil and gas industry, the host countries are challenged to create new, beneficial and efficient regulations that will ensure the development of a strong local industry. Also, the continuing demand for innovation and the increasing technological challenges faced by the sector makes it clear that fostering national investments in research and development (R&D) is vital to building local industry. Establishing a legal obligation to invest in R&D has proven to be a crucial tool for encouraging a strong national development policy, which helps boost social and economic indicators (Giora & Anderson, 2014).

Taking into account the numerous local content obligations imposed by developing countries in the oil & gas industry, the R&D investment obligation seems to be one of the
cleverest and most efficient strategies in a long-term public policy. Investments in R&D can: (i) foment the development of a national technological industry; (ii) enable the increase of competitiveness of the country in the global market; (iii) indirectly or directly result in improved technical and upper-level education; and (iv) enable the creation of partnerships between government entities and private investors, especially in South Sudan among other developing countries. For instance, following the recent oil discoveries in the Campos, Santos and Espírito Santo offshore basins in Brazil, the government decided to adopt a new regime to govern oil exploration and production activities (Deng, Mertenskoetter & de Vondervoort, 2012). This created a social fund from the sale of the government’s share of oil profit. The social fund is usually used for social development related to education, culture, sports, public health, science and technology, environment and climate change (Al-Fattah, 2013).

The main criticism, however, of this new legal framework adopted by the investments in R&D is that the oil money will be allocated directly by the government through the Social Fund. That means that science and technology will now compete with other initiatives, such as public health and education (Giora & Anderson, 2014). Moreover, because the allocation of funds is discretionary, there is a concern about whether the government will allocate to the R&D projects the amount of investments that are necessary to meet the sector demands and standards. The adoption of this model could lead to more investments in R&D projects, with a focus on new technologies for the pre-salt areas, or to research linked to the development of alternative energy technologies, for example. It is known that the major oil companies are already investing in the development of technologies related to biofuels, and that they will play a leadership role in the clean energy market in the future (Deng, Mertenskoetter & de Vondervoort, 2012).

2.5 Chapter Summary
This chapter reviewed literature on the economic, political and social opportunities of constructing oil refinery in South Sudan using the case of SMEs in the oil and gas sector. The first section of the literature review looked at the economic opportunities of constructing oil refinery in South Sudan. The second section of the literature review investigated the political opportunities of constructing oil refinery in South Sudan and the
third section examined the social opportunities of constructing oil refinery in South Sudan. The next chapter is on the research methodology.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction
This chapter presents the research methodology and the profile of the study area. The key issues discussed in this chapter include the research design, data required and sources, data collection tools, sampling procedures, key variables and the analysis of the data. In addition, there are issues in regard to the economic, political and social opportunities of constructing oil refinery in South Sudan using the case of SMEs in the oil and gas sector.

3.2 Research Design
The type of research design employed in this study is explanatory in nature. Explanatory Research is conducted for a problem which was not well researched before, demands priorities, generates operational definitions and provides a better-researched model (McDaniele & Gates, 2001). It is a type of research design which focuses on explaining the aspects of one’s study in a detailed manner (Cooper & Schindler, 2006). The researcher starts with a general idea and uses research as a tool which could lead to the subjects that would be dealt in the incoming future. It is meant to provide details where a small amount of information exists for a certain product in mind of that researcher (Wright, Kroll & Parnell, 2008). Therefore, the study adopted a quantitative approach in assessing the opportunities in the construction of an oil refinery in South Sudan. The independent variables included the economic, political and social opportunities of constructing oil refinery in South Sudan.

3.3 Population and Sampling Design
3.3.1 Population
According to Frankel and Wallen (2000) a population refers to the group to which the results of the research are intended to apply. They stated that a population is usually the individuals who possess certain characteristics or a set of features a study seeks to examine and analyze. Kumekpor (2002) emphasized this by defining a population as the total number of all units of the issue or phenomenon to be investigated into which is “all possible observations of the same kind”. Population can be defined as the total group of
people or entities from which research information is intended to be obtained. There was a total of 172 SMEs that deal with oil and gas sector in South Sudan. The population of interest had the potential of providing the relevant information regarding the economic, political and social opportunities of constructing oil refinery in South Sudan.

Table 3.1: Total Population Distribution

<table>
<thead>
<tr>
<th>Company Category</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMEs</td>
<td>172</td>
</tr>
<tr>
<td>Total</td>
<td>172</td>
</tr>
</tbody>
</table>

3.3.2 Sampling Design and Sample Size

3.3.2.1 Sampling Frame

A research sampling design is that part of the research plan that indicates how cases are to be selected for observation. The design therefore maps out the procedure to be followed to draw the study’s sample. A sampling frame is a list of elements from which the sample is drawn and is closely related to the population under study (Cooper and Schindler, 2003). In this study, the sampling frame constituted of SME owners and firm representatives. The list of employees was obtained from Nilepet and Sipaike database.

3.3.2.2 Sampling Techniques

The study used convenient sampling technique. Convenient sampling technique is a type of non-probability sampling which involves the sample being drawn from that part of the population which is close to hand (Maholtra, 2007). The sample comprised of SMEs managers or owners involved in the oil sector. An extensive questionnaire was employed, and professional enumerators were used to ensure the best-quality data and minimize non-sampling error.

3.3.2.3 Sampling Size

The study used a mathematical approach in the determination of the sample size for the research. The mathematical sampling approach was based on Miller and Brewer (2003) formula that is stated as follows:

\[ n = \frac{N}{1 + N (\alpha)^2} \]
Where \( n = \) sample size \\
\( N = \) Sample frame \\
\( \alpha = \) margin of error

Using a confidence level of 95% and a margin of error of (+5%) on a total population of 172 and the sample size of 120 respondents was calculated as follows:

\[
\begin{align*}
n &= \frac{172}{1 + 172 (0.05)^2} = 120 \\
&= 120
\end{align*}
\]

<table>
<thead>
<tr>
<th>Companies</th>
<th>Total</th>
<th>Sample Size</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMEs</td>
<td>172</td>
<td>120</td>
<td></td>
<td>69.8%</td>
</tr>
<tr>
<td>Total</td>
<td>172</td>
<td>120</td>
<td></td>
<td>69.8%</td>
</tr>
</tbody>
</table>

### 3.4 Data Collection Method

The data collection techniques employed for the research included the use of structured questionnaires. The questionnaires were used for the collection of data from the respondents. The questionnaire embodied both open and closed-ended questions for randomly selected members of the various groups. A survey questionnaire is designed to apply to a heterogeneous sample selected from the large population of respondents (Burns, 2000). A questionnaire is defined as a formalized schedule or form which contains an assembly of carefully formulated questions for information gathering (Wong, 1999). The questionnaire was structured in three broad areas that include general information, a rating on the economic opportunities of constructing oil refinery in South Sudan, the social opportunities of constructing oil refinery in South Sudan and the political opportunities of constructing oil refinery in South Sudan. The variables on the key objectives of the study was measured in interval scales on a five-point Likert scale (1-representing strongly agree to 5– strongly disagree) to determine respondents agreement with the opportunities of constructing oil refinery in South Sudan.
3.5 Research Procedures

The respondents were requested for their time prior to sending the actual questionnaire. A pilot test involving 5 respondents was carried out to evaluate the completeness, precision, accuracy and clarity of the questionnaires. This ensured the reliability of the data collection instruments used. After the amendment of the final questionnaire, the researcher explained the purpose of the research and seek permission from the SMEs to carry out the actual research. The final questionnaires were distributed to the respondents with the help of research assistants. This enhanced the speed of data collection. Each completed questionnaire was treated as a unique case and a sequential number given to each. Filling the questionnaire took approximately 10 minutes.

In addition, Cronbach’s Alpha Test of Reliability was used to test the reliability of the constructs describing the variables of the study. According to Nunnally and Bernstein (1994) a-score exceeding 0.7 indicates high internal reliability of the scale items. Despite that, there are still researchers who use different cut-off $\alpha$-scores like 0.8 or even 0.6 (Garson, 2002). The $\alpha$-score for the measure ranges from 0.60 to 0.62 which according to Garson (2002) indicate an acceptable level of reliability of the measures. The collected data was edited and entered the Statistical Package for the Social Sciences (SPSS) software to enable the carrying out of the analysis.

3.6 Data Analysis Methods

To ensure easy analysis, the questionnaire was coded according to each variable of the study. This study used descriptive statistics. According to McDaniele and Gates (2001), descriptive analysis involves a process of transforming a mass of raw data into tables, charts, with frequency distribution and percentages, which are a vital part of making sense of the data. In this study, the descriptive statistics such as percentages and frequency distribution were used to analyse the demographic profile of the participants. The demographic data was tabulated using frequency and percentages. In order to describe the data, the study used means of each variable. Inferential statistics such as correlation and regression analysis were used to analyse relationship between variables based on the model specified below.
The general regression equation is:

\[ Y' = a + bX \]

Where:

\( Y' \) is the predicted value of the Y variable for a selected X value.

\( a \) is the Y-intercept. It is the estimated value of Y when \( X = 0 \). In other words it is the estimated value of Y where the regression line crosses the Y-axis when X is zero.

\( b \) is the slope of the line, or the average change in \( Y' \) for each change of one unit (either increase or decrease) in the independent variable X.

\( X \) is any value of the independent variable that is selected.

For the case of this study, the regression was as follows:

\[ Y' (\text{Development of Oil Refinery}) = a + b (\text{Economic Opportunities}) + b (\text{Political Opportunities}) + b (\text{Social Opportunities}) \]

3.7 Chapter Summary

This chapter presents the various methods and procedures the researcher adopted in conducting the study in order to answer the research questions raised in the first chapter. This research adopted an explanatory research design. There is a total of 172 SMEs that deal with oil and gas sector in South Sudan and a sample of 120 was obtained. Systematic random sampling was used in this study. The data collection techniques that was employed for the research include the use of structured questionnaires. The respondents were requested for their time prior to sending the actual questionnaire. A pilot test involving 5 respondents was carried out to evaluate the completeness, precision, accuracy and clarity of the questionnaires. In this study, the descriptive statistics such as percentages and frequency distribution were used to analyze the demographic profile of the participants. The demographic data was tabulated using frequency and percentages. In order to describe the data, the study used means of each variable. Inferential statistics such as correlation and regression analysis were used to analyze relationship between variables. The next chapter presents the results and findings of the study.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the findings of the primary data collected from the field using the questionnaire as a tool. The objective of this study was to assess the opportunities in the construction of an oil refinery in South Sudan using the case of small and medium enterprises in the oil and gas sector. The study analyzed the economic opportunities of constructing oil refinery in South Sudan, determined the political opportunities, and examined the social opportunities of constructing oil refinery in South Sudan.

The section presents an analysis of the information designed to respond to the research objectives as outlined in the study. There are four subsections presented on the questionnaire. The first is a general section that answers the respondents’ characteristics; the following three subsections address specific research objectives. One hundred and twenty (120) questionnaires were distributed to the respondents, however, 105 responded thereby creating a response effective rate of 87.5%.

4.2 General Information

The general information for the study comprised of the respondent’s characteristics which was organized in the following areas: gender of respondents, age of the respondents, education level, type of business ownership, longevity in the line of business, number of employees and revenue turnover.

4.2.1 Gender of Respondents

Figure 4.2 illustrates that most respondents are male who make up 76% of the total respondents while the female were 24%. Hence, gender could have an impact on the questionnaire response on the impact of a new oil refinery.
4.2.2 Age of Respondents

Figure 4.2 illustrates that the respondents aged below 25 years were 27%, those aged between 25 to 35 years were 32%, between 35 to 50 years were 24% and above 50 years were 17% of the respondents. Hence, the findings indicate that a good number of the respondents were below 35 years of age.

4.2.3 Education Level of Respondents

Figure 4.3 indicates that 14% of the respondents had completed primary school, 17% had completed secondary school, 18% had certificate level of education, 14% had diplomas, 26% of the respondents had bachelor’s degree while 10% with a master’s degree. The findings indicate that most of the respondents were relatively well educated.
4.2.4 Type of Business Ownership

Figure 4.4 reveals that 20% of the respondents were in sole proprietorship, 30% were in partnership and 50% owned a limited company. The findings showed that majority of the respondents owned limited companies.
4.2.5 Longetivity in the Business

Figure 4.5 reveals that 44% of the respondents had operated their business for less than 2 years, 22% between 3 to 5 years, 18% between 6 to 8 years and 16% for more than 9 years. This shows that most of the SMEs had operated for less than 5 years.

![Figure 4.5: Longetivity in the Business](image)

4.2.6 Number of Employees in the Enterprise

Table 4.1 reveals that 32% of the SMEs had less than 5 employees, 18% had between 6 to 10 employees, 31% had between 11 to 15 employees and 19% of the SMEs had more than 15 employees. This indicates that most of the businesses had between 6 and more than 15 employees.

<table>
<thead>
<tr>
<th>Number of Employees</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5</td>
<td>33</td>
<td>32</td>
</tr>
<tr>
<td>6-10</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>11-15</td>
<td>32</td>
<td>31</td>
</tr>
<tr>
<td>More than 15</td>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>103</td>
<td>100</td>
</tr>
</tbody>
</table>
4.2.7 Revenue Turnover

Figure 4.6 reveals that 42% of the SMEs had revenue for less than SSP. 3m, 27% had revenue between SSP. 3m to 6m, 19% had revenue between SSP. 6m to 9m and 12% of the SMEs had more than SSP. 9m. The findings indicate that majority of the SMEs in the oil and gas industry earned less than SSP. 6m.

![Revenue Turnover Bar Chart]

Figure 4.6: Revenue Turnover

4.3 Economic Opportunities of Constructing Oil Refinery in South Sudan

This research intended to establish the economic opportunities of constructing oil refinery in South Sudan from the respondents who participated in the study. The findings established that the construction of an oil refinery will facilitate export-oriented production at a mean of 3.76. This was followed by the construction of a new oil refinery will provide enough access to credit facilities at a mean of 3.62. Third, the construction of an oil refinery will deeply influence the country’s economic development at a mean of 3.46 and fourth, the construction of an oil refinery will stabilize the exchange rate at a mean of 3.35. However, a small proportion of the respondents agreed that the construction of an oil refinery will phenomenally be profitable at a mean of 3.03. Another small number of the respondents agreed that the construction of an oil refinery will attract foreign direct investment at a mean of 2.89 and a very small proportion of the respondents agreed that the construction of an oil refinery will stabilize the inflation rate at a mean of 2.86. The findings are presented in Table 4.2.
Table 4.2: Economic Opportunities of Constructing Oil Refinery in South Sudan

<table>
<thead>
<tr>
<th>Economic Opportunity</th>
<th>N</th>
<th>Mean</th>
<th>Rankings</th>
</tr>
</thead>
<tbody>
<tr>
<td>The construction of an oil refinery will deeply influence the country’s</td>
<td>100</td>
<td>3.52</td>
<td>3</td>
</tr>
<tr>
<td>economic development.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The construction of an oil refinery will phenomenally be profitable.</td>
<td>97</td>
<td>3.03</td>
<td>9</td>
</tr>
<tr>
<td>The construction of an oil refinery will significantly create employment.</td>
<td>103</td>
<td>3.04</td>
<td>8</td>
</tr>
<tr>
<td>The construction of an oil refinery will aid in the balance of trade.</td>
<td>103</td>
<td>3.18</td>
<td>7</td>
</tr>
<tr>
<td>The construction of an oil refinery will attract foreign direct investment.</td>
<td>100</td>
<td>2.89</td>
<td>10</td>
</tr>
<tr>
<td>The construction of an oil refinery will facilitate export-oriented</td>
<td>98</td>
<td>3.76</td>
<td>1</td>
</tr>
<tr>
<td>production.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The construction of an oil refinery will provide linkages to global</td>
<td>95</td>
<td>3.35</td>
<td>6</td>
</tr>
<tr>
<td>markets.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The construction of an oil refinery will stabilize the exchange rate.</td>
<td>100</td>
<td>3.50</td>
<td>4</td>
</tr>
<tr>
<td>The construction of an oil refinery will stabilize the inflation rate.</td>
<td>102</td>
<td>2.86</td>
<td>11</td>
</tr>
<tr>
<td>The construction of an oil refinery will boost the country’s taxes.</td>
<td>103</td>
<td>3.46</td>
<td>5</td>
</tr>
<tr>
<td>The construction of a new oil refinery will provide enough access to credit</td>
<td>102</td>
<td>3.62</td>
<td>2</td>
</tr>
<tr>
<td>facilities.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.3.1 Correlation between Oil Refinery and Economic Opportunities

This section aimed to determine the correlation between oil refinery and economic opportunities from the findings in the study. The findings revealed that there was no significant relationship between the two (Oil refinery and Economic Opportunities). The findings are indicated in Table 4.3.
### Table 4.3: Correlation between Oil Refinery and Economic Opportunities

<table>
<thead>
<tr>
<th>Description</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>The construction of an oil refinery will facilitate export-oriented production.</td>
<td>-.002</td>
<td>.987</td>
<td>95</td>
</tr>
<tr>
<td>The construction of a new oil refinery will provide enough access to credit facilities.</td>
<td>.045</td>
<td>.660</td>
<td>100</td>
</tr>
<tr>
<td>The construction of an oil refinery will deeply influence the country’s economic development.</td>
<td>-.081</td>
<td>.424</td>
<td>100</td>
</tr>
<tr>
<td>The construction of an oil refinery will stabilize the exchange rate.</td>
<td>-.050</td>
<td>.619</td>
<td>102</td>
</tr>
<tr>
<td>The construction of an oil refinery will boost the country’s taxes.</td>
<td>.002</td>
<td>.982</td>
<td>103</td>
</tr>
<tr>
<td>The construction of an oil refinery will provide linkages to global markets.</td>
<td>-.056</td>
<td>.583</td>
<td>98</td>
</tr>
<tr>
<td>The construction of an oil refinery will aid in the balance of trade.</td>
<td>-.030</td>
<td>.764</td>
<td>103</td>
</tr>
<tr>
<td>The construction of an oil refinery will significantly create employment.</td>
<td>-.071</td>
<td>.491</td>
<td>97</td>
</tr>
<tr>
<td>The construction of an oil refinery will significantly create employment.</td>
<td>.153</td>
<td>.122</td>
<td>103</td>
</tr>
<tr>
<td>The construction of an oil refinery will phenomenally be profitable.</td>
<td>.126</td>
<td>.209</td>
<td>102</td>
</tr>
<tr>
<td>The construction of an oil refinery will attract foreign direct investment.</td>
<td>.000</td>
<td>.997</td>
<td>100</td>
</tr>
</tbody>
</table>

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

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

#### 4.3.2 Regression of Oil Refinery and Economic Opportunities

The regression equation between oil refinery and economic opportunities indicates that the relationship was very weak. The model summary \((3, 94) = .142; R^2 = .020; p < .05\) indicates that oil refinery causes 2% percent variation in economic opportunities. While
the remaining 98% are attributable to other factors not considered in the study and one error term. This is outlined in Table 4.4.

**Table 4.4: Regression of Oil Refinery and Economic Opportunities**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.142&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.020</td>
<td>-.012</td>
<td>.791</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), The construction of an oil refinery will deeply influence the country’s economic development, the construction of an oil refinery will facilitate export-oriented production and the construction of a new oil refinery will provide enough access to credit facilities.

**4.3.3 ANOVA Oil Refinery and Economic Opportunities**

ANOVA result, F=.621 (P>.05) shows that oil refinery has insignificant influence on economic opportunities. The ANOVA results are indicated in Table 4.5.

**Table 4.5: ANOVA Oil Refinery and Economic Opportunities**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1.166</td>
<td>3</td>
<td>.389</td>
<td>.621</td>
<td>.603&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Residual</td>
<td>56.981</td>
<td>91</td>
<td>.626</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>58.147</td>
<td>94</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Construction of Oil Refinery  
b. Predictors: (Constant), The construction of an oil refinery will deeply influence the country’s economic development and the construction of an oil refinery will facilitate export-oriented production and the construction of a new oil refinery will provide enough access to credit facilities.

**4.3.4 Coefficients Oil Refinery and Economic Opportunities**

The findings indicated that the construction of oil refinery has insignificant influence on the key aspects of economic opportunities. The findings are presented in Table 4.6.

**Table 4.6: Coefficients Oil Refinery and Economic Opportunities**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>The construction of oil refinery will aid in the balance of trade.</td>
<td>2.332</td>
<td>.631</td>
</tr>
<tr>
<td>The construction of oil refinery will facilitate export-oriented production.</td>
<td>-.073</td>
<td>.168</td>
</tr>
<tr>
<td>The construction of oil refinery will phenomenally be profitable.</td>
<td>.157</td>
<td>.160</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Construction of Oil Refinery
4.4 Political Opportunities of Constructing Oil Refinery in South Sudan

This research intended to establish the political opportunities of constructing oil refinery in South Sudan from the respondents who participated in the study. The findings established that the increased interaction among countries trading in oil will slowly enhance good relationship with the neighboring countries at a mean of 3.74. This was followed by the new oil refinery will deepen the co-operation among the partner states at a mean of 3.69. Third, the construction of an oil refinery will reduce the country’s transit fee and border disputes at a mean of 3.58 and fourth, the construction of a new oil refinery will create a good relationship between the government and the private sector at a mean of 3.42. However, a small proportion of the respondents agreed that the construction of the new oil refinery will enhance coexistence among different ethnic communities’ poverty at a mean of 2.73. Another small number of the respondents agreed that the construction of oil refinery will create a conducive environment for the country’s an incentive to maintain peace in the country at a mean of 2.71 and a very small proportion of the respondents agreed that the construction of the new oil refinery will bring about conflict at a mean of 2.44. The findings are presented in Table 4.7.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Rankings</th>
</tr>
</thead>
<tbody>
<tr>
<td>The construction of oil refinery will provide an incentive to maintain peace in the country.</td>
<td>103</td>
<td>2.95</td>
<td>7</td>
</tr>
<tr>
<td>The construction of oil refinery will create a conducive environment for the country’s an incentive to maintain peace in the country.</td>
<td>103</td>
<td>2.71</td>
<td>10</td>
</tr>
<tr>
<td>The increased interaction among countries trading in oil will slowly enhance good relationship with the neighboring countries.</td>
<td>101</td>
<td>3.74</td>
<td>1</td>
</tr>
<tr>
<td>The new oil refinery will deepen the co-operation among the partner states.</td>
<td>103</td>
<td>3.69</td>
<td>2</td>
</tr>
<tr>
<td>The construction of the new oil refinery will bring about conflict.</td>
<td>103</td>
<td>2.44</td>
<td>11</td>
</tr>
<tr>
<td>The construction of an oil refinery will reduce the country’s transit fee and border disputes.</td>
<td>103</td>
<td>3.58</td>
<td>3</td>
</tr>
<tr>
<td>The construction of the new oil refinery will bring about government self-sufficiency.</td>
<td>103</td>
<td>3.19</td>
<td>6</td>
</tr>
<tr>
<td>The construction of the new oil refinery will enable the government to overcome its debt.</td>
<td>103</td>
<td>3.21</td>
<td>5</td>
</tr>
<tr>
<td>The construction of the new oil refinery will eradicate poverty.</td>
<td>103</td>
<td>2.93</td>
<td>8</td>
</tr>
<tr>
<td>The construction of a new oil refinery will create a good relationship between the government and the private sector.</td>
<td>96</td>
<td>3.42</td>
<td>4</td>
</tr>
</tbody>
</table>
4.4.1 Correlation between Oil Refinery and Political Opportunities

This section aimed to determine the correlation between the construction of new oil refinery and political opportunities from the findings in the study. The findings revealed that there was no significant relationship between the two (Oil refinery and Economic Opportunities). The findings are indicated in Table 4.8.

Table 4.8: Correlation between Oil Refinery and Political Opportunities

<table>
<thead>
<tr>
<th>Event</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>The increased interaction among countries trading in oil will slowly enhance good relationship with the neighboring countries.</td>
<td>-0.110</td>
<td>0.270</td>
<td>103</td>
</tr>
<tr>
<td>The new oil refinery will deepen the cooperation among the partner states.</td>
<td>0.111</td>
<td>0.265</td>
<td>103</td>
</tr>
<tr>
<td>The construction of an oil refinery will reduce the country’s transit fee and border disputes.</td>
<td>0.012</td>
<td>0.902</td>
<td>103</td>
</tr>
<tr>
<td>The construction of the new oil refinery will enable the government to overcome its debt.</td>
<td>-0.044</td>
<td>0.659</td>
<td>103</td>
</tr>
<tr>
<td>The construction of the new oil refinery will bring about government self-sufficiency.</td>
<td>-0.048</td>
<td>0.630</td>
<td>103</td>
</tr>
<tr>
<td>The construction of oil refinery will provide an incentive to maintain peace in the country.</td>
<td>-0.165</td>
<td>0.108</td>
<td>96</td>
</tr>
<tr>
<td>The construction of the new oil refinery will eradicate poverty.</td>
<td>0.064</td>
<td>0.521</td>
<td>103</td>
</tr>
<tr>
<td>The construction of the new oil refinery will enhance coexistence among different ethnic communities</td>
<td>-0.106</td>
<td>0.289</td>
<td>103</td>
</tr>
<tr>
<td>The construction of oil refinery will create a conducive environment for the country’s an incentive to maintain peace in the country.</td>
<td>-0.075</td>
<td>0.455</td>
<td>102</td>
</tr>
<tr>
<td>The construction of the new oil refinery will bring about conflict.</td>
<td>0.057</td>
<td>0.566</td>
<td>103</td>
</tr>
<tr>
<td>The construction of a new oil refinery will enable the government to reduce the high levels of poverty.</td>
<td>-0.029</td>
<td>0.772</td>
<td>103</td>
</tr>
</tbody>
</table>

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

37
4.4.2 Regression of Oil Refinery and Political Opportunities

The regression equation between oil refinery and political opportunities indicates that the relationship was very weak. The model summary (3, 97) = .171; R² = .029; p < .05) indicates that oil refinery causes 2.9% percent variation in political opportunities. While the remaining 87.1% are attributable to other factors not considered in the study and one error term. This is outlined in Table 4.9.

Table 4.9: Regression of Oil Refinery and Political Opportunities

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.171\textsuperscript{a}</td>
<td>.029</td>
<td>-.001</td>
<td>.782</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Predictors: (Constant), the construction of an oil refinery will reduce the country’s transit fee and border disputes, the new oil refinery will deepen the co-operation among the partner states and the increased interaction among countries trading in oil will slowly enhance good relationship with the neighboring countries.

4.4.3 ANOVA of Oil Refinery and Political Opportunities

ANOVA result, F = .970 (P > .05) shows that oil refinery has insignificant influence on political opportunities. The ANOVA results are indicated in Table 4.10.

Table 4.10: ANOVA of Oil Refinery and Political Opportunities

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1.779</td>
<td>3</td>
<td>.593</td>
<td>.970</td>
<td>.410\textsuperscript{b}</td>
</tr>
<tr>
<td>Residual</td>
<td>59.310</td>
<td>97</td>
<td>.611</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>61.089</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{a} Dependent Variable: Construction of Oil Refinery
\textsuperscript{b} Predictors: (Constant), The construction of an oil refinery will reduce the country’s transit fee and border disputes, the new oil refinery will deepen the co-operation among the partner states and the increased interaction among countries trading in oil will slowly enhance good relationship with the neighboring countries.

4.4.4 Coefficients of Oil Refinery and Political Opportunities

The findings indicate that the construction of oil refinery has insignificant influence on the key aspect of political opportunities. The findings are presented in Table 4.11.
Table 4.11: Coefficients of Oil Refinery and Political Opportunities

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.627</td>
<td>2.101</td>
</tr>
<tr>
<td>The increased interaction among countries trading in oil will slowly</td>
<td>.099</td>
<td>.991</td>
</tr>
<tr>
<td>enhance good relationship with the neighboring countries.</td>
<td>.100</td>
<td>.324</td>
</tr>
<tr>
<td>The new oil refinery will deepen the co-operation among the partner</td>
<td>.200</td>
<td>1.226</td>
</tr>
<tr>
<td>states.</td>
<td>.163</td>
<td>.223</td>
</tr>
<tr>
<td>The construction of an oil refinery will reduce the country’s transit</td>
<td>.053</td>
<td>.480</td>
</tr>
<tr>
<td>fee and border disputes.</td>
<td>.110</td>
<td>.632</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Construction of Oil Refinery

4.5 Social Opportunities of Constructing Oil Refinery in South Sudan

This research intended to establish the social opportunities of constructing oil refinery in South Sudan from the respondents who participated in the study. The findings established that the construction of a new oil refinery will enable the government to reduce the high levels of poverty at a mean of 3.48. This was followed by the new oil refinery will introduce training compatible with the production of oil and gas bio-products at a mean of 3.45. Third, the construction of a new oil refinery will transfer management competencies at a mean of 3.44 and fourth, a new oil refinery will have large social development impacts due to its superior technology at a mean of 3.35. However, a small proportion of the respondents agreed that the citizens will accumulate special skills as a result of employing more technologically advance methods of production after the construction of a new oil refinery at a mean of 3.05. Another small number of the respondents agreed that the benefits realized from the construction of a new oil refinery will lead to the development of the education sector at a mean of 2.79 and a very small proportion of the respondents agreed that a new oil refinery will improve the livelihoods for the poor in the war-affected areas at a mean of 2.73. The findings are presented in Table 4.12.
Table 4.12: Social Opportunities of Constructing Oil Refinery in South Sudan

<table>
<thead>
<tr>
<th>Statement</th>
<th>N</th>
<th>Mean</th>
<th>Rankings</th>
</tr>
</thead>
<tbody>
<tr>
<td>The construction of a new oil refinery will enable the government to reduce the high levels of poverty.</td>
<td>102</td>
<td>3.48</td>
<td>1</td>
</tr>
<tr>
<td>A new oil refinery will improve the livelihoods for the poor in the war-affected areas.</td>
<td>103</td>
<td>2.73</td>
<td>10</td>
</tr>
<tr>
<td>The construction of a new oil refinery will provide enough access to technical capabilities.</td>
<td>103</td>
<td>3.33</td>
<td>5</td>
</tr>
<tr>
<td>The construction of a new oil refinery will transfer management competencies.</td>
<td>103</td>
<td>3.44</td>
<td>3</td>
</tr>
<tr>
<td>The new oil refinery will introduce training compatible with the production of oil and gas bio-products.</td>
<td>103</td>
<td>3.45</td>
<td>2</td>
</tr>
<tr>
<td>A new oil refinery will have large social development impacts due to its superior technology.</td>
<td>103</td>
<td>3.35</td>
<td>4</td>
</tr>
<tr>
<td>The citizens will accumulate special skills as a result of employing more technologically advance methods of production after the construction of a new oil refinery.</td>
<td>103</td>
<td>3.05</td>
<td>8</td>
</tr>
<tr>
<td>The construction of a new oil refinery will strengthen the competitiveness of the local industries.</td>
<td>103</td>
<td>3.20</td>
<td>6</td>
</tr>
<tr>
<td>The benefits realized from the construction of a new oil refinery will lead to the development of the education sector.</td>
<td>103</td>
<td>2.79</td>
<td>9</td>
</tr>
<tr>
<td>The gains from a new oil refinery will lead to the development of social amenities.</td>
<td>103</td>
<td>3.17</td>
<td>7</td>
</tr>
</tbody>
</table>

4.5.1 Correlation between Oil Refinery and Social Opportunities

This section aimed to determine the correlation between oil refinery and economic opportunities from the findings in the study. The findings revealed that there was no significant relationship between the two (Oil refinery and Economic Opportunities). The findings are indicated in Table 4.13.
Table 4.13: Correlation between Oil Refinery and Social Opportunities

<table>
<thead>
<tr>
<th>Variables</th>
<th>Construction of Oil Refinery</th>
</tr>
</thead>
<tbody>
<tr>
<td>The new oil refinery will introduce training compatible with the production of oil and gas bio-products.</td>
<td>Pearson Correlation -0.080</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed) .420</td>
</tr>
<tr>
<td></td>
<td>N 103</td>
</tr>
<tr>
<td>The construction of a new oil refinery will transfer management competencies.</td>
<td>Pearson Correlation -0.049</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed) .622</td>
</tr>
<tr>
<td></td>
<td>N 103</td>
</tr>
<tr>
<td>A new oil refinery will have large social development impacts due to its superior technology</td>
<td>Pearson Correlation -0.071</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed) .478</td>
</tr>
<tr>
<td></td>
<td>N 103</td>
</tr>
<tr>
<td>The construction of a new oil refinery will provide enough access to technical capabilities.</td>
<td>Pearson Correlation -0.111</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed) .265</td>
</tr>
<tr>
<td></td>
<td>N 103</td>
</tr>
<tr>
<td>The construction of a new oil refinery will strengthen the competitiveness of the local industries.</td>
<td>Pearson Correlation -0.097</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed) .331</td>
</tr>
<tr>
<td></td>
<td>N 103</td>
</tr>
<tr>
<td>The gains from a new oil refinery will lead to the development of social amenities.</td>
<td>Pearson Correlation -0.074</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed) .459</td>
</tr>
<tr>
<td></td>
<td>N 102</td>
</tr>
<tr>
<td>The citizens will accumulate special skills as a result of employing more technologically advance methods of production after the construction of a new oil refinery.</td>
<td>Pearson Correlation -0.007</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed) .945</td>
</tr>
<tr>
<td></td>
<td>N 103</td>
</tr>
<tr>
<td>The benefits realized from the construction of a new oil refinery will lead to the development of the education sector.</td>
<td>Pearson Correlation -0.155</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed) .119</td>
</tr>
<tr>
<td></td>
<td>N 103</td>
</tr>
<tr>
<td>A new oil refinery will improve the livelihoods for the poor in the war-affected areas.</td>
<td>Pearson Correlation .059</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed) .556</td>
</tr>
<tr>
<td></td>
<td>N 103</td>
</tr>
</tbody>
</table>

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

4.5.2 Regression of Oil Refinery and Social Opportunities

The regression equation between oil refinery and social opportunities indicates that the relationship was very weak. The model summary $(3, 99) = .114; R^2 = .013; p < .05$ indicates that oil refinery causes 1.3% percent variation in economic opportunities. While the remaining 98.7% are attributable to other factors not considered in the study and one error term. This is outlined in Table 4.14.
Table 4.14: Regression of Oil Refinery and Social Opportunities

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.114a</td>
<td>.013</td>
<td>-.017</td>
<td>.794</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), A new oil refinery will have large social development impacts due to its superior technology, The new oil refinery will introduce training compatible with the production of oil and gas bio-products and the construction of a new oil refinery will transfer management competencies.

4.5.3 ANOVA of Oil Refinery and Social Opportunities

ANOVA result, F=.427 (P>.05) shows that oil refinery has insignificant influence on social opportunities. The ANOVA results are indicated in Table 4.15.

Table 4.15: ANOVA of Oil Refinery and Social Opportunities

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.821</td>
<td>3</td>
<td>.274</td>
<td>.434</td>
<td>.729b</td>
</tr>
<tr>
<td>Residual</td>
<td>62.441</td>
<td>99</td>
<td>.631</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>63.262</td>
<td>102</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Construction of Oil Refinery
b. Predictors: (Constant), A new oil refinery will have large social development impacts due to its superior technology, the new oil refinery will introduce training compatible with the production of oil and gas bio-products., The construction of a new oil refinery will transfer management competencies.

4.5.4 Coefficient of Oil Refinery and Social Opportunities

Most of the key aspect of social opportunities indicates that oil refinery has significant influence the transfer of a new oil refinery will transfer management competencies. The findings are presented in Table 4.16.

Table 4.16: Coefficient of Oil Refinery and Social Opportunities

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.960</td>
<td>.596</td>
</tr>
<tr>
<td>The new oil refinery will introduce training compatible with the production of oil and gas bio-products.</td>
<td>-.084</td>
<td>.125</td>
</tr>
<tr>
<td>The construction of a new oil refinery will transfer management competencies.</td>
<td>-.048</td>
<td>.093</td>
</tr>
<tr>
<td>A new oil refinery will have large social development impacts due to its superior technology.</td>
<td>-.070</td>
<td>.102</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Construction of Oil Refinery
4.6 Chapter Summary
On the economic opportunities that come from constructing oil refinery in South Sudan, the findings established that the construction of an oil refinery will facilitate export-oriented production. This was followed by the construction of a new oil refinery will provide enough access to credit facilities. However, a very small proportion of the respondents agreed that the construction of an oil refinery will stabilize the inflation rate.

On the political opportunities of constructing oil refinery in South Sudan, the findings established that the increased interaction among countries trading in oil will slowly enhance good relationship with the neighboring countries. This was followed by the new oil refinery will deepen the co-operation among the partner states. However, a very small proportion of the respondents agreed that the construction of the new oil refinery will bring about conflict.

On the social opportunities of constructing oil refinery in South Sudan, the findings established that the construction of a new oil refinery will enable the government to reduce the high levels of poverty. This was followed by the new oil refinery will introduce training compatible with the production of oil and gas bio-products. However, a very small proportion of the respondents agreed that a new oil refinery will improve the livelihoods for the poor in the war-affected areas. The next chapter is on the summary, discussion, conclusion and recommendations.
CHAPTER FIVE

5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction
In this section, the researcher provides a discussion on the findings of the research as compared to the findings in the literature review, the summary of the study and recommendations for further improvement on identifying the measures to be taken to attract wide interest on the assessment of opportunities in the construction of an oil refinery in South Sudan. The research is concluded on the basis of the conclusions drawn from the research objectives.

5.2 Summary of the Study
The general objective of this study was to assess the opportunities in the construction of an oil refinery in South Sudan using the case of small and medium enterprises (SMEs) in the oil and gas sector. This study was guided by the following research objectives: To establish the economic opportunities of constructing oil refinery in South Sudan, to determine the political opportunities of constructing oil refinery in South Sudan and to examine the social opportunities of constructing oil refinery in South Sudan.

This research adopted an explanatory research design. There was a total of 172 SMEs that dealt with oil and gas sector in South Sudan and a sample of 120 was obtained. Convenient sampling technique was used in this study. The data collection techniques that were employed for the research included the use of structured questionnaires. The respondents were requested for their time prior to sending the actual questionnaire. A pilot test involving 5 respondents was carried out to evaluate the completeness, precision, accuracy and clarity of the questionnaires. In this study, the descriptive statistics such as percentages and frequency distribution was used to analyze the demographic profile of the participants. The demographic data was tabulated using frequency and percentages. In order to describe the data, the study used means of each variable. Inferential statistics such as correlation and regression analysis were used to analyze relationship between variables.

The findings on the economic opportunities of constructing oil refinery in South Sudan revealed that the construction of an oil refinery can bring about long-term sustainable
export development. An oil refinery can promote the export market through foreign trade (volume and structure of exports), balance of trade and enhance long-run sustainable economic development plans in South Sudan. A new oil refinery will provide sufficient access to credit facilities. The construction of an oil refinery, is a profitable venture for some corporations and governments. An oil refinery is to create long-term sustainable economic conditions for South Sudan. The oil refinery will deeply influence the country’s economic development. The construction of an oil refinery will attract foreign direct investment. The construction of an oil refinery will stabilize the inflation rate.

The findings on the political opportunities of constructing oil refinery in South Sudan revealed that trading with the neighboring partners in fuel by products may bring about political cooperation among the partner states. The increased interaction among countries trading in oil will slowly enhance good relationship with the neighboring countries. The construction of an oil refinery will reduce the country’s transit fee and border disputes. The political development goals can be achieved faster by uniting the country efforts. However, a small proportion of the respondents agreed that the construction of the new oil refinery will enhance coexistence among different ethnic communities’ poverty. Another small number of the respondents agreed that the construction of oil refinery will create a conducive environment for the country’s an incentive to maintain peace in the country.

The findings on the social opportunities of constructing oil refinery in South Sudan indicated that the construction of a new oil refinery will enable the government to reduce the high levels of poverty. The construction of a new oil refinery create access to potential trade routes and markets for its commodity exports. Training and education have the most important impact on the development of an oil refinery. The knowledge gained from such training programs translate into better business practices, thus increasing incomes. The impact of a local oil refinery will enhance management capacity building. A new oil refinery will have large social development impacts due to its superior technology. Technology plays a significant role in achieving higher productivity and competitiveness. However, the citizens may fail to accumulate special skills which may lead to the development of the education sector.
5.3 Discussion

5.3.1 Economic Opportunities of Constructing Oil Refinery in South Sudan

The construction of an oil refinery can bring about long-term sustainable export development. The findings established that the construction of oil refinery will facilitate export-oriented production. Similarly, Vangaurd (2017) argue that an oil refinery can promote the export market through foreign trade (volume and structure of exports), balance of trade and enhance long-run sustainable economic development plans in South Sudan. In addition, the local production and exportation of refined oil implies that South Sudan will shift from an oil importing economy into an oil exporting economy (Njuguna, 2017). Also, the findings revealed that the construction of oil refinery will aid in the balance of trade. Nour (2011) argues that establishing a local oil refinery can create important positive effects and opportunities by enabling the country to gain self-sufficiency in oil by satisfying domestic demand. This in turn will save the government foreign exchange, the resources used to import refined oil and generated surplus revenues, which will fund other domestic needs.

Local contractors usually lack sound financial base. But a new oil refinery will provide sufficient access to credit facilities. On that note, Egmond and Erkelens (2007) argue that access to sufficient funds enables the acquisition of appropriate technological capabilities, plant and equipment and key personal capable of handling projects properly as well as timely completion of projects. Westring (1997) adds that the lack of credit facilities which are deepened by delays in payment, especially, for work done on public projects may make some contractors trade quality and value for money by compromising on quality materials or workmanship. Some even end up abandoning projects altogether. However, with the construction of an oil refinery, it is profitable venture for some corporations and governments. Taxes from oil are a major source of income for some 90 governments. Petroleum is the largest single item in the balance of payments and exchanges between nations and a major factor to national economic viability, accounting for upwards of 80% of total national exports for Libya, Iran, Kuwait, Saudi Arabia, and Venezuela (Doyle, 2008).

The overall goal of an oil refinery is to create long-term sustainable economic conditions for South Sudan. The findings revealed that the construction of an oil refinery will deeply
influence the country’s economic development. The oil refinery revenue benefits the people of South Sudan, while simultaneously find ways to optimize larger economic diversification process that uses oil revenue to create long-term sustainable economic conditions for South Sudan (Kvelland, 2013). The management of oil is part of a larger capacity building process in South Sudan. But the capacity building is complex process with many layers of obstacles which are interconnected. The barriers to this development is associated with the country’s long history of regional conflict, domestic instability, international policy incoherence, poor diplomatic relations and the oil resource curse. Since independence, much hope of South Sudanese has been tied to the oil development in the country and the source of 98 percent of state revenue. In recognition of the difficult ahead, the fact of the matter is that oil will play a huge role of the country’s future (Haouas & Heshmati, 2011).

A small number of the respondents agreed that the construction of an oil refinery will attract foreign direct investment. Similarly, Agyakwa-Baah (2009) argues that foreign participation in the construction of local refinery may bring about advanced managerial skill and enhance internal efficiency and international competitiveness in the production of oil by products. Given the need to reform State Owned Enterprises, but bearing in mind the weaknesses of the domestic oil market and the lack of managerial capacity, the South Sudan policy to allow joint venture in oil refinery may be on the right tract in building capacity in the oil and gas sector (Egmond & Erkelens, 2007). Also, to a large extent, the technical and managerial competencies of many of the domestic contractors remain doubtful manifesting very often in poor quality product delivery (Agyakwa-Baah, 2009). This paucity of local expertise is evidently the reason the nation’s major construction projects are awarded to the few large foreign contractors (Assibey-Mensah, 2009).

A very small proportion of the respondents agreed that the construction of an oil refinery will stabilize the inflation rate. Giora and Anderson (2014) explains that the inflation and exchange rate fluctuation are two very important financial indicators that have a significant bearing on the cost of delivering a project. High inflation will lead to a rise in production cost. It may be naive to be overly optimistic of any significant changes in the economic performance of South Sudan in the near future, since the economy is heavily
dependent on imports (Deng, Mertenskoetter & de Vondervoort, 2012). Thus, the macroeconomic health of the nation is thus closely tied to the vagaries of the global crude oil price. Business may not look attractive unless the country is able, somehow, to break its present over-dependence on oil.

5.3.2 Political Opportunities of Constructing Oil Refinery in South Sudan

South Sudan trading with the neighboring partners in fuel by products may bring about political cooperation among the partner states. The findings established that the increased interaction among countries trading in oil will slowly enhance good relationship with the neighboring countries. Similarly, Aluoka, Vonderbank and Rapuro (2001) argue that the new oil refinery will deepen the co-operation among the partner states. The cooperation is as a result of increased interaction among countries in commerce and slowly turning into one big family. A multitude of institutions and organizations will be involved to facilitate trade and security matters, combine resources for the achievement of common goals and strengthen internal dialogue when conflict occurs (Collier & Gunning, 1995). This could stimulate the invitation of South Sudan into the East African Community integration according to Aluoka, Vonderbank and Rapuro (2001). As a result, this can lead to a peaceful and stable environment for productivity, trade and investments which is a prerequisite for the sustainable development of the region.

The findings established that the construction of an oil refinery will reduce the country’s transit fee and border disputes. Deng, Mertenskoetter and de Vondervoort (2012) explain that there are severe disputes about fees for oil exports from South Sudan through the Sudanese pipelines leading to the harbour of Port Sudan. Over 75% of pre-independence oil production is located in South Sudan, and Sudan attempted to charge South Sudan a USD 32 per barrel to USD 38 per barrel transit fee for using Sudan’s pipeline for export. Negotiations reached a deadlock in early 2012, upon which Sudan impounded two cargoes. South Sudan then stopped production. Due to its dramatic loss of oil export revenue, Sudan relies heavily on the fees it charges South Sudan for using its pipelines and facilities. In January 2012, disagreement between the two countries over oil transportation fees led South Sudan to boldly shut down its entire oil production. After nearly 15 months of fruitless negotiations, both countries finally agreed on a transit fee and South Sudan resumed oil production (Global Risk Insight, 2011). But the political
development goals can be achieved faster by uniting the country efforts. The findings also revealed that the construction of a new oil refinery will create a good relationship between the government and the private sector. In addition, significant impact can be achieved by the creation of new investments opportunities in world-market production based on the region’s comparative advantages in oil resource.

The construction of an oil refinery will result in the establishment of a peaceful and stable environment for productivity, trade and investments as a prerequisite for the sustainable development of the region. However, a small proportion of the respondents agreed that the construction of the new oil refinery will enhance coexistence among different ethnic communities’ poverty. Also, another small number of the respondents agreed that the construction of oil refinery will create a conducive environment for the country’s an incentive to maintain peace in the country. Similarly, Global Risk Insight (2011) explains that the development goals can be achieved faster by uniting the country efforts. In addition, significant impact can be achieved by the creation of new investments opportunities in world-market production based on the region's comparative advantages in oil resource. But a very small proportion of the respondents agreed that the construction of the new oil refinery will bring about conflict. Giora and Anderson (2014) explains that conflicts have exacerbated economic hardships in South Sudan. Conflict has blocked the path towards inclusive and sustainable growth but developing an oil refinery industry would create employment and improve the livelihoods for the poor in the war-affected areas.

5.3.3 Social Opportunities of Constructing Oil Refinery in South Sudan

South Sudan is expansive, largely rural, yet widely depopulated but 83 percent of the population resides in rural areas. The findings established that the construction of a new oil refinery will enable the government to reduce the high levels of poverty. Similarly, Egmond and Erkelens, (2007) explains that poverty is endemic in the country with at least 80 percent of the population defined as income-poor and living on an equivalent of less than US$1 per day. More than one third of the population lacks secure access to food. However, it is a well-endowed and potentially rich country. The construction of a new oil refinery create access to potential trade routes and markets for its commodity exports. At
the same time, the economy will grow, and the livelihoods of the majority will be transformed (Giora & Anderson, 2014).

Training and education have the most important impact on the development of an oil refinery. The findings indicated that the new oil refinery will introduce training compatible with the production of oil and gas bio-products. Similarly, Schoof (2006) explains that new skills are necessary in the production of fuel by products. According to Habibullah (2007), the goal of the training program is to teach employees the skills and practices in the production of oil by-products. (Habibullah (2007) found that the knowledge gained from such training programs translate into better business practices, thus increasing incomes. Higher levels of education tend to have larger development impacts than lower levels. Gyimah-Brempong (2011) advocates for rapid increased tertiary education in African in the production of oil by products to accelerate economic growth and poverty eradication.

The impact of a local oil refinery will enhance management capacity building. The findings revealed that the construction of a new oil refinery will transfer management competencies. Agyakwa-Baah (2009) explains that to a large extent, the technical and managerial competencies of many of the domestic contractors remain doubtful manifesting very often in poor quality product delivery. This paucity of local expertise is evidently the reason the nation’s major construction projects are awarded to the few large foreign contractors (Assibey-Mensah, 2009). The emerging new technologies in construction, design, materials and components and the growing sophistication of customer demands when juxtaposed with the current level technical and managerial competencies of the majority of domestic contractors reveals a yawning gap that must be closed if the domestic partners are to achieve a competitive edge.

For a firm to invest in oil and gas refinery it must possess some kind of technology. The findings revealed that a new oil refinery will have large social development impacts due to its superior technology. Similarly, Kumaraswamy, Palaneeswaran and Humphreys (2010) explains that there is clear evidence that technology and managerial skills must be transferred in the construction of oil refinery in South Sudan. Technology plays a significant role in achieving higher productivity and competitiveness. The findings also
revealed that the construction of a new oil refinery will provide sufficient access to technical capabilities. Matthews (2009) implies that oil refineries employ a more technically efficient way in their production and benefit more from economy of scale by employing more technologically advanced production methods. This suggests that oil refineries use higher technology and higher skills in their production.

However, a small proportion of the respondents agreed that the citizens will accumulate special skills as a result of employing more technologically advance methods of production after the construction of a new oil refinery. Also, a small number of the respondents agreed that the benefits realized from the construction of a new oil refinery will lead to the development of the education sector. Djurovic (2012) explains that one first indicator in the construction of an oil refinery is the percentage share of skilled workers in the total number of workers employed. Giora and Anderson (2014) suggests that oil refineries are technical fields that require efficient labor utilization in production because they put more of their total labor force into direct production and less into non-productive administrative activities. The research also found that oil refineries have a higher level of labor quality in their employment composition. Oil refineries tend to hire more employees with university and higher education, particularly in capital intensive and technology intensive industries (Giora & Anderson, 2014). They also tend to hire fewer employees with lower education.

5.4 Conclusion

5.4.1 Economic Opportunities of Constructing Oil Refinery in South Sudan

The construction of an oil refinery can bring about long-term sustainable export development. An oil refinery can promote the export market through foreign trade (volume and structure of exports), balance of trade and enhance long-run sustainable economic development plans in South Sudan. A new oil refinery will provide sufficient access to credit facilities. The construction of an oil refinery, it is profitable venture for some corporations and governments. An oil refinery is to create long-term sustainable economic conditions for South Sudan. The oil refinery will deeply influence the country’s economic development. The construction of an oil refinery will attract foreign direct investment. The construction of an oil refinery will stabilize the inflation rate.
5.4.2 Political Opportunities of Constructing Oil Refinery in South Sudan

South Sudan trading with the neighboring partners in fuel by products may bring about political cooperation among the partner states. The increased interaction among countries trading in oil will slowly enhance good relationship with the neighboring countries. The construction of an oil refinery will reduce the country’s transit fee and border disputes. The political development goals can be achieved faster by uniting the country efforts. The findings also revealed that the construction of a new oil refinery will create a good relationship between the government and the private sector. In addition, significant impact can be achieved by the creation of new investments opportunities in world-market production based on the region’s comparative advantages in oil resource. The construction of an oil refinery will result to the establishment of a peaceful and stable environment for productivity, trade and investments as a prerequisite for the sustainable development of the region. However, a small proportion of the respondents agreed that the construction of the new oil refinery will enhance coexistence among different ethnic communities’ poverty. Another small number of the respondents agreed that the construction of oil refinery will create a conducive environment for the country’s an incentive to maintain peace in the country.

5.4.3 Social Opportunities of Constructing Oil Refinery in South Sudan

The construction of a new oil refinery will enable the government to reduce the high levels of poverty. The construction of a new oil refinery create access to potential trade routes and markets for its commodity exports. Training and education have the most important impact on the development of an oil refinery. The knowledge gained from such training programs translate into better business practices, thus increasing incomes. The impact of a local oil refinery will enhance management capacity building. A new oil refinery will have large social development impacts due to its superior technology. Technology plays a significant role in achieving higher productivity and competitiveness. However, the citizens may fail to accumulate special skills which may lead to the development of the education sector.
5.5 Recommendations
5.5.1 Recommendation for Improvement

5.5.1.1 Economic Opportunities of Constructing Oil Refinery in South Sudan
The study recommends that the construction of an oil refinery should bring about long-term sustainable export development. This can promote the export market through foreign trade (volume and structure of exports), balance of trade and enhance long-run sustainable economic development plans in South Sudan. In addition, this will aid in the balance of trade. This can create important positive effects and opportunities by enabling the country to gain self-sufficiency in oil by satisfying domestic demand. This in turn will save the government foreign exchange, the resources used to import refined oil and generated surplus revenues, which will fund other domestic needs. The construction of an oil refinery should lead to sound financial base for companies and the national government in South Sudan. This will create long-term sustainable economic conditions for South Sudan. There should be efforts towards attracting foreign direct investment and acquisition of advanced managerial skill to enhance internal efficiency and international competitiveness in the production of oil by products.

5.5.1.2 Political Opportunities of Constructing Oil Refinery in South Sudan
The study recommends that the construction of oil refinery should bring about political cooperation among the partner states. This should enhance good relationship with the neighboring countries and deepen the co-operation among the partner states. A new oil refinery should reduce the country’s transit fee and border disputes. Political development goals can be achieved faster by uniting the country efforts. The construction of a new oil refinery should create a good relationship between the government and the private sector. It should also result in a peaceful and stable environment for productivity, trade and investments as a prerequisite for the sustainable development of the region. This should also reduce conflict towards inclusive and sustainable growth.

5.5.1.3 Social Opportunities of Constructing Oil Refinery in South Sudan
The study recommends that the construction of oil refinery should enable the government to reduce the high levels of poverty. This will lead to economic growth and transformed livelihoods for the majority. Training and education should be emphasized on the
The development of an oil refinery. New skills are necessary in the production of fuel by-products. There should be training programs that teach employees the skills and practices in the production of oil by-products. The impact of a local oil refinery should enhance management capacity building. Technology and managerial skills should be transferred in the construction of oil refinery in South Sudan. As technology plays a significant role in achieving higher productivity and competitiveness.

5.5.2 Recommendations for Further Studies
The current study was on the assessment of the economic, social and political opportunities in the development of a petroleum refinery in South Sudan using the case of small and medium enterprises in the oil and gas sector. The study recommendations that future research can be done in other countries such as Uganda, Kenya and Tanzania to compare and contrast the findings.
REFERENCES


Dear Sir/Madam,

**RE: REQUEST TO PARTICIPATE IN A RESEARCH STUDY**

I am a student at the United States International University undertaking a degree in the Global Executive Masters in Business Administration-Global Business Management. I am carrying out a research as part of the program degree requirements on the opportunities in the construction of an oil refinery in South Sudan using the case of small and medium enterprises (SMEs) in the oil and gas sector.

Given your unique position and experience with your business in the oil and gas sector, you have been selected as one of the respondents. Your role in this study will only involve completing a questionnaire. The questions to be asked will relate to your experience and opinions in your area of specialization. It is important that you understand that there is no correct or wrong answer. This research is aimed at allowing you to provide details about what you honestly think.

Please note that any information you give will be treated with confidentiality and at no instance will it be used for any other purpose other than for this project. Your assistance will be highly appreciated. I look forward to your prompt response.

Thank you for your indulgence.

Valentino A Deng (Researcher)
APPENDIX B: QUESTIONNAIRE

SECTION I: GENERAL INFORMATION

Kindly tick (✓) where applicable and do not indicate your names or personal number

1. Sex
   Male [ ]   Female [ ]

2. Age (Years)
   Below 25 [ ]  25-35 [ ]  35-50 [ ]  Above 50 [ ]

3. Educational Level
   Completed Primary School [ ]
   Completed Secondary School [ ]
   Certificate [ ]
   Diploma [ ]
   Bachelor Degree [ ]
   Master of Degree [ ]
   PhD [ ]
   Other [ ]

4. Type of business ownership
   Sole Proprietor/family [ ]
   Partnership [ ]
   Limited Company [ ]

5. How long have you been in this line of business?
   Less than 2 years [ ]
   3-5 years [ ]
   6-8 years [ ]
   9 years and over [ ]

6. Number of employees in the enterprise currently
   Less than 5 [ ]
   6-10 [ ]
   11-15 [ ]
   More than 15 [ ]

7. What is your revenue turnover (annually)? ________________
   Less than SSP 3m [ ]
   3m-6m [ ]
   6m-9m [ ]
   More Than 9m [ ]
Section II: Economic Opportunities of Constructing Oil Refinery in South Sudan

Kindly indicate the extent to which the following statements present the economic opportunities of constructing oil refinery in South Sudan. Kindly circle (O) which best describes your opinion of the statement above by using the following scale: 5 = Not at All, 4=Strongly Agree (SA), 3= Agree (A), 2= Disagree (D) and 1= Strongly Disagree (SDA).

<table>
<thead>
<tr>
<th>Statement</th>
<th>SDA</th>
<th>D</th>
<th>A</th>
<th>SA</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The construction of an oil refinery will deeply influence the country’s economic development.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. The construction of oil refinery will phenomenally be profitable.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. The construction of oil refinery will significantly create employment.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. The construction of oil refinery will aid in the balance of trade.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. The construction of oil refinery will attract foreign direct investment.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. The construction of oil refinery will facilitate export oriented production.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. The construction of oil refinery will provide linkages to global markets.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. The construction of oil refinery will stabilize the exchange rate.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. The construction of oil refinery will stabilize the inflation rate.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. The construction of oil refinery will boost the country’s taxes.</td>
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</tr>
<tr>
<td>11. The construction of a new oil refinery will provide sufficient access to credit facilities.</td>
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<td>2</td>
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</tr>
</tbody>
</table>
Section III: Political Opportunities of Constructing Oil Refinery in South Sudan

<table>
<thead>
<tr>
<th>Statement</th>
<th>SDA</th>
<th>D</th>
<th>A</th>
<th>SA</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. The construction of oil refinery will provide an incentive to maintain peace in the country.</td>
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<tr>
<td>13. The construction of oil refinery will create a conducive environment for the country’s an incentive to maintain peace in the country.</td>
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<tr>
<td>14. The increased interaction among countries trading in oil will slowly enhance good relationship with the neighbouring countries.</td>
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<tr>
<td>15. The new oil refinery will deepen the co-operation among the partner states.</td>
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<tr>
<td>16. The construction of the new oil refinery will bring about conflict.</td>
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<tr>
<td>17. The construction of the new oil refinery will not cause conflict.</td>
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<tr>
<td>18. The construction of a oil refinery will reduce the country’s transit fee and border disputes in fuel imports.</td>
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<tr>
<td>19. The construction of the new oil refinery will bring about government self-sufficiency.</td>
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<tr>
<td>20. The construction of the new oil refinery will enable the government to overcome its debt.</td>
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<tr>
<td>21. The construction of the new oil refinery will eradicate poverty.</td>
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<tr>
<td>22. The construction of a new oil refinery will create a good relationship between the government and the private sector.</td>
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</tbody>
</table>
Section IV: Social Opportunities of Constructing Oil Refinery in South Sudan

Kindly indicate the extent to which the following statements present the social opportunities of constructing oil refinery in South Sudan. Kindly circle (O) which best describes your opinion of the statement above by using the following scale: 5 = Not at All, 4=Strongly Agree (SA), 3= Agree (A), 2= Disagree (D) and 1= Strongly Disagree (SDA).

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<tbody>
<tr>
<td>23. The construction of the new oil refinery will enable the government to reduce the high levels of poverty.</td>
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<td>SA</td>
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<td>24. A new oil refinery will improve the livelihoods for the poor in the war-affected areas.</td>
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<td>25. The construction of a new oil refinery will provide sufficient access to technical capabilities.</td>
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<td>26. The construction of a new oil refinery will transfer management competencies.</td>
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<td>27. The new oil refinery will introduce training compatible with the production of oil and gas bio-products.</td>
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<td>28. A new oil refinery will have large social development impacts due to its superior technology.</td>
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<td>29. The citizens will accumulate special skills as a result of employing more technologically advance methods of production after the construction of a new oil refinery.</td>
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<td>30. The construction of a new oil refinery will strengthen the competitiveness of the local industries.</td>
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<td>31. The benefits realized from the construction of a new oil refinery will lead to the development of the education sector.</td>
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<td>32. The gains from a new oil refinery will lead to the development of social amenities.</td>
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THANKS FOR YOUR RESPONSE