UNIVERSITY OF EDUCATION, WINNEBA

INVESTMENT APPRAISAL TECHNIQUES UNDERLYING GHANAIAN

OIL MARKETING COMPANIES INVESTMENT DECISIONS: A CASE

OF GOIL COMPANY LIMITED

BY

FAUSTINA SARFO

2019

UNIVERSITY OF EDUCATION, WINNEBA

INVESTMENT APPRAISAL TECHNIQUES UNDERLYING GHANAIAN

OIL MARKETING COMPANIES INVESTMENT DECISIONS: A CASE
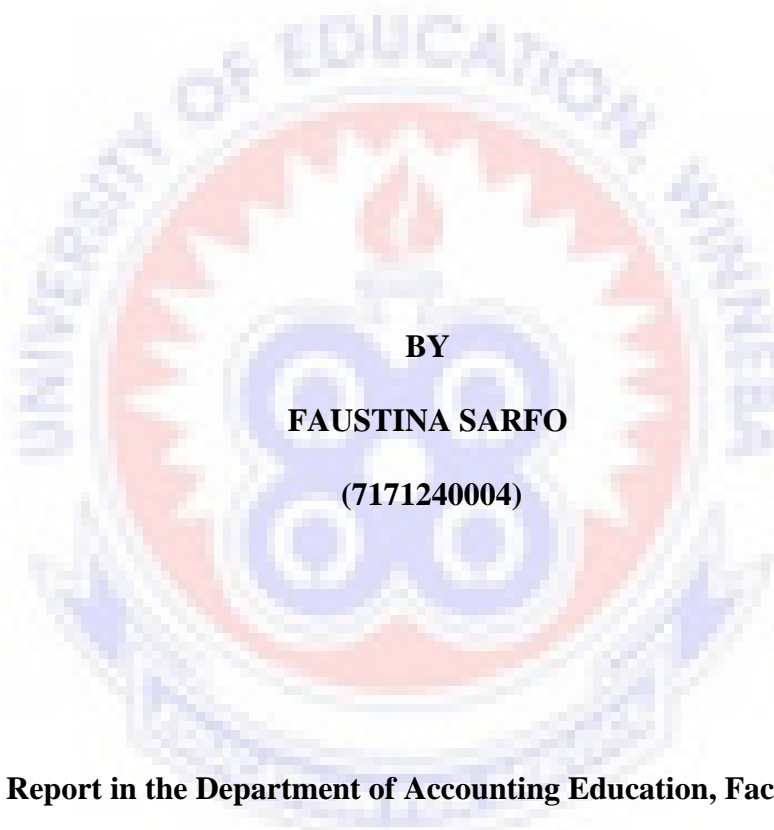
OF GOIL COMPANY LIMITED

BY

FAUSTINA SARFO

(7171240004)

A Project Report in the Department of Accounting Education, Faculty of Business

Education, submitted to the School of Graduate Studies, University of Education,

Winneba in partial fulfilment of the requirements for award of the Master of

Business Administration (Finance) Degree.

JULY, 2019

i

DECLARATION

Student's Declaration

I Faustina Sarfo, declare that this thesis with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

Signature……………………….   Date………………………

Supervisor's Declaration

I hereby declared that the preparation and presentation of this work was supervised by me in accordance with the guidelines for supervision of dissertations as laid down by the University of Education, Winneba.

Signature……………………….   Date………………………

MR. ALFRED B. MORRISON

DEDICATION

This work is dedicated to my lovely husband Tony Sarfo-Adu, my son Raymond Sarfo-Adu and my brother Ernest-Ivan Sarfo.

ACKNOWLEDGEMENTS

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

Figure   **Page**

ABSTRACT

Firms' investment appraisal techniques have become a great area of interest to both academics and practitioners alike. For instance, common opinion among scholars and practitioners is that, a business future success and sustenance largely depend on its ability to get its present investment decisions right. This means that, the decisions inherent to investments are critical to the growth and sustenance of every company be it a private or public entity. Accordingly, this study looked into the investment appraisal techniques that underly Ghanaian Oil Marketing Companies investment decisions. Specifically, the objectives of the study were; to identify the investment appraisal methods used by Goil Ghana in its investment decisions, to identify the main factors that influence Goil Ghana management in the selection of a particular investment appraisal technique and lastly, to investigate the degree of association between Goil Ghana organizational variables (firm size, CEO education and age of the company) and their usage of modern investment appraisal techniques. This study adopted a cross-sectional research study design as such, questionnaire was used as the main data collection tool. The target population for the study came from workers Goil Ghana employees within the Kumasi metropolis who occupied top management position. The study employed probability sampling technique thus, simple random sampling to select the study samples. The study's data was analyzed on the basis of descriptive statistics and simple linear regression analysis. Findings from the study suggest that to a large extent Goil Ghana Company Limited did not extensively employed most of the available investment appraisal methods to guide its investment decisions. Accordingly, it is recommended to the management of Goil Ghana as a matter of urgency to adopt more of existing investment appraisal methods into its investment decisions since every tool has its own strength and weaknesses as such, employing varied forms of investment appraisal tools will enable the organization achieve optimal results from its investment outcomes.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Generally, firms' investment appraisal techniques have become a great area of interest to both academics and practitioners alike. Common opinion among scholars and practitioners is that a business future success and sustenance largely depend on its ability to get its present investment decisions right (de Andrés & Martín, 2015). Brealey, Myers and Allen (2010) put this argument in a better perspective when they argued that a good investment remains good business when even it is not fully financed, however a bad investment will remain a wrong decision even if there is a best financing policy in place.

This means that, the decisions inherent to investments are critical to the growth and sustenance of every company be it a private or public entity (Bennouna, Meredith, & Marchant, 2010). Notwithstanding this importance, investment appraisal decisions are often characterised in much difficulty and uncertainty (Carmona, Iyer, & Reckers, 2010). For instance, investment decisions lie in the fact that a significant amount of capital may be required or committed to a project for a long period (de Souza & Lunkes, 2016). Meaning, after such a decision has been made, its reversal becomes extremely difficult to rescind since any decision to reverse same could probably lead to partial or total loss of the capital invested (Hall & Millard, 2010).

Accordingly, it is imperative that reasonable and suitable techniques are taken or followed to reduce the amount of error when making such decisions that seek to make the most of shareholders value (McLaney, 2006). Due to the large amount of investment that are often

linked to capital budgeting, it has become important that businesses select and choose the most worthwhile appraisal techniques when deciding on their capital budgeting decisions.

It is an undeniable fact that, the business environment within most industries has changed largely by technological innovations, customers taste or government legislations (Matsho, 2010). Interestingly, the petroleum industry is no exception to these new industry movers. For instance, within the context of Ghana, prior to the Mahama's government's decision to deregulate the oil market sector, the National Petroleum Authority (NPA) held the utmost responsibility in pricing the various petroleum products within the Ghanaian market (Braimah, 2017). Hence, oil marketing companies (OMCs) witnessed no intense competition among its rivals since on the face value; the price of gasoline was fixed at the same price across all fuel pumps (Braimah, 2017).

However, the enforcement of the NPA Act meant that the Bulk Oil Distributing companies (BDCs) together with the OMCs will be allowed to price their oil products based on the world oil market price and the supply and demand side within the market. This new policy direction has precipitated into price war among 29 OMCs since each entity wants to attract customers to their pump sites on a regular basis (Braimah, 2017). This happening within the oil sector presupposes, the existing OMCs business growth and sustenance to a large extent will depend on the kind of investments they pursue in the coming years. As such it has become important to look into the sectors investment decisions particularly the techniques that underline their investments since having a mistake in its application would cause a detrimental effect to the financial position of the existing OMCs in the near future. Accordingly, it is against this background that this study seeks to investigate the investment appraisal techniques of Goil Ghana.

1.2 Statement of the Problem

As indicated by Tufuor and Doku (2013) and that of Shinoda (2010) when it comes to the application of the existing investment appraisal techniques, evidence available tend to be inconclusive. Babatunde (2016) held similar view as they posit that a firm's investment appraisal techniques are mostly influenced by its industry characteristics as well as its own operations hence, there are no uniform techniques across industries. For example, de Andrés and Martín (2015) results showed that most of the large Brazilian companies, particularly those listed on the stock exchange prefer payback period, the net present value and the internal rate of return in the assessment of their investment decisions. More so, de Souza & Lunkes (2016) in their studies among 140 non-financial Spanish firms came to the conclusion that payback was the most used tool whereas real options were the least used tool among the studied non-financial institutions. However, with the studies of Arnold and Hatzopoulos (2000) which surveyed some of the biggest UK firms established that over 80% of the entities studied employed NPV in their investment assessment. They also found that all the surveyed firms used NPV or IRR or both for appraising investment projects. Also, work by Block (2007) identified real option as the most preferred form of investment appraisal methods by most US corporations.

Generally, reviews of the enlisted studies show that there are no universal techniques that were consistently applied across all the studies. In spite of this ambivalent in the literature, it appears most of the existing works have been largely focused on American companies with little or no emphasis to organizations within emerging economies such as the Asia-Pacific region or the sub-Sharan context (Chan & Haddad, 2011). Moreover, even though, the existing studies have looked into the various forms of appraisal techniques that guided

3

businesses investment decisions, nonetheless, as indicated by Babatunde (2016), most of these existing works were conducted in the Anglo-American context, making it difficult to overgeneralize the results to other sectors or regions which have peculiar characteristics. Accordingly, to Babatunde (2016) additionally studies ought to be carried out in different regions or context to ascertain the kind of investment appraisal techniques that guide firm's investment decisions within those regions.

Surprisingly, within the context of Ghana, little is known about the investment appraisal techniques used by Ghanaian businesses in their capital investment decisions. Tufuor and Doku (2013) confirm same in their study as they argued that much is not know about the techniques Ghanaian companies uses when making capital investments decisions. Admittedly, the only study that appear to have delve into this area was the work of Tufuor and Doku (2013). Even with them their emphasis was soley on some listed banking, brewery, manufacturing, distribution and insurance institutions with no emphasis to oil marketing companies. Accordingly, this work seek to add more breadth to the Ghanaian literature by assessing the investment appraisal techniques that underly Ghanaian Oil Marketing Companies investment decisions.

1.3 Purpose of the Study

The aim of the study is to explore how Goil Ghana presently apply investment appraisal methods in its investment decisions.

1.4 Objectives of the Study

The study seeks to achieve the following objectives:

1. To identify the investment appraisal methods used by Goil Ghana in their investment decisions.

2. To identify the main factors that influence Goil Ghana management in the selection of a particular investment appraisal technique.

3. To investigate the degree of association between Goil Ghana organisational variables (firm size, CEO education and age of the company) and their usage of modern investment appraisal techniques.

1.5 Research Questions

1. What are the investment appraisal methods used by Goil Ghana in their investment decisions?

2. What are the main factors that influence Goil Ghana management in the selection of a particular investment appraisal technique?

3. What is degree of association between Goil Ghana organisational variables (firm size, CEO education and age of the company) and their usage of modern investment appraisal techniques?

1.6 Significance of the Study

Investment decision forms part of the key issues that financial managers have to deal with on a regular basis. Generally, it is through this act that firms decide on the kind of project to invest its limited resource or capital into. Hence, effective investment decisions are critical to businesses existence and sustenance. Accordingly, this work will enable management of Goil Ghana to know whether their investment appraisal methods are in line with the best practices or modern practices within other sectors or regions.

Again, findings from this study will provide insightful information to the business community particularly the players within the oil and gas sector as to the kind of investment appraisals used by Goil Ghana. Hence, with this companies within the sector will be able to compare theirs to that of Goil Ghana and see where they can make improvement or follow suit. More so, findings from this study will add additional information as to the kind of factors that influence a Ghanaian based oil marketing to select a particular investment appraisal method or technique. Additionally, this work will add to the limited work in this study area particularly the kind of investment appraisals methods used by Ghanaian oil marketing companies. Lastly, the study would also be of relevant to the academic fraternity and other areas as it would expand the scope of learning and research in this area and further serve as point of view for other researchers who may equally like to undertake further enquiry in this area in the future especially in Sub Saharan Africa.

1.7 Limitation of the Study

As similar to other research studies, this study had some limitations as well. For instance, the first limitation of the study came from the study population. Specifically, the study present population came from some selected financial officers of Goil Ghana within the Kumasi metropolis to establish the kind of investment appraisal methods used by their organization. As such, it would make its findings somehow difficult to be fairly representative of all the financial officers of the company within the other regions of Ghana. Secondly, as the study used questionnaire as its main data collection instrument, its data validity and reliability to a large extent depended on the respondents' level of honesty and truthfulness when answering the questionnaire. This means that the result will depend largely on the respondent's opinions and perceptions which in all angle are beyond

the control of the researcher. Accordingly, the respondents' views may not truly reflect the organization's investment appraisal techniques since their responses will be based on their own perceptions and predisposition.

1.8 Scope of the Study

The study looked at the kind of investment appraisal techniques used at understudied institution. It goes further to identify the extent to which such investment appraisal methods are employed by the organization. The study was limited to Goil Ghana Company Limited.

1.9 Organization of the Study

The study is organized into five chapters. Chapter one constitues introduction which pays attention to the study background, statement of the problem, and research questions. Likewsie other areas such as the the study purpose, limitations of the study, scope of the study, and organization of the study were addressed in this chapter. Chapter two looked at other studies related to the present study whereas chapter vhree viewed the methodology adopted for the study. Chapter four focused on results and discussions whiles chapter five looked at the summary of findings, conclusions and recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter commences with the definition of the main concepts of the study. More so, in this chapter, the theoretical foundations of investment appraisal methods are presented together with reviews that take into accounts the study objectives.

2.2 Definition of Investment Appraisal

According to the International Federation of Accountants (IFAC) the concept investment appraisal and capital budgeting connotes the same concept and as such tend to be used interchangeably in the financial management literature (International Federation of Accountants, 2012). Accordingly, within this context the two terms may be used interchangeably since the two terms mean or connote the same thing. From their perspective, investment appraisal can be described as the process of weighing the financial viability of a project or investment by comparing the costs and benefits of the projects in different time periods to ascertain its suitability. Hence, investment appraisal seeks to assess the decisions made by an organization management in reference to the allocation of the firm's resources to varied investment options.

Moreover, as a result of investment unique peculiarities, capital budgeting decisions tends to have dire consequences on business operations if its implementation are not well thought out. A clear case of its unique peculiarities was succinctly presented by Zubairi and Amin (2009) as they assert that likened to current asset management decisions, there is certainly no room for guesswork or the possibility to amend a mistake if a wrong capital budgeting decision is made or has been made and implemented. For instance, ''if you once

8

have a bad experience with a particular supplier for raw material inventory, you may change to a better and more reliable supplier the next time you order inventory. However, if you realize some time after procuring and installing a manufacturing plant that you chose the wrong process or wrong plant capacity, the cost of change in plant would usually be prohibitive'' (Zubairi & Amin, 2009, p.1).

This scenario presented by Zubairi and Amin (2009) goes to affirm the long held view that every business entity future success and sustenance to a large extent is dependent on its ability to get its investment decisions right (Brealey, et al., 2010; de Andrés, de Fuente, & Martín, 2015).

Also, from the position of Mushaho, Mbabazize and Shukla (2015), capital budgeting can be described as the processes that an organization employs to ascertain the viability of an investment decision before resources are eventually channeled to its implementation. According to Mushaho et al. (2015), management usually uses indexes such as projected investment cash inflow and outflows to determine whether the return generated meet a sufficient target.

Generally, investments may consist of major capital spending and strategic investments, such as product development, acquisitions and divestitures that seek to change the future direction of an organization, or in the case of the public sector, large infrastructure projects (International Federation of Accountants, 2012). Hence, it entails all expenditure for future benefit thus, staff training and development, research and development, marketing and revenue enhancement activities, and other intangible expenditures (Finance and Management Faculty Chartered Accountants', 2009; Mushaho et al., 2015).

As suggested by Finance and Management Faculty Chartered Accountants'(2009) capital investments can be grouped into three main forms depending on its motive for investment; replacement, enhancement and obligatory. Replacement capital investment usually becomes incumbent when a business has to change some of its equipment within a regular schedule in order to maintain its operations following normal wear and tear (Finance and Management Faculty Chartered Accountants', 2009). However, with enhancement capital investment they involve the forms of investments that seek to improve operating processes, whether by volume increases, cost reduction or improvements in product quality (Finance and Management Faculty Chartered Accountants', 2009). Accordingly, the investment may be in the form of a procurement or buying of equipment, sponsoring a research and development of a new product or investing in employee training and development initiatives. Conversely, obligatory capital goes with its name that is, the kinds of investment that may enable an organization to conform to an existing regulatory or legal requirement (Finance and Management Faculty Chartered Accountants', 2009).

2.3 Theoretical Underpinnings of Investment Appraisal

 Theories of investment appraisal or capital budgeting techniques date back as far as the 20th century till date. Notable among these theories are the integer programming model proposed by Weingartner (Weingartner, 1966). Incognizant of the investment indicators such as cash inflows, cash outflows and available investment capital as deterministic numbers, Weingartner developed an integer programming model which simply sought to maximize the net present value profit of the selected projects under budget limitation.

However, in recent times, Weingartner's model has significantly been extended to increase its relevance and applicability to the real-world situations by the inclusion of other dimensions (Zhang, Huang, & Tang, 2011). Some of the key inclusions have been the

suitable objective function (Bernhard, 1969), the integration of the investors' capital structure (Baumol & Quandt, 1965), the handling of differences between borrowing rates and lending rates (Padberg & Wilczak, 1999), and the integration of project portfolio selection, staff assignment and learning in a new holistic model (Gutjahr, Katzensteiner, Reiter, Stummer, & Denk, 2010).

Additionally, other new models such as the Monte Carlo simulation has been proposed to aid studies or managers when it comes to the assessment of the expected return and the risk of a project (Brigham & Houston, 2002). Also, other models like the evolutionary method has been proposed to enable businesses address the multiple stochastic objectives for the project selection problem (Medaglia, Graves, & Ringuest, 2007). Moreover, in situations where the investment indicators have to be treated as fuzzy numbers, Carlsson, Fullér, Heikkilä and Majlender (2007) came out with the fuzzy mixed integer programming selection model for research and development projects. Again, Bas and Kahraman (2009) developed a primal–dual pair based on t-norm/conorm relation for the constraints and objective function for a fully fuzzified pure capital rationing problem. Equally, Huang (2008) developed a mean-variance model that can be applied to fuzzy capital budgeting problem especially when the expected net present value is to be used to quantify fuzzy project returns and variance to measure the risk of the project. All these chronologies of theories go to affirm how the field of capital investment have developed ever since its conception in the early parts of the 20th century.

However, for purposes of this work, the agency theory of Jensen and Meckling (1976) will be employed as the theoretical framework for the study. According to de Andrés et al. (2015), the agency theory has been widely used to study wide range of issues when it

11

comes to firm's investment decision and efficiency. Largely among the factors that contribute to the alignment of managerial and shareholder incentives, the financial literature has brought to bear the impact that debt or obligations control such relationship (Harris & Raviv, 1991). According to de Andrés and colleagues (2015), obligations that is, borrowing or credit discipline managers by imposing a regular payment schedules that requires the organization to pay off its interest and principal within the stipulated time lines. Hence, when such incidence happens, it constrains manager access to 'free cash-flow' hence, forcing him or her not to waste the limited cash on unprofitable ventures or investment options.

Moreover, an organization inability to meet its obligation (i.e. payment plans) tend to threatens shareholder investment as well as the manager's position and reputation (Jensen, 1986). Accordingly, this possible threat helps to bring the managers' interests in alignment to that of the shareholders hence, decreasing the possibility of encouraging unscrupulous investments aimed at satisfying managers' personal desire (de Andrés, et al., 2015). Moreover, as managers tend to increase their ownership stake via stock sharing policy, they become more guided to use the available resources in areas that can create more value to himself and that of the other shareholders (Jensen, 1993; McConnell & Servaes, 1995). Accordingly, the similarity between the manager's incentive to that of the shareholders may influence his decision to select appropriate capital budgeting tools for his investment decisions (de Andrés, et al., 2015). According to Brounen et al. (2004), institutions that usually seek to make best use of its shareholder value are more likely to use theoretically appropriate capital budgeting techniques. Consistent views were confirmed in the studies of Baker, Dutta and Saadi (2011) as their results revealed that misalignment of manager's incentive to that of the shareholder incentive led to poorer investment decisions. This

means for any business to witness appropriate selection of investment tools, then there has to be a deliberate alignment of managerial and shareholder incentives (Triantis, 2005). Studies by the likes of Graham and Harvey (2001) and Brounen, de Jong and Koedijk (2004) have all confirmed similar trend within their respective studies. Accordingly, as this study seeks to identify the specific investment appraisal methods used by Goil Ghana in their investment decisions, this study will equally test this assumption of the agency theory to establish whether having an alignment between Goil Ghana managerial and shareholder incentives will result in the selection of appropriate investment appraisal tools during project assessment.

2.4 Investment Appraisal Methods

Evidence available in the literature suggests that investment options can generally be assessed from two main approaches thus, either through the traditional techniques that is, the payback period (PB) or via more sophisticated discounted cash flow (DCF) methods namely; net present value (NPV), internal rate of return (IRR), profitability index (PI) (Berkovitch & Israel, 2004; Marino & Matusaka, 2005). Again, aside these approaches, there are also other strategic investment assessment methods such as; technology road mapping, strategic cost management and value chain analysis that could equally be used depending on the project at stake (Tuomaala, 2007). According to Shank (1996), these new methods are employing cost analysis concepts together with the strategic aspects and the context of a business to inform a business investment decision.

However, with the value chain analysis it seeks to enable businesses unravel their strategically important value-creating activities and consequently come out with suitable competitive strategies to appraise investment opportunities (Hoque, 2001). Technology road mapping, on its part, is regarded as the process that contributes to the definition of

13

technology strategy by indicating the interaction between products and technologies over time as well as applying graphs to reveal the interrelationship between technology and business needs (Alkaraan & Northcott, 2006). However, for purposes of this study some of the traditional and sophisticated forms of investment appraisal techniques will be discussed in the preceding sections.

2.4.1 Net Present Value Method

Generally, Net Present Value (NPV) happens to be one of the widely used investment analysis tools among business leaders and managers (Hermes, Smid, & Yao, 2007; Bennouna et al., 2010; Viviers & Cohen, 2011). Its high preference or adoption among business is born out of the fact that it gives much focus to all the values with regards to the cash inflows and outflows that may come from an investment (de Souza & Lunkes, 2016). Specifically, NPV seeks to measure the absolute financial benefit of a project (Arnold, 2008). Hence, having positive cash flow suggests there will be cash inflows whereas the contrary suggests there will be cash outflows. Nonetheless, when the eventual NPV tends to be negative, it suggests that the real rate of return will be lesser than the minimum expected rate of return and for that such investment opportunity can be ignored (Babatunde, 2016).

Although, the theoretically assumption behind NPV suggests that all projects that have a positive NPV or NPV value greater that zero ought to be accepted nonetheless, it is equally note while to state that it is not in all instances that positive NPV will be prudent since at times too there could be projects with negative NPV yet such projects may still offer more value than projects with positive NPV (Kasozi, 2012). Accordingly, based on certain criteria, projects with low negative or zero NPV could still be accepted if the investment climate will eventually be positive in the long run (Kasozi, 2012).

14

According to Kasozi (2012), the real benefits associated with NPV assessment is its ability to straightforwardly ascertain the value of a project based on the information available to the decision-maker. Hence, by deducting a projects initial investment from the present value of its cash inflows a firm or business manager will get to know whether the project is profitable or not (Gitman, 2009). Another advantage of NPV assessment is its ability to combine a risk-adjusted discount rate which can then be used as a standard for appraising acceptable projects (Kasozi, 2012).

2.4.2 Discounted Cash Flow Method

Discounted Cash Flow (DCF) tends to be one of the sophisticated investment appraisal techniques. It largely considers both the time value of money as well as the total profitability of a given project's life cycle. As indicated by the International Federation of Accountants (2012), DCF assessment takes into accounts the time value of money, based on the premise that (a) people prefer to receive goods and services now rather than later and (b) investors prefer to receive money today, rather than the same amount in the future. Meaning, receiving one cedi today is worth more than two cedis tomorrow. For instance, a shareholder to any company will desire for a rate of return when it comes to instances where the said investment is found to be riskier (International Federation of Accountants, 2012).

According to International Federation of Accountants (2012), out of the methods of DCF, the NPV tends to be most prefered nonetheless, IRR has the ability to indicate the probable project's annual average return on investment in percentage terms. For this, IRR tends to be very useful in communicating an analysis of investment options to investors and employees even when they have limited financial knowledge. However, its simplicity can

15

produce confusing results in certain contexts. For instance, comparing the IRR with the anticipated rate of return can be beneficial when deciding whether to commence with an investment or not however, this approach will not be able to depict the possible increase in a company's monetary value that may come from the investment option (International Federation of Accountants, 2012). Nonetheless, with NPV, it has the ability to join together separate discount rates for different periods, and cash flow streams of different systematic risks hence, it allows a better reflection of changing macroeconomic conditions, such as inflation and interest rates, and the systematic risk of all projected cash flows.

2.4.3 Payback Method

According to Babatunde (2016), payback assessment method seeks to find out the number of years an investment cash inflow will compare to its cash outflow. Hence, it seeks to identify the investment option that has shorter payback time or period. The shorter the payback period, the more prudent the investment is (Babatunde, 2016). Consistent views were shared by Kasozi (2012) as the author asserts that payback period (PB) method largely seeks to ascertain the time period that may be required to pay off the amounted invested in a given project. The assumption here is that, the computed payback period ought to be lower or lesser than the maximum acceptable payback period for a project to be deemed fit or appropriate.

Since it considers the timing of cashflows, it is deemed to have the ability to assess the risk exposure of a given project (Arnold, 2008; Gitman, 2009). The PB is found to be extensively used by large firms to assess small projects due to its computational simplicity and intuitive appeal. For instance, in the studies of Batra and Verma (2017), it was established that most companies particularly those in Indian (i.e.84%) that were found to be old, experienced and well established with ages (greater than 40 years) preferred the

payback period method whereas a marginally lower (43%) of young companies with age (less than 20 years), use this technique. Batra and Verma (2017) subsequently attributed its high usage among the studied CEOs and CFOs to the fact that PB places more emphasis on liquidity and risk consideration during investment analysis.

Similarly, within other context such as, Germany (Sridharan & Schuele, 2008), Sweden (Holmen & Pramborg, 2009), Spain (Iturralde & Maseda, 2004), Japan (Shinoda, 2010), China (Hermes et al., 2007), Hong Kong and Singapore (Leon, Isa, & Kester, 2008) results obtained still seem to suggest notwithstanding the call for managements and financial managers to adopt sophisticated investment analysis, many still prefer the old way that is the payback period method.

2.4.4 Real Options

Generally, real options investment analysis seeks to make managers reconsider their investment options in order to satisfy for themselves why a particular investment responds well to their strategic direction (Finance and Management Faculty Chartered Accountants', 2009). A real option is the right, but not the compulsion, to carry out a business decision, such as capital investment. Not like financial options, real options are not sellable (i.e. a firm cannot merely decide to sell off its right to develop a new patent to a third party) (Finance and Management Faculty Chartered Accountants', 2009).

According to de Andrés et al. (2015), the real options approach extends traditional NPV to join the value of 'growth' and'flexibility' options that is, the possible actions to be taken in reaction to new information over time. Although, academics have consistently recommended or favored the use of real options over the other methods yet, corporate practices have continously exhibited their preference for methods such as, IRR, PB and

NPV (Iturralde & Maseda, 2004; Sridharan & Schuele, 2008; (Holmen & Pramborg, 2009; Shinoda, 2010).

As to what could have possibly accounted for its less acceptance among business leaders, Baker et al. (2011) found out that the core reason many managers gave for their unused of real options' is the lack of its applicability to their business. Also, due to its high computational complexity (Mathews, Datar, & Johnson, 2007), coupled with lack of understanding of its main principles (Block, 2007; Rayo et al., 2007; Baker et al., 2011) many businesses hardly prefer its usage. For instance, recent studies seem to suggest that real option method is being progressively adopted nevertheless, it still remains far behind methods such as, DCF and PB period methods (Alkaraan & Northcott, 2006; Rayo, Cortés, & Sáez, 2007; Truong, Partington, & Peat, 2008; Shinoda, 2010).

2.5 Factors that Influence Firms' Selection of Investment Appraisal Method

Generally, the kinds of capital budgeting tools used in these contemporary times have moved away from the traditional methods to a more sophisticated means such as NPV, IRR, Real Options, MIRR and Simulation Analysis (Anand, 2002; Verma et al., 2009; Singh et al., 2012). This is not to suggest that other traditional methods such as, payback period method, has been completely ignored as it is still used by many firms (Gupta et al., 2011). On this score, this section of the study seeks to identify the factors that influence a firm's management decision in the usage of a particular investment appraisal method.

In the studies of Andor, Mohanty, and Toth (2011) and Brounen, De Jong, and Koedijk (2004), it was established that the factor that influenced firm decision to use a particular investment appraisal technique was the size of its capital. Expressly, in their studies, it was established that bigger firms with larger capital budgets tend to prefer NPV and IRR.

18

Meaning, the degree of sophistication in terms of application of DCF techniques such as, NPV and IRR and other sophisticated techniques such as real options and MIRR is likely to go in tandem with the size of capital budget. Consistent results were reported in the studies of Anand (2002), Graham and Harvey (2002) and Ryan and that of Ryan (2002) as their work established that a firm application of a particular investment appraisal method or technique was shaped by its size of capital budgets.

Again, same conclusions were made in the studies of Wnuk-Pel (2014) as the author's work seek out to assess how factors such as, the type of activity, origin of equity capital, size of company and magnitude of capital expenditure budget influence: (1) investment appraisal methods used (ARR, PB, DPB, IRR and NPV), (2) discount rate used in DCF methods, (3) methods of risk assessment and (4) procedures used in investment appraisal. Evidently, results from the study showed that issues such as size of company's capital expenditure budget, foreign ownership, company size had a significant effect on the kind of investment appraisal that said organization employed in its investment analysis. However, with reference to firm's activities it engages in, it was revealed that such factor had no influence on the type of investment technique that firm employed for its investment analysis.

Concurrent results were reproduced in the studies of Hasan (2013) as the author's work established that strong linkage between firm size and its adoption of advanced form of capital budgeting techniques. Specifically, Hasan (2013) work sought to identify the kinds of capital budgeting methods used by Austrian small manufacturing enterprises. The study results revealed that Austrian SMEs were more tuned to payback budgeting techniques largely because of its easy computation and its ease of use.

19

Equally, in a survey undertaken by Verma et al. (2009) within the context of India, it was established that firm size was a major influencer when it came to which budgeting technique to use or employ. Expressly, it was established in their studies that larger Indian firms preferred advanced capital budgeting tools like IRR and NPV than their smaller counterparts.

Also, in the studies of Batra and Verma (2017), it was observed that a company's sales has a direct bearing on the type of investment appriasal techniques it uses or employs within a given time. For instance, they noticed that companies with annual sales exceeding 100 billion dollars are more favoured of the NPV, IRR and MIRR. Again, the interesting twist about their findings is that the application of tools such as NPV, IRR, APV, MIRR and real option adjusted when a company's sales revenue increases. Hence, companies that have its sales moved beyond 100 billion dollars, the usage of NPV and IRR methods was at high as 89.3% and 92.8% respectively. Conversely, companies that recorded less sales that is, less <10 million dollars never or seldomly used NPV for its investment options assessment.

Analogous results were found in the studies of Graham and Harvey (2002) and Ryan and Ryan (2002) as their work results revealed that larger companies (i.e. companies with more sales revenues) tend to use more of NPV and IRR techniques than smaller firms. Meaning the more sales a company makes within a given year the more likely such company will use a more sophisticated capital budgeting technique.

Moreover, another factor identified to influence firm decision when it comes to which budgeting technique to use is the level of complexity and its ease of use. For instance, in

a more recent study undertaken by Horn, Kjærland, Molnár and Steen (2015), it was established that issues such as lack of familiarity with real option concepts and the complexity of real options was the key issues that impeded businesses ability to employ it in their investment decisions. Specifically, this study surveyed over 1500 CFOs of some of the largest companies from European countries like Norway, Denmark and Sweden. Interestingly, the investment appraisal technique found to be extensive used among these CFOs was NPV (74% used this technique). Comparable results were opined in the works of Bennouna et al. (2010) and that of Block (2007) as their work observed issues of complexity and unfamiliarity made real options less favored among business leaders and financial managers.

As rightly put by Batra and Verma (2017) the high level of involvedness and exertion associated with methods like real options, MIRR and simulation analysis limited its application among most financial managers. Meaning, an investment appraisal technique is more likely to be used or adopted within a given organization when users were found to be familiar with its application, find its less complex to use or understand and also having in existence other computational technologies that make its use very simple and straightforward (Ryan & Ryan, 2002).

More so, it has been established that a firm age which is a relative measure of older or younger firms did determined which budgeting technique a firm uses. In the works of Batra and Verma (2017), it came to bear that most of the understudied firms (84%) of the old, experienced and well established companies with age (greater than 40 years) forechose ('often' or 'always') the payback period method whereas a marginally lower (43%) of young companies with age (less than 20 years), use this technique.

21

On the other hand, even though Obi and Adeyemo (2014) study samples were aware of the gains associated with net present value together with other sophisticated investment appraisal techniques, yet still the firms adopted or favored payback period over these methods. Genuinely reason found to have accounted for such happening was issues such as the nature of their economic environment, their size, lack of sufficiently qualified personnel, paucity of funds and their weak organizational structure.

Finally, a study by de Andrés et al. (2015) which sought to establish the kinds of investment appraisal techniques used by 140 non-financial Spanish firms in their investment decisions came to the same conclusions. Specifically, their study revealed that payback method was the most widely used method whereas real options was used by fewer of the studied companies. Accordingly, their results confirmed that size and the nature of industry are related to the frequency of use of certain capital budgeting techniques. Further, they established that the relevance of growth opportunities and flexibility is an important factor explaining the use of real options.

2.6 The Degree of Assocation between Firm Size, Age and CEO education and Usage of Modern Investment Appraisal Techniques

Althought theoretically it has proven to be less prudent or appropriate to employ simple tools in investment decisions. Hence, more advanced and sophisticated techniues have been proposed and developed to guide management in their investment analysis nonetheless, evidence available seems to suggest that tools such as, real options NPV, MIRR, simulation analysis, etc. are still less favoured among business financial managers (Verbeeten, 2006). Accordingly, this section seeks to look at both institutional as well as

the managerial factors that do influence firms decision to employ advanced capital budgeting techniques.

Some sections of the studies purports that a business capital budgeting methods to a large extent rely on organizational characteristics such as firm size (Danielson and Scott, 2006; Sridharan and Schuele, 2008), industry related factors (Block, 2007; Rayo et al., 2007) and home country's level of economic development (Hermes et al., 2007). Consistent with the position of Maquieira et al. (2012) a firm's size has a signficant impact on the kind of capital budgeting techniques it uses. Expressly, in their works, it was established that larger companies tend to use more sophisticated methodologies for investment assessment, while the small companies tend to employ the more traditional or simple methodologies.

Comparable results were established in the works of Andor, Mohanty, and Toth (2011) and Brounen, De Jong, and Koedijk (2004), as their work results noticed that larger firms with larger capital budgets tend to prefer more sophisticated capital budgeting techniques that is NPV and IRR. Hence, their work concluded that the extent of sophistication with the application of DCF techniques of NPV and IRR and improved methods such as real options and MIRR are more likely to increase with the increase in size of capital budget. Meaning as the size of a firm's capital buget increases their willingness to adopt more sophisticated capital budget techniques increase concurrently.

Aside these firms related characteristics, other factor particularly those related to that of the manager has been found to influence capital budgeting practices. Largely, managers characteristics such as his level of education (Brounen et al., 2004), age (Hermes et al.,

2007) and extent of participation in decision-making process (Rayo et al., 2007) has been found to be most significant factors that do predict businesses capital budgeting practices. Likewise, in a study undertaken by de Andrés et al. (2015), it was observed that a manager years of experience in the job has a direct link on the kind of capital budgeting practices used. Expressly, in the studies of de Andrés and colleagues (2015), it was established that sensitivity analysis was less used by mangers who have more years of experience in the company and used frequently by those who hold an MBA or a Master's Degree in Finance. Some how, Graham and Harvey (2001) make same observation as their work found out that managers with greater experience tend to use NPV than those with less years of experience. Likewise, it has been confirmed in other studies that one level of education (i.e. MBA) encourages that person to use discounted cash flow models than traditional methods (Hermes et al., 2007) and sensitivity analysis (Chazi et al., 2010).

Similarly, in the studies of Ryan and Ryan (2002), it was revealed large firms with high debt ratios as well as those with managers with MBAs tend to favoured the usage of NPV and IRR than their counterparts with less of debt ratio and lower MBAs employees. Likewises studies undertaken by Verma et al. (2009) within the context of India confirmed same as their results suggested that capital budgeting techniques such as, IRR and NPV were found to be most popular investment methods among larger firms than their smaller counterparts.

Similarly, in the studies of Brounen et al. (2004), it was evident that European companies managed by a CEO with an MBA (except for the UK) tend to use NPV more often. Hence, they concluded that with an increase in a CEO's educational qualifications, his preference to use sophisticated techniques also increased concurrently.

However, in the studies of Batra and Verma (2017) same observations could not be made. Specifically, their study revealed that none of the companies with highly qualified CEOs (greater than a master's degree) and a very small percentage of MBA CEOs made use of the advanced techniques like MIRR and NPV adjusted with real options. Their study went on to establish that even with the most educated CEOs the evidence available suggests that they were very diffident to use or accept sophisticated capital budgeting techniques in their investment decisions. Lastly, their study again showed that MBA CEOs favour to use IRR as the primary technique and payback as a secondary criterion even more than NPV method.

2.7 Conceptual Framework

A conceptual framework is a graphic or scripted text, one that "describes, either pictorially or in narration format, the principal variables to be examined, the core factors, concepts, or constructs and the assumed connection among them" (Bryman, 2012). Hence a conceptual framework shows the key concepts that a study seeks to understudy within a given research. As indicated earlier investment options can generally be assessed from two main approaches thus, either through the traditional assessment techniques that is, the payback period (PB) or via more sophisticated discounted cash flow (DCF) methods namely; net present value (NPV), internal rate of return (IRR), profitability index (PI) (Berkovitch & Israel, 2004; Marino & Matusaka, 2005). However, what has to be noted is that each of these methods or approaches has its own strength and weaknesses.

Moreover, as the new law by the NPA has given the direct control to OMCs and BDCs with regards to the pricing of their petroleum products, there has been instant cases of price war among the 29 existing OMCs since each entity wants to attract customers to their pump sites on a regular basis (Braimah, 2017). This happening within the oil sector

presupposes, the existing OMCs business growth and sustenance to a large extent will depend on the kind of investment opportunities they pursue in the coming years. As such, it has become important to look into the sectors investment decisions particularly the techniques that underline their investments since having a mistake in its application would cause a detrimental effect to the financial position of the existing OMCs in the near future. Accordingly, on this score, this study seeks to investigate the key investment appraisal techniques used by Goil Ghana in its investment decisions.

Again, with regards to the kind of investment techniques a firm decides to use or employ, evidence from the literature suggests that the method or approach a firm uses largely depends on issues such as; capital budget size, firm size, CEOs or financial managers level of familiarity with the approach and level of education as well as the availability of management support and technology for its computation. For instance, in the studies of Andor et al. (2011) as well as Brounen et al. (2004), it was established that the factor that influenced firm decision to use a particular investment appraisal technique was size of capital. Expressly, in their studies, it was established that bigger firms with larger capital budgets tend to prefer NPV and IRR. Consistent results were reported in the studies of Anand (2002), Graham and Harvey (2002) and Ryan and Ryan (2002) as their work established that a firm application of a particular investment appraisal method or technique was shaped by its size of capital budgets. Again, same conclusions were made in the studies of Wnuk-Pel (2014) as results from the study showed that issues such as size of company's capital expenditure budget, foreign ownership, company size had a significant effect on the kind of investment appraisal that said organization employed. Moreover, another factor identified to influence firm decision when it comes to which budgeting technique to use is the level of complexity and its ease of use. For instance, in a more

26

recent study undertaken by Horn et al. (2015), it was established that issues such as lack of familiarity with real option concepts and the complexity of real options was the key issues that impeded businesses ability to employ it their investment decisions. Accordingly, this study will likewise seek to test how these indicators or parameters will shape Goil Ghana decision to use a particular capital budgeting technique over the other. Hence, the factors that are to influence Goil Ghana decision to adopt a particular capital budgeting technique have been pictorially presented in Figure 2.1.
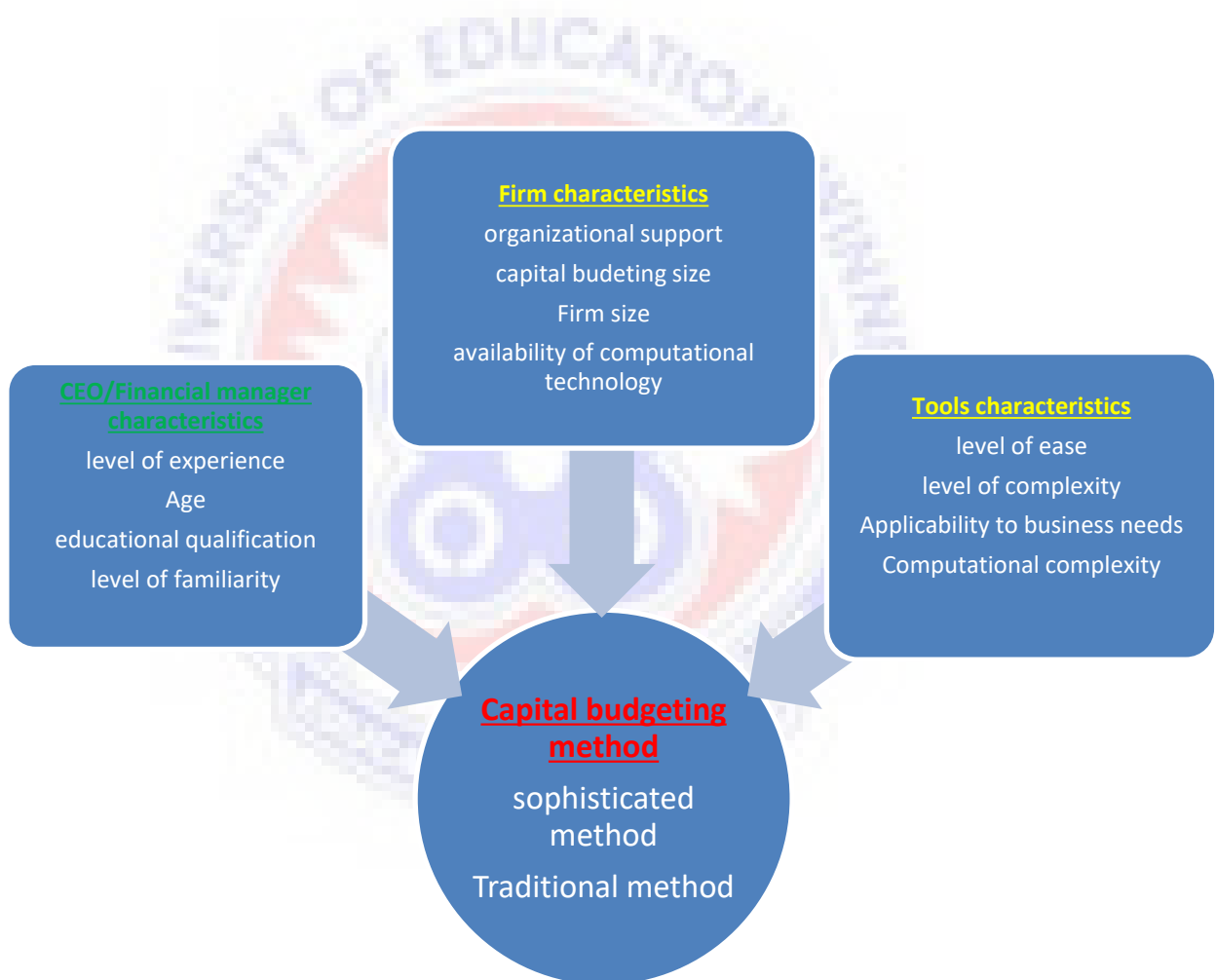
Figure 2.1: *Framework for analyzing the factors that will influence Goil Ghana usage of a particular capital budgeting technique*

Source: Author's construct, 2019.

CHAPTER THREE

METHODOLOGY OF THE STUDY

3.1 Introduction

This chapter is devoted to explaining the methodology employed in this study. It shall provide information on the research design, target population, and sampling techniques. It shall as well deal with procedures for data collection, description and distribution of instruments and equipment to be used in both data collection, and analysis.

3.2 Research Design

According to Hair, Celsi, Arthur, Samouel and Page (2011) many research designs exist to undertake scientific enquiry in the field of business. However, as rightly indicated by Saunders, Lewis and Thornhill (2009) depending on the way a study asks its research questions and present its purpose, a study's research design could take the form of an experimental or quasi-experimental, cross-sectional, case study, longitudinal or comparative design (Saunders, et al., 2009). According to Bryman (2012), true experiments are very unusual in social and managerial sciences, but are used in connected areas of investigation, such as social psychology and organization studies, while researchers in social policy sometimes use them in order to assess the impact of new reforms or policies on the recipients. However, with cross-sectional design, it involves the collection of data on more than one case (usually quite a lot more than one) and at a single point in time in order to collect a body of quantitative or quantifiable data in relation to two or more variables (usually many more than two), which are then examined to ascertain the patterns of relationship between the variables (Bryman, 2012). Also, with longitudinal design, a sample is surveyed and is surveyed again on at least one further occasion. Thus,

it quite similar to cross-sectional design as it seeks to establish the relationship between variables. However, the only dissimilarity between the two designs is the number times data are collected on the sample involved in the study. Finally, with a case study design it entails the detailed exploration of a specific case, which could be a community, organization, or person (Bryman, 2012). From these brief explanations of the various forms of research designs, the present study is positioned within the context of a cross section research design. Specifically, since the study seeks to explore factors that influence Goil Ghana management in the selection of a particular investment appraisal technique.

3.3 Population of the Study

According to Bryman (2012), population refers to the universe of units from which the sample is selected from. Generally, a study population could take the form of nations, cities, regions, firms, events, etc. Within this study context, the institution selected for this research work was the Goil Ghana Company Limited. Top management staff of Goil Ghana within the Kumasi metropolis constituted the study's targeted population. Since in practice it is the top management of an organization who overtime have built extensive knowledge and understanding about how their organization's operations unfold due to the roles they play in the day to day operations of the company, they are the employees who will be in the best position to provide valid responses about the main capital budgeting tools used within their organization. Therefore, employees of Goil Ghana who occupied top management positions formed the study population since they were better placed to provide the information needed for the study. Based on the researcher's preliminary field visit to the Kumasi Head Office of Goil Ghana, it became evident that Goil Ghana had 60 workers within this category. Hence a projected number of 60 workers of Goil Ghana have been targeted for this study.

3.4 Sample and Sampling Techniques

A study sample is the segment of the population that is selected for investigation. Hence, a sample is a subset of the population. However, the sampling approach used to select a sample for a study is very important to a study success as it provides a researcher a means to collect data without using the entire population, in particular when both time and budget constraints exist for the researcher. According to Bryman (2012), the method of selection may be based on a probability or a non-probability approach. However, the decision to select a sampling approach is informed by what the study seeks to achieve. For instance, if a study seeks to ensure that each unit in the population has a fair or equal chance of being selected, then random sampling should be employed (Creswell, 2014). In contrast, if a study purpose is to collect data or information from a selected few then non-probability sampling approach should be used. However, what each researcher ought to know beforehand is that each sampling approach has its own consequences.

From the perspective of Kumar (2011), when a study seeks to ensure that its sample become an precise representation of the study population so that at the end its findings can be generalized to the entire population, then random sampling or probability sampling method is appropriate. Interestingly, non-probability sampling does not guarantee this effect in its application.

As this study wanted to ensure that its sample will form the exact representation of the study population, a simple random sampling method was used. However, as stated by Bryman (2012), when a study population size is less than 100, it is required that the study use all the population size as its study sample. Accordingly, within this context, the study total population size of 60 was still maintained as the study sample size. Hence, on this note, the sample size of the study stood at thirty.

3.5 Data Collection Instrument

As rightly indicated by Bryman (2012), simply identifying a firm or sample and deciding to study it thoroughly is not in itself going to produce any data. Hence, it is the data collection instruments that helps a study to obtain data from the study respondents. However, it has been argued that the choice of research instrument should be guided by a study's research questions and objectives (Saunders et al., 2009). Meaning the selection of a particular research instrument should be informed by its ability to enable a study answer its research questions and objectives effectively. Equally, other factors such as the extent of existing knowledge, the amount of time and other resources all have to be considered when deciding on which research instrument to use (Saunders et al., 2009).

Specifically, this study used a self-administering questionnaire as its data collection instrument since it was best suited to the research plans as the study had to gather the same data from the same respondents. According to Yin (2009), the type of research questions being asked is important in determining the data collection method to employ. When phrases such as 'who', 'what', 'how much', and 'to what extent' questions are used, the appropriate tool to use is questionnaire instruments. In this survey, the nature of the research questions being investigated, for example are; what are the investment appraisal methods used by Goil Ghana in their investment decisions? What are the main factors that influence Goil Ghana management in the selection of a particular investment appraisal technique? And finally, what is degree of association between Goil Ghana organizational variables (firm size, CEO education and age of the company) and their usage of modern investment appraisal techniques?

Therefore, questionnaire was seen to be appropriate for this study. The study used a 5-point Likert scale questionnaire items in eliciting responses from the participants. The questionnaire had three sections. The first section comprised of questions on the respondents' background information as well as the studied firm background information, section two included questions on the kinds of capital budgeting tools used at the studied organization and the last section comprised of questions the factors that are likely to influence their decision to use a particular capital budgeting tool.

3.5.1 Sources of Data

The study relied on both primary and secondary data sources. The primary source of data was chosen because there was the need to obtain primary information from the respondents using questionnaires. Moreover, a number of secondary data were also selected from various related articles and publications in journals. Other information from books and thesis by other authors were also used. This was to acquire a broader knowledge on capital budgeting practices and that factors that shape firm's decision in the adoption of a particular capital budgeting tool over the other.

3.6 Data Collection Procedures

The questionnaires were sent out to the selected workers of Goil Ghana to enable the researcher have adequate insight into the problem under study. Additionally, permission was sought from the Head Office of Goil Ghana before the questionnaires were given to the selected respondent to respond to. Moreover, a cover letter was attached to each questionnaire. The letter outlined the purpose of the study and provided assurance of confidentiality. It also included the researcher's name and contact details. Churchill and Iacobucci (2002) added that cover letters are very important in convincing respondents to

cooperate in a study. The questionnaire administration was done by the researcher herself through personal visit to the various designated offices of the company.

3.7 Reliability and Validity of the Measuring Instrument

Generally, to achieve reliability in quantitative studies, it is required that the questionnaire used is able to guarantee that those answering the questions really understand what the questions require of them. In the same vein, it is expected that those interpreting (researcher) the responses also do appreciate the responses the respondents gave out. According to Saunders et al. (2009), the reliability of the data a study collects and the responses a study achieves depend largely on the design of its questions, the structure of its questionnaire and the rigour of its pilot testing exercise. This suggests that in quantitative research, the instruments used should be pre-tested at a similar sample to ascertain whether the main sample will truly appreciate the questions when presented to them eventually.

Accordingly, to guarantee instrument reliability in this context, a pilot test was conducted at a comparable setting thus, Goil Tanoso branch. This exercise helped the study to ascertain whether the respondents really understood the items as presented. After the pre-test, any indications of ambiguities realized were modified to make them straight forward and more meaningful going forward.

However, with validity it is concern with whether the findings generated from a study are really about what they appear to be about. Hence, it is more concerned about the integrity of the conclusions that are made from a piece of research (Bryman, 2012). Specifically, in quantitative studies, validity is concern about three areas namely; measurement validity,

internal validity and external validity. With measurement validity, basically, it seeks to ensure whether a measure that is devised out of a concept really does reflect the concept that it is supposed to be denoting or measuring. Hence, to achieve this, expert in the field of capital budgeting practices were consulted to vet the questions on the face value to ascertain whether the questions really do depict what it seeks to measure.

Also, a thorough theoretical review of the literature was done to identify what previous studies used to measure these constructs before the questions were finally developed. Again, to ensure the external validity of the study findings to the study population, the selection of the study participants was based on a probability sampling approach particularly a simple random sampling technique. Hence, each respondent had a fair share of being selected to partake in the study which in effect made the study findings representative enough to be generalized to the whole population.

3.8 Ethical Consideration

Ethical conduct states that it is the responsibility of the researcher to assess carefully the possibility of harm to research participants and to the extent that any likely events that has the potential of harming the respondents involved ought to be minimised (Bryman & Bell, 2007). Again, when undertaking any enquiry, it is likewise central that participants are made aware of why the study is being carried out and what will be done with the information they provide. If this is not made clear, the information given may not be entirely truthful or accurate. It is important to inform respondents that their identities will not be shared and that there will be full confidentiality for the report writing. It is equally important that in quantitative research, investigators must be completely objective and try not to influence a study with their own values and perceptions (Burns & Grove, 1993). In

34

an attempt to address this, concern firstly, permission was sought from the Kumasi Head Office of Goil Ghana before the researcher distributed the questionnaires to the participants to fill out.

Additionally, every questionnaire that was sent out had a cover letter attached to it clearly indicating the purpose of the survey. The questionnaire didn't require the names of the respondents; this was to protect their identity and remain anonymous. As a result, the employees were aware from the beginning what the researcher was doing, why and where the information was going and why it was being gathered.

3.9 Data Analysis

Kumar (2011) contends that raw data obtained from a research is meaningless unless it is changed for the purpose of decision-making. Data analysis usually involves reducing the raw data into a manageable size, developing summaries and applying statistical inferences. The empirical analysis for the present study seeks to investigate how Goil Ghana presently apply investment appraisal methods in its investment decisions and subsequently identify the main factors that influence Goil Ghana management in the selection of a particular investment appraisal technique. The data collected were keyed into the Statistical Package for Social Scientist (SPSS) version 20.0 and the result of the study was analyzed on the basis of descriptive statistics and Pearson correlations and multiple regression analyses.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

4.0 Introduction

This chapter presents the analysis of the final data collected from the field survey and summaries of the basic statistics related to the respondents' demographic profile as well as the main measuring items of the study. The Statistical Package for Social Sciences (SPSS) version 20.0 was used for the descriptive as well as the inferential statistics. This chapter is structured into three sections. The first section presents the response rate and the demographic profile of the respondents. The second section deals with the analysis of the investment appraisal methods used at the studied organization. Finally, the third section looks at the main factors that did influence the studied organization decision to select a particular investment appraisal technique as well as the impact the understudied firm organizational characteristics had on the usage of modern investment appraisal techniques.

4.1 Response Rate

The study distributed 60 questionnaires to some selected top management employees of Goil Ghana Limited. From the questionnaires distributed, a total of 51 completed questionnaires were received. Out of these received questionnaires, all the 51 questionnaires were usable for analysis, giving an effective response rate of 85.0%. Per the views of Baruch and Holtom (2008) the study's response rate of over 80% is deemed to be very sufficient since in the area of managerial and behavioural sciences the average response rate for a study within these domains ought to be around 50% or more.

4.2 Demographic Profile of Sample

Table 4.1 shows the demographic profile of the respondents (age, gender, educational qualification, position held and the number of years worked in the organization).

Table 4.1: Demographic Profile of the Respondents

Demographic variable	Category	Frequency	Percentage
Gender	Male	27	52.9%
	Female	24	47.1%
Age	21-30 yrs	32	62.7%
	31-40 yrs	11	21.6%
	41-50 yrs	2	3.9%
	Above 50 yrs	6	11.8%
Education	Diploma/HND	18	35.3%
	Bachelor's degree	26	51.0%
	Master's degree	7	13.7%
Position occupied	Managerial position	45	88.2%
	Non-managerial position	6	11.8%
Number of years worked in the company	Up to 1 yr	12	23.5%
	1-3 yrs	27	52.9%
	4-7 yrs	6	11.8%
	8-10 yrs	3	5.9%
	More than 10 yrs	3	5.9%

Source: Author's field survey, 2019.

The demographic profile of the respondents in Table 4.1 show that most of the surveyed respondents thus, 52.9% were males while the remaining thus, 47.1% were males. Also, with the respondents' ages, it became evident that more than half of the respondents ages thus, 84.3% were within the age brackets of 21-40 years. Also, on this same demographic profile, it was established that a small section of the respondent ages thus, 3.9% were within the age bracket of 41-50 years. Again, 11.8% of the respondents ages were above the 50 years category. However, with the respondents' level of education, it became evident that 35.3% had either diploma or HND as their highest level of education, 51.0%

had bachelor's degree as their highest level of academic qualification and finally 13.7% had master's degree as their level of academic qualification.

Again, with reference to the respondents' position occupied at the studied organization, results from Table 4.1 show that more than half of the respondents thus, 88.2% worked in managerial position whereas the remaining thus, 11.8% worked in non-managerial position. Again, with regards to the number of years the respondents had worked within the studied organization, it was evident that 23.5% of the respondents have being with the organization under a one year period, 52.9% have worked with the organization for the period of 1-3 years, 11.8% have worked with the organization for the period of 4-7 years and 5.9% have worked with the organization for either the period of 8-10 years or for more than 10 years. Evidently, results from the study suggest that most of the respondents occupied managerial position within the studied organization hence placed them in better position to provide valid responses on the kind of investment appraisal techniques or methods used within the organization.

4.2.1 Background Information of the Studied Organization

The demographic profile of the studied organization in terms of the number of people employed in the organization, number of years the organization has operated within the oil marketing industry, previous year's sales value and the entity CEO educational level of qualification have been presented in Table 4.2.

Table 4.2: Background Information of the Studied Organization

Business variable	Category	Frequency	Percent

Number of people employed in	1-50 workers	6	11.8
the organization	51-150 workers	40	78.4%
	151-300 workers	5	9.8%
Number of years in business	<1 yrs	5	9.8%
	1-10yrs	28	54.9%
	11-20 yrs	13	25.5%
	More than 20 yrs	5	9.8%
previous sale value	Less than 20million	18	35.3%
(in Millions of GH¢)	20-50million	23	45.1%
	50-100million	7	13.7%
	100-200million	3	5.9%
	Diploma	3	5.9%
CEO educational qualification	Bachelor's degree	25	49.0%
	Master's degree	23	45.1%

Source: Author's field survey, 2019.

With regards to the business profile of the studied organization, results from Table 4.2 show that 78.4% of the respondents held that the total number of people working in their organization fall within the category of 51-150 people. Likewise, on this same issue, 11.8% of the respondents held the organization workforce can be classified or group into the category of 1-50 workers whereas the rest thus, 9.8% of the respondents held that their organization workforce can be categorized into the group of 151-300 workers. Also, with regards to the figures that best described the organization sales values in the previous financial year, results from Table 4.2 show that 35.3% of the respondents were of the view that their organization previous sales value fall under the range of less than ¢20 million. Again, to 45.1% of the respondents their organization sales value for the previous stood

within the range of ¢20-50 million. However, only a handful of the respondents that is, 5.9% held the view that their organization sales value for the previous year fall within the ¢100-200 million mark.

Additionally, with reference to the academic qualification of their present CEO, results from the study show that 49.0% of the respondents held that their CEO holds bachelor's degree as his academic qualification whereas on this same issue 45.1% of the respondents were of the view that their current CEO has master's degree as his highest level of academic qualification. Finally, with reference to the number of years the studied organization has operated within the oil marketing industry, it was evident that more than half of the respondents that is, 54.9% held that their organization has being in the oil business between the period of 1-10 years. Equally, to 25.5% of the respondents, their organization has operated in the oil upstream for the period of 11-20 years now. However, it was only a small segment of the respondents who held that their organization has operated in the oil upstream for more than 20 years now.

4.3 Investment Appraisal Methods used at the Studied Organization in their investment decisions

Specifically, this study objective sought to identify the kind of investment appraisal methods the understudied organization used to assess or guide its investment decisions. Accordingly, the respondents were presented with an array of investment appraisal methods for them to indicate their level of agreement as to whether they are used within their organization. On this objective, the study employed a 4-point Likert scale (i.e. 1=not at all, 2= rarely, 3= to some extent and 4= always) to elicit respondents' responses as to how a given investment appraisal method was used within their organization. However, in

order to describe the respondents' ratings, a hypothetical mean of 3.5 was chosen as an indicative that a said appraisal method was always used to guide their firm investment decisions. Again, a mean value within the ranges of 2.5-3.0 suggests that an investment appraisal method usage was not very regular but rather used on some extent basis. Again, a mean value within the ranges of 1.5-2.0 suggests that a given investment appraisal method was rarely used at the studied organization. Finally, a mean value below 1.4 suggests that a given investment appraisal method was not at all used at the studied organization. Accordingly, the respondents rating as to how an identified investment appraisal method was used within the studied organization has been presented in Table 4.3.
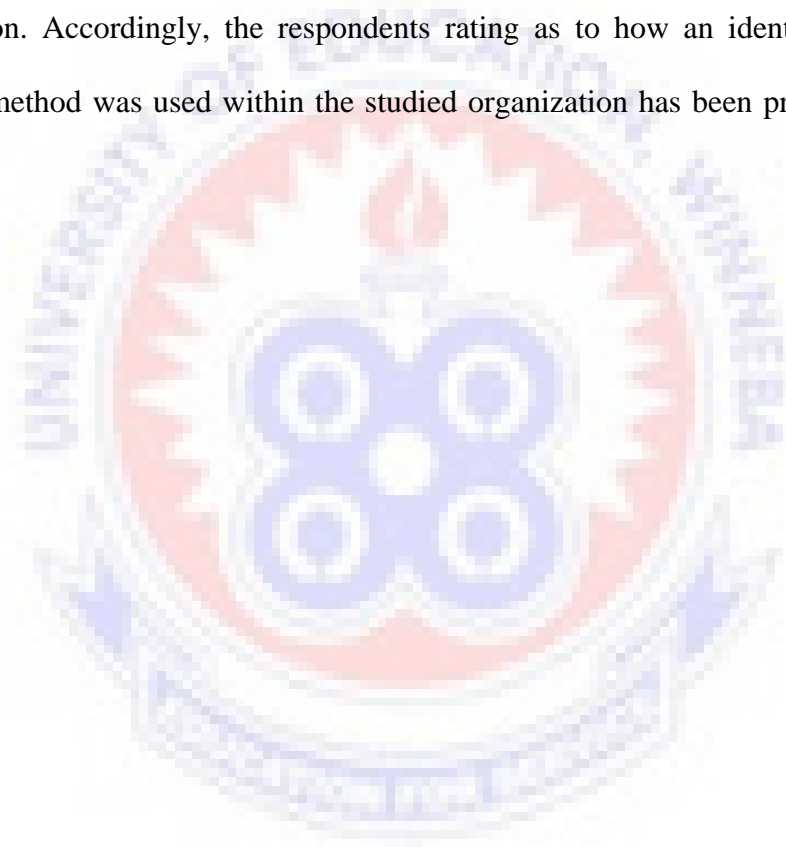
Table 4.3: Investment Appraisal Methods used at the Studied Organization

Items	Investment appraisal methods	Min	Max	Mean	Std. Deviation
Item 1	At this organization, Net Present Value (NPV) capital budgeting technique is used by both management and the financial department to assess an investment option viability before a final decision is eventually taken.	1	4	2.63	.999
Item 2	Internal Rate of Return (IRR) forms part of the capital budgeting tools used in my organization to evaluate an investment opportunity feasibility.	1	4	2.45	1.064
Item 3	Discounted payback period is highly employed during the assessment of an investment opportunity in this organization.	1	4	2.94	1.066
Item 4	At this organization, Profitability Index capital budgeting technique is used by both management and the financial department to assess an investment option viability.	1	4	3.52	.927
Item 5	Accounting Rate of Return (or Book Rate of Return on Assets) is one of the capital budgeting tools used by management to determine the feasibility of an investment option before a final decision is eventually made.	1	4	3.58	.891
Item 6	Real option is highly employed during the assessment of an investment opportunity in this organization.	2	4	3.25	.821

Source: Author's field survey, 2019.

On the first measuring item, the respondents were asked to indicate their level of agreement on whether at their organization, Net Present Value (NPV) capital budgeting technique was used by both management and the financial department to assess an investment option viability before a final decision was eventually taken. Evidently, results from Table 4.3

show that most of the respondents rating on this item fell within to some extent rating. This suggests that even though NPV was used to guide the organization investment decision yet its usage was not very frequent. It recorded a Mean value of 2.63 and SD of 0.999.

Also, as to whether Internal Rate of Return (IRR) formed part of the capital budgeting tools used within the studied organization when it comes to the assessment of an investment option feasibility, it became evident that most of the respondents rating on this item fell under the rarely rating. It had a Mean value of 2.45 and SD of 1.064. This suggests that at the understudied organization, IRR was seldomly used to guide the organization investment decision.

Moreover, with third item, it sought to explore from the respondents whether discounted payback period was highly employed during the assessment of an investment opportunity. Evidently, results from Table 4.3 show that most of the respondents rating on this item fell under some extent rating. This means that discounted payback method was used at the studied organization but not at all times. It recorded a Mean score of 2.94 and SD of 1.066. Again, on the fourth item, results from Table 4.3 show that most of the respondents held that profitability index capital budgeting technique was always used by both management and the financial department when assessing an investment option viability. Specifically, it had a Mean value of 3.52 and SD of 0.927. Last but not the least, as to whether accounting rate of return (or Book Rate of Return on Assets) is one of the capital budgeting tools used by management to determine the feasibility of an investment option, it became evident that the respondents rating on this item fell under the always rating. Meaning, accounting rate of return is one of the investment appraisal methods that was always used

in the studied organization when it comes to the assessment of an investment option viability. It had Mean score of 3.58 and SD of 0.891. Lastly, as to whether real option is highly employed during the assessment of an investment opportunity in the studied organization, it was evident that the respondents' level of agreement on this item fell within some extent rating. It had a Mean value of 3.25 and SD of 0.821.

Findings from the study suggest that the investment appraisal methods found to be of high usage within the studied organization were profitability index capital budgeting and accounting rate of return tools. However, with the other tools such as, Net Present Value (NPV), discounted payback period and real option, results from the study suggest that its usage was not very frequent but rather on when and when its usage becomes necessary. Again, on the other investment appraisal tools like Internal Rate of Return results from the study suggest that the studied organization seldomly employ it when it comes to the assessment of its investment opportunity.

Accordingly, findings from this study is consistent with the earlier works of Alkaraan and Northcott (2006), Truong et al. (2008) and that of Shinoda (2010) as their work identified accounting rate of return and profitability index as one of the most used capital budgeting tools among large scale enterprises particularly those operating in the oil and gas sector. Likewise, findings from this study affirm the views of Iturralde and Maseda (2004) and that of Sridharan and Schuele (2008) as their works identified real option as one of the investment appraisal methods that was seldomly used by organizational leaders in their investment decisions. Similarly, within this context it was evident that real option was employed occassionally by the studied firm in the assessment of its investment options.

However, the views espoused by Bennouna et al. (2010) and Viviers and Cohen (2011) that NPV tends to be one of the most widely used investment analysis tools among business leaders and managers were not confirmed in this study as results revealed suggest that NPV was not frequently used by the studied organization to guide its investment decision. Again, findings from this study could not corroborate the works of the International Federation of Accountants (2012) as their reports identifed NPV as one of the most prefered discounted cashflow methods among business leaders. Additionally, even though, Batra and Verma (2017) in their studies claimed that most older companies tended to favour payback method a lot in their investment decisions nonetheless, in this study same conclusion could not be made as payback method was found to seldomly used by the studied organization.

4.4 Descriptive Analysis of Factors that Influence Firms' Selection of Investment Appraisal Method

Generally, evidence from the literature suggests that a firm decision to select or use a particular investment appraisal method to guide its investment decision could be informed by several factors emanating from issues such as, the nature or type of investment activity to be taken, effort expectancy, availability of facilitating conditions as well as the existence of top management support. Specifically, this study objective employed a 5-point Likert scale (i.e. 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5= strongly agree) to elicit the respondents' responses as to whether these identified factors could influence their organization decision to use a particular investment appraisal method for their investment decision. However, in order to describe the respondents' ratings, a hypothetical mean of 3.5 was chosen as an indicative that respondents agreed that the said statements formed part of the influencing factors. Again, a mean value within the ranges of 2.5-3.0

suggests that the respondents were neutral in their rating on a given item. Finally, a mean value below 2.4 suggests that the respondents disagreed to a particular item. Accordingly, the descriptive results on how the respondents answered the various factors with regards to how it might shape or shaped their decision to use a particular investment appraisal method have been presented from Table 4.4-4.7.

4.4.1 Descriptive Analysis of Nature of Investment Activity

Respondents rating as to how the nature of an investment activity influenced their organization decision to select or use a particular investment appraisal method has been presented in Table 4.4.

Table 4.4: Respondents Rating on the Nature of Investment Activity

Items	Responses	Min	Max	Mean	Std. Deviation
Item 1	The decision to use a particular capital budgeting tool is shape by the nature of investment activity to be undertaken within a particular time period.	1	5	3.80	1.000
Item 2	The peculiarities of an investment option will inform management on the kind of capital budgeting tool to employ for that said investment.	1	5	4.37	.916
Item 3	The kind of investment opportunity been considered does not in any way determine the kind of capital budgeting tool to use.	2	5	4.33	.683

Source: Author's field survey, 2019.

The descriptive analysis of the nature of investment activity construct reveals that all the items under this construct recorded mean values above 3.7 score which hints that the respondents rated these items within the agreed score. Particularly, 'item 2' (*the*

peculiarities of an investment option will inform management on the kind of capital budgeting tool to employ for that said investment) was the measuring item which received the highest mean rating of 4.37 and SD of 0.916. This suggests that on this item, most of the respondents agreed that the peculiarities of an investment option did informed management on the kind or type of capital budgeting tool to employ for that said investment. Moreover, the item with the second highest mean rating went to 'item 3' *(The kind of investment opportunity been considered does not in any way determine the kind of capital budgeting tool to use)*. This item had a mean value of 4.33. Interestingly, even with the least rated item that is, 'item 1' (*The decision to use a particular capital budgeting tool is shape by the nature of investment activity to be undertaken within a particular time period)* results from Table 44 show that it recorded a mean value of 3.80 giving a clear indication that under this construct, most of the surveyed workers of the oil marketing company agreed that the nature of investment activity their organization is about to undertake did shape or influence the kind of investment appraisal method to use. Moreover, among all the three items, 'item 2' that is, the peculiarities of an investment option will inform management on the kind of capital budgeting tool to employ for that said investment was highly regarded by the respondents as the main factor under the nature of investment activity that did shaped their organization selection decision of an investment appraisal tool.

4.4.2 Descriptive Analysis of Effort Expectancy

Respondents rating as to how the effort expectancy of a particularly investment appraisal tool influenced or will influence their organization decision to use a particular investment appraisal tool in their investment decision has been presented in Table 4.5.

47

Table 4.5: Respondents Rating on Effort Expectancy

Items	Responses	Min	Max	Mean	Std. Deviation
Item 1	The easiness with which workers can work with a particular capital budgeting tool influences its application within this organization.	2	5	4.06	.925
Item 2	Management usually considers workers ability to use a particular capital budgeting tool before it is eventually roll out in this organization.	2	5	4.75	.560
Item 3	The less ambiguity of a capital budgeting tool is what my organization considers most when deciding to adopt or use it in its investment decision.	4	5	4.65	.483

Source: Author's field survey, 2019.

Specifically, with effort expectancy, it seeks to measure the degree of ease associated with the use of a particular investment appraisal method (Venkatesh, et al., 2003). That is, an organziaiton will be more willing to use a particular investment appraisal method for their investment decision when they perceive or believe that using a particular method or tool would be free of physical and mental effort (Moore & Benbasat, 1991). Evidently, the descriptive analysis of the effort expectancy construct suggests that all the items under this construct had their mean values above the 4.00 rating which hints that the respondents rated these items within the strongly agree and agree score.

Nevertheless, out of the three measuring items, 'item 2' (*Management usually considers workers ability to use a particular capital budgeting tool before it is eventually roll out in this organization*) was the item which recorded the highest mean score of 4.75. Again, the item with the second highest mean value went to 'item 3' *(The less ambiguity of a capital*

budgeting tool is what my organization considers most when deciding to adopt or use it in its investment decision). It recorded a mean value of 4.65 suggesting that the respondents were very emphatic in rating as their level of agreement fell within the strongly agree score. Moreover, even with the least rated item thus, 'item 1' (*The easiness with which workers can work with a particular capital budgeting tool influences its application within this organization)* results from Table 4.5 show the respondents rating on this item fell within the agreed score. It had a mean value of 4.06. Clearly, this goes to suggest that the perceived ease of use of a particular investment appraisal method influenced the studied organization decision to use that said investment tool to guide its investment decisions. Finally, among all the three items, 'item 2' thus, management usually considers workers ability to use a particular capital budgeting tool before it is eventually roll out in this organization was the item that was highly rated under this construct.

4.4.3 Descriptive Analysis of Facilitating Conditions

Respondents rating as to how the existence of facilitating conditions at workplace will influence their organization decision to use a particular investment appraisal tool in their investment decision has been presented in Table 4.6.

Table 4.6: Respondents Rating on Facilitating Conditions

Items	Responses	Min	Max	Mean	Std. Deviation
Item 1	The availability of tools for the computation of the investment analysis will influence the said tool adoption in this organization.	4	5	4.59	.497
Item 2	The availability of resource persons to assist users will influence workers decision to adopt a particular capital budgeting tool during investment assessment.	2	5	4.37	.774
Item 3	Providing workers with the right statistical tools tend to shape workers willingness to use a given capital budgeting tools when assessing the viability of an investment option.	1	5	4.55	.879

Source: Author's field survey, 2019.

Facilitating factors measure the degree to which an individual believes that organizational and technical infrastructure exists to support the use of a particular investment appraisal method. Hence, this construct sought to establish how the facilitating conditions provided at the studied organization may influence workers' decision to use a particular investment appraisal tool in their investment decision. Moreover, results from the descriptive analysis of the facilitating conditions construct shows that all the items under this construct recorded mean values above the 4.3 score which means that most of the respondents rated these items between the agreed and strongly agreed score. Notably, 'item 1' (*the availability of tools for the computation of the investment analysis will influence the said tool adoption in this organization*) was the measuring item which received the highest rating with a mean score of 4.59.

However, even with the least rated item thus, 'item 2' (*the availability of resource persons to assist users will influence workers decision to adopt a particular capital budgeting tool during investment assessment)* results from Table 4.6 show the respondents rating on this item fell within the agreed score. It had a mean value of 4.06. Clearly, this indicates that having in place facilitating conditions in the forms of availability of resource persons, tools for the computation and the existence of right statistical tool did informed the studied organization decision to use a particular investment appraisal tool in their investment decisions. Lastly, among all the three items, 'item 1' that is, the availability of tools for the computation of the investment analysis was the item that received the highest rating under the facilitating condition items.

4.4.4 Descriptive Analysis of Top Management Support

Respondents rating as to how the existence of top management at workplace will influence their organization decision to use a particular investment appraisal tool in their investment decision has been presented in Table 4.7.

Table 4.7: Respondents Rating on Top Management Support

Items	Responses	Min	Max	Mean	Std. Deviation
Item 1	The willingness of the organization management to offer the needed support services tend to shape workers readiness to use a particular capital budgeting tool to appraise an investment option.	1	5	4.22	1.154
Item 2	Management readiness to provide the required technical infrastructure is what workers usually look out for when deciding to apply a particular capital budgeting tool or not.	1	5	3.98	1.086
Item 3	Management willingness to give workers the avenue to try out new tools will influence workers decision to try out new capital budgeting tools when assessing investment option.	1	5	3.67	1.178

Source: Author's field survey, 2019.

Top management support construct measures institutional support structures put in place by an organization top management to assist its employees to use a given investment appraisal method. Evidently, results from Table 4.7 suggests that all the items under the top management construct received mean values above the 3.6 rating suggesting that most of the respondents rated these items within the agreed score. Particularly, 'item 1' (*the willingness of the organization management to offer the needed support services tend to shape workers readiness to use a particular capital budgeting tool to appraise an investment option*) was the measuring item that recorded the highest mean rating of 4.22. This suggests that on this item most of the respondents agreed that the willingness of the organization management to offer the needed support services tend to shape workers readiness to use a particular capital budgeting tool to appraise an investment option.

Again, the second highly rated item went to 'item 2' thus, (*management readiness to provide the required technical infrastructure is what workers usually look out for when deciding to apply a particular capital budgeting tool or not*). It recorded a Mean value of 3.98 suggesting that most of the respondents rating on this item fell within the agreed score.

Moreover, even with the least rated item that is, 'item 3' (*management willingness to give workers the avenue to try out new tools will influence workers decision to try out new capital budgeting tools when assessing investment option)* results from Table 4.7 show the respondents rating on this item fell within the agreed score. It had a mean value of 3.67. Evidently, results on these items go to suggest that top management support which could take the form of management willingness to give workers the avenue to try out new tools and the willingness of the organization management to offer the needed support services could strongly influence the studied organization workforce decision to use or apply a particular investment appraisal method in their investment decision. Finally, among all the three items, 'item 1' that is, the willingness of the organization management to offer the needed support services received the highest rating under the facilitating condition items.

4.4.5 Regression Analysis of the Factors that Influence Firms' Selection of Investment Appraisal Method

Specifically, multiple regression analysis thus, enter method was the statistical analysis used to identify the which of the identified factors thus, nature of investment activity, effort expectancy, facilitating conditions and top management had or will have the most significant impact in predicting the studied firm decision to use or adopt a particular investment appraisal method for its investment decisions. Accordingly, the regression

analysis in Table 4.8 provides the result of constant, Beta coefficients of the predictive variables, standard error values, t-value and the significant values (p-values) of the independent variables.

Table 4.8: Multiple-Regression Analysis of the Factors that Influence Firms' Selection of Investment Appraisal Method

Predictor Variables	Beta- estimate coefficient	Standard error	t-value	p-value	Remarks
(Constant)	8.909	11.349	.785	.000	S
Nat.invest.act	.310	.466	.664	.000	S
Effort.exp	.359	.673	.533	.000	S
Facil.cond	.798	.767	1.040	.028	S
Top.mgt.supp	.434	.352	1.235	.007	S

a. Dependent Variable: Firms' Selection of Investment Appraisal Method, Note (S=Significant, NS=Not significant)

b. Predictors: (Constant), Nature of investment activity, Effort expectancy, Facilitating conditions, Top management support)

Correlation Coefficient of the model (R) = 0.859; R^2=0.738, Adjusted R Square = 0.727, F= 70.892, Overall Model Significance = 0.000 level

Source: Author's field survey, 2019.

The multiple regression results in Table 4.8 suggest that the studied organization decision to select or use a particular investment appraisal method for its investment decisions are shaped by factors such as; nature of the investment activity, effort expectancy, availability of facilitating conditions and top management support since *p<0.01*. Moreover, the correlation coefficient for the entire predictors' variable stood at *(R=0.859)* suggesting that there is strong positive relationship between the understudied firm selection decision

and the identified factors. Also, the Adjusted R square value of 0.727 implies that72.7% of the variability in the dependent variable could be predicted by the independent variables. Evidently, the Adjusted R square value of 0.727 shows that the fitted model is a good model.

The beta value indicates the amount of change in the dependent variable that could occur due to its recurring variations in an independent variable. Results from Table 4.8 suggest that nature of investment activity had a significant impact on the studied firm decision to use a particular investment tool for its investment decision since p<0.01. This suggests that witnessing a 1% change in the kind of business or investment the understudied firm is to undertake will result to an increase in the firm decision to use a particular investment tool or approach by a percentage point of 0.310. This finding suggests that the alternative hypothesis which suggested that the nature of investment a firm is to undertake will have a significant impact on the kind of investment tool to be uses is confirmed while the null hypothesis is refuted in this context.

Again, factors such as effort expectancy, facilitating conditions and top management support all recorded a significant positive impact on the studied firm decision to use a particular investment tool for its investment decision since the p<0.05. This suggests that an increase in effort expectancy, facilitating conditions and top management support will result in a concurrent increase in the studied firm decision to use a particular investment tool to guide its investment decisions. Again, these findings affirmed the alternative hypothesis that suggested a significant relationship will be established between effort expectancy, facilitating conditions and top management support and firm's decision to use a particular investment tool to guide its investment decision.

55

On this score, findings from this study affirm the earlier works of Andor et al. (2011) and that of Brounen et al. (2004) as their study results observed that the nature of investment activity a firm seeks to undertake is a key factor that shape its decision to use a particular investment appraisal technique or not. Accordingly, in their study firms that was found to invest huge sum of its capital in a particular project were more likely to use tools such as NPV and IRR.

Again, findings from this study concur with the study results of Hasan (2013) as the author's work reported a significant relationship between nature of investment activity to be undertaken and the kind of investment technique to use or adopt. Conversely, findings from this study could not corroborate the findings of Wnuk-Pel (2014) as the author's work revealed that the nature of a firm's investment activity had no influence on the type of investment technique that a firm employs for its investment analysis.

Nonetheless, results from this study align with that of Horn et al. (2015) as in their work it was established that issues such as lack of familiarity with real option concepts and the complexity of real options was the key issues that influenced businesses decision not to employ it in their investment decisions. Again, results from this study is comparable to that of Bennouna et al. (2010) and Block (2007) as their work observed a significant relationship between effort expectancy and firm decision to use a particular investment appraisal tool. This significant relationship obtained in this study and that of others comes as not very surprisingly since as vividly put up by Batra and Verma (2017) the high level of involvedness and exertion associated with some investment appraisal methods limit its application among most businesses and financial managers.

Finally, findings from this study is in tandem with the works of Obi and Adeyemo (2014) and that of de Andrés et al. (2015) as their work reported a significant relationship between the existence of facilitating conditions and top management support and firm decision to use or apply a particular investment option to guide its investment decision.

4.5 Degree of Assocation between Firm Size, Age and CEO education and Usage of Modern Investment Appraisal Techniques

Specifically, this study objective sought to explore the extent of relationship that existed between firm specific characteristics such as, firm size (i.e. sales value), age and CEO educational qualification and their decision to use a modern investment appraisal method or technique. However, for the study to able to assess this relationship effectively, it first sought to establish from the respondents as to whether their organization used modern investment appraisal methods to guide its investment decisions.

4.5.1 Respondents Responses as to whether their Organization Uses Modern Investment Appraisal Methods

As such, respondents rating as to whether their organization used modern investment appraisal methods have been presented in Figure 4.1.
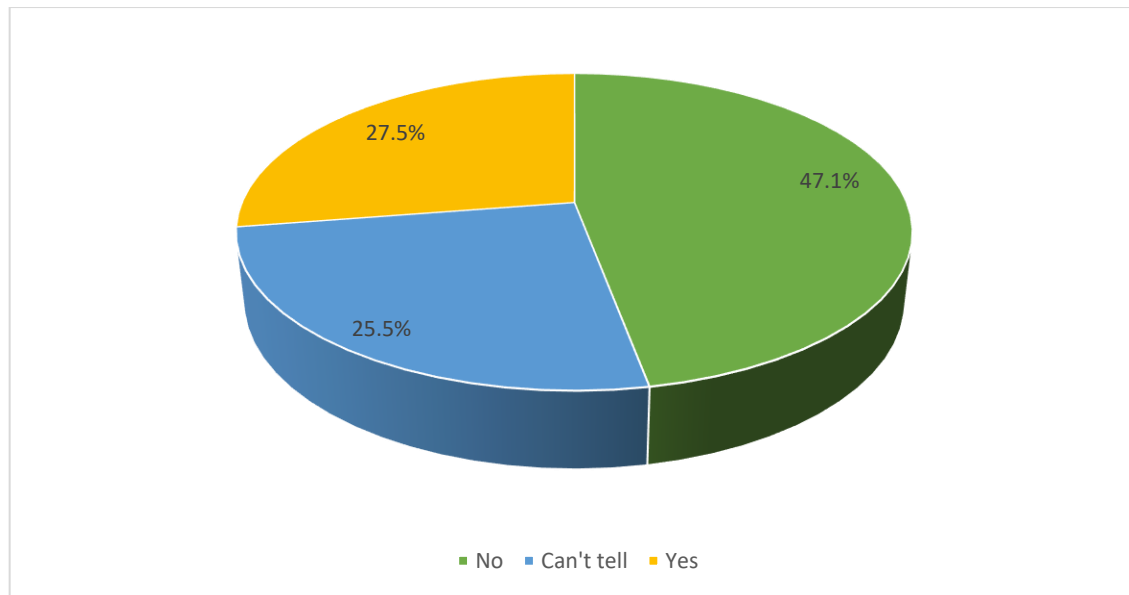
Source: Author's field survey, 2019.

Figure 4.1: *Respondents Responses as to whether their organization uses modern*

investment appraisal method

Results from Figure 4.1 show that only a small section of the respondents thus, 14(27.5%) responded in the affirmative when asked whether their organization uses modern investment appraisal methods. In contrast, nearly half of the respondents that is, 24(47.1%) responded in the reverse as to them they said their organization did not employ modern investment appraisal methods. Surprisingly, 13(25.5%) of the respondents remain undecided as they could neither tell whether their organization uses modern investment appraisal method or not. Evidently, findings from the study suggest that a large chunk of the respondents held that the understudied firm did not use modern investment appraisal methods.

4.5.2 Respondents Responses on the Kind of Modern Investment Appraisal Method Used at their Organization

After, identifying from 14(27.5%) of the respondents that organization uses modern investment appraisal methods to guide its investment decisions, the next question sought to explore from this segment of the respondents as to the kinds of modern investment appraisal method used within their organization. Accordingly, respondents' responses as to the kinds of modern investment appraisal methods used at their organization have been present in Table 4.9.

Table 4.9: Kind of Modern Investment Appraisal Method Used at the Studied Organization

Investment method	Frequency	Percent
Profitability index capital budgeting tool	7	50.0
Real option	4	25.6
MIRR	3	21.4
Total	**14**	**100.0**

Source: Author's field survey, 2019.

Results from Table 4.9 suggest that among all the identified methods, profitability index capital budgeting tool received the highest enumeration among the study respondents. On this investment appraisal method, 50% of the respondents identified it as one of the modern investment appraisal method used at their organization. Also, on real option investment appraisal method, 25.6% of the respondents identified it as one of the modern forms of investment tools used at their organization. However, among all the identified tools, MIRR received the lowest enumeration among the study respondents as only 21.4% of the respondents identified it as one of the modern forms of investment appraisal methods used at their organization.

59

4.5.3 Regression Analysis of Relationship between Firm Size, Age and CEO education and Usage of Modern Investment Appraisal Techniques

Multiple regression analysis thus, enter method was the statistical analysis used to establish the kind of relationship that existed between the firm characteristics and their decision to use or adopt modern investment appraisal methods for their investment decisions. Accordingly, the regression analysis in Table 4.10 provides the result of constant, Beta coefficients of the predictive variables, standard error values, t-value and the significant values (p-values) of the independent variables.

Table 4.10: Regression Analysis of Relationship between Firm Size, Age and CEO education and Usage of Modern Investment Appraisal Techniques

Predictor Variables	Beta- estimate coefficient	Standard error	t-value	p-value	Remarks
(Constant)	11.076	3.017	3.671	.001	S
size	.810	1.474	.550	.050	S
Sales volume	.525	1.005	.522	.001	S
CEO level of education	.688	.1.095	.628	.030	S

a. Dependent Variable: Firms' Selection of modern Investment Appraisal Method, Note (S=Significant, NS=Not significant)

b. Predictors: (Constant), firm size (number of employees), sales volume (GH¢ million), CEO level of academic qualification)

Correlation Coefficient of the model (R) = 0.620; R^2=0.394, Adjusted R Square = 0.374, F= 63.794, Overall Model Significance = 0.000 level

Source: Author's field survey, 2019.

The regression results in Table 4.10 suggest that the studied organization characteristics measured by their size, sales volume and CEO educational qualification had a significant relationship on the studied organization decision to employ modern investment appraisal methods for their investment decisions since *p<0.01*. Moreover, the correlation coefficient for the entire predictors' variable stood at *(R=0.620)* suggesting that there is strong positive relationship between the understudied firm characteristics and their decision to select modern investment appraisal methods. Again, the Adjusted R square value of 0.374 implies that only 37.4% of the variability in the dependent variable could be predicted by the independent variables.

Also, the beta value indicates the amount of change in the dependent variable that could occur due to its recurring variations in an independent variable. Results from Table 4.10 suggest that a firm size had a significant impact on the studied organization decision to adopt a modern investment appraisal method for their investment decision since $p<0.01$. This suggests that witnessing an increase in firm size could consequentially result in an increase in the studied firm decision to use modern investment appraisal tool. This finding suggests that the alternative hypothesis which suggested that a firm size will have a significant impact on the studied organization decision to use a modern investment appraisal method is accepted whereas the null hypothesis is refuted in this context.

Again, factors such as sales value and CEO level of education all recorded a significant positive impact on the studied firm decision to use a modern investment tool for its investment decision since the $p<0.05$. This suggests that an increase in the studied firm sales value and CEO education will result in an increase in firm decision to use modern investment appraisal tools. Accordingly, these findings affirmed the alternative hypothesis

that suggested that a firm sale value and CEO education will have a significant impact on firm decision to use modern investment appraisal tool during the assessment of its investment options.

On this score, findings from this study is in tandem with the works of Maquieira et al. (2012) as their work reported a significant relationship between a firm's size and its intention to use sophisticated methodologies for its investment assessment. Likewise, findings from this study is comparable to the works of Andor et al. (2011) and that of Brounen et al. (2004), as their work revealed that a firm size influence tends to influence that said firm decision to use modern investment appraisal methods. Again, findings from this study corroborate the results of Hermes et al. (2007) and that of de Andrés et al. (2015) as in their respective works it was evident that managers characteristics such as his level of education had a greater effect in influencing its firm decision to use or adopt sophiscated investment appraisal methods. Similarly, findings from this study confirm the works of Hermes et al. (2007) and that of Chazi et al. (2010) as their work reported a significant relationship between CEO level of education and their firm decision to employ modern investment appraisal methods to assess their organizaiton investment decision.

Conversely, findings from this study is inconsistent with the works of Batra and Verma (2017) as their work reported an insignificant relationship between a firm's CEO academic qualification and their firm decision to select or employ modern investment appraisal methods.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter presents the summary of the study as guided by its research questions, objectives and conclusions reached based on the findings of the study. Also, recommendations for additional research studies are equally presented in this chapter.

5.2 Summary of the Findings

The main problem of the study was to assess the investment appraisal techniques that underlie Ghana Oil Company investment decisions. The study employed the agency theory of Jensen and Meckling (1976) as its theoretical framework for the research. Moreover, the target population for the study constituted of employees of Goil Ghana who occupied top management positions. Accordingly, 60 employees within this category formed the study population size.

Specifically, with the first study objective, it sought to identify the investment appraisal methods used by Goil Ghana in their investment decisions. On this objective, findings from the study revealed that the investment appraisal methods found to be of high usage within the studied organization were profitability index capital budgeting and accounting rate of return tools. However, with the other tools such as, Net Present Value (NPV), discounted payback period and real option, findings from the study suggest that its usage was not very frequent but rather on when and when its usage becomes necessary. Again, with other investment appraisal tools like Internal Rate of Return, findings from the study suggest that the studied organization seldomly employed it when it comes to the assessment of its investment opportunity.

However, with the second research objective, it sought to identify the main factors that may influence Goil Ghana management in the selection of a particular investment appraisal technique. On this objective, results from the study revealed that the studied organization decision to select or use a particular investment appraisal method for its investment decisions are shaped by factors such as; nature of the investment activity, effort expectancy, availability of facilitating conditions and top management support since *p<0.01*. More so, it was evident that the nature of investment activity the studied firm engages in had a significant impact on its decision to use a particular investment tool for its investment decision since $p<0.01$. Again, factors such as effort expectancy, facilitating conditions and top management support all recorded a significant positive impact on Goil Ghana decision to use a particular investment tool for its investment decision since the $p<0.05$.

Lastly, the third research objective sought to investigate the degree of association that existed between Goil Ghana organizational characteristics (i.e. firm size, CEO education and age of the company) and their usage of modern investment appraisal techniques. On this objective, it was established that firm characteristics measured by firm size (i.e. number of employees employed), sales volume and CEO educational qualification had a significant relationship on Goil Ghana decision to employ modern investment appraisal methods for its investment decisions since *p<0.01*. Moreover, the correlation coefficient for the entire predictors' variable stood at *(R=0.620)* suggesting that there is strong positive relationship between the understudied firm characteristics and their decision to select modern investment appraisal methods.

64

Again, results from the study suggest that a firm size had a significant impact on their decision to adopt a modern investment appraisal method for their investment decision since $p<0.01$. Lastly, factors such as sales volume and CEO level of education all recorded a significant positive impact on the studied firm decision to use a modern investment tool for its investment decision since the $p<0.05$.

5.3 Conclusions of Main Findings

Findings from the study suggest that the commonest investment appraisal method found to be used frequently in the literature were sparingly used by the studied organization. For instance, investment appraisal tools such as, Net Present Value (NPV), discounted payback period and real option were not frequently used by the studied organization. This goes to suggest that the studied organization used fewer investment appraisal tools such as, profitability index capital budgeting and accounting rate of return to assess its investment options. Again, findings from the study suggest that the studied organization did not used some of the modern investment appraisal methods such simulation analysis, real options and MIRR to guide its investment decisions.

Lastly, findings from the study suggest that the studied organization to adopt more or additional forms of investment options to guide its investment decisions will be informed by factors such as, nature of investment activity to be undertaken, effort expectancy, facilitating conditions and top management.

5.4 Recommendation

Firstly, it became evident that to a large extent Goil Ghana Company Limited did not extensively employed most of the available investment appraisal methods to guide its investment decisions. Accordingly, it is recommended to the management of Goil Ghana as a matter of urgency to adopt more of existing investment appraisal methods into its investment decisions since every tool has its own strength and weaknesses as such, employing varied forms of investment appraisal tools will enable the organization achieve optimal results from its investment outcomes.

Again, it was evident that having in place facilitating conditions in the forms of providing resources persons to guide management, making available the necessary tools for the computation and providing management with the right statistical tool will influence their decision to employ varied forms of investment appraisal methods to guide their investment decision. Accordingly, it is recommended to the top management of Goil to make these facilitating conditions available at their workplace since the existence of these factors will inform its workforce decision to employ varied forms of investment appraisal tools.

Finally, it was revealed that firm characteristics such as CEO level of education tends to influence an organization decision to adopt or employ modern or sophisticated forms of investment appraisal methods into its organization. Accordingly, it is recommended to Goil Ghana before the appointment of any CEO or any top management position they should first seek to look out of the personal profile of the candidate particularly his or her level of academic qualification and experiences since these personal factors influence tend to influence their choices with regards to the kind of investment appraisal methods to adopt or use within the organization.

5.5 Suggestions for Further Research

Specifically, this study confined itself to only one oil marketing company thus, Goil Ghana Company Limited. Accordingly, a comparative study should be carried out to compare whether the findings also apply to other oil marketing companies outside the Kumasi metropolis in order to validate whether the findings can be generalized to all oil marketing firms operating in Ghana.

REFERENCES

Alkaraan, F., & Northcott, D. (2006). Strategic capital investment decision-making: A role for emergent analysis tools? A study of practice in large UK manufacturing companies. *The British Accounting Review, 38*, 149-173.

Anand, M. (2002). Corporate finance practices in India: A survey. *Vikalpa, 27(4)*, 29–56.

Andor, G., Mohanty, S. & Toth, T. (2011). Capital Budgeting Practices: A Survey of CEEan Firms. Word Bank, 1, 1-45.

Arnold, G. (2008). *Corporate financial management (4th ed).* London: Prentice Hall.

Arnold, G., & Hatzopoulos, P. D. (2000). The theory-practice gap in capital budgeting: evidence from United Kingdom. *Journal of Business Finance and Accounting, 27(5)*, 603–626.

Babatunde, S. (2016). Linear Programming and Investment Appraisal: A Review of Literature. *American Journal of Management Science and Engineering, 1(2) doi: 10.11648/j.ajmse.20160102.14*, 61-66.

Baker, H., Dutta, S., & Saadi, S. (2011). Corporate finance practices in Canada: where do we stand? . *Multinatl. Finance J., 15 (3/4)*, 157-192.

Banerjee, S. (2015). Contravention Between NPV & IRR Due to Timing of Cash Flows: A Case of Capital Budgeting Decision of an Oil Refinery Company. *American Journal of Theoretical and Applied Business, 1(2) doi: 10.11648/j.ajtab.20150102.13*, 48-52.

Bas, E., & Kahraman, C. (2009). Fuzzy capital rationing model. *J. Comput. Appl. Math., 224*, 628–645.

Batra, R., & Verma, S. (2017). Capital budgeting practices in Indian companies. *IIMB Management Review, 29* , 29–44.

Baruch, Y. & Holtom, B.C. (2008). Human Relations, 61(8): 1139–1160 DOI: 10.1177/0018726708094863

Baumol, W., & Quandt, R. (1965). Investment and discount rates under capital rationing- a programming approach. *Econ. J., 298*, 317–329.

Bennouna, K., Meredith, G. G., & Marchant, T. (2010). Improved capital budgeting decision making: evidence from Canada. *Management Decision, 48, http://dx.doi.org/10.1108/00251741011022590* , 225–247.

Berkovitch, E., & Israel, R. (2004). Why the NPV criterion does not maximize NPV. *The Review of Financial Studies, 17 (1)*, 239–255.

Bernhard, R. (1969). Mathematical programming models for capital budgeting. *J. Finan. Quant. Anal., 4*, 111–158.

Block, S. (2007). "Are "Real Options" Actually Used in the Real World?" . *The Engineering Economist, 52(3)*, 255-267.

Braimah, N. (2017). *Identification of Some Critical Parameters for Effective Supply Chain Management within the Oil Sector: A Study on Some Oil Marketing Companies within the Kumasi Metropolis, Unpublished Thesis.* Kumasi: Department Of Information and Decision Sciences, KNUST.

Brealey, R., Myers, S., & Allen, F. (2010). *Principios de FinanzasCorporativas.* México: McGraw-Hill.

Brigham, E. F., & Daves, P. R. (2010). *Intermediate financial management (10th ed)* . New York: Cengage.

Brigham, E., & Houston, J. (2002). *Fundamentals of Financial Management (concise third ed.)* . New York: Harcourt.

Brounen, D., de Jong, A., & Koedijk, K. (2004). Corporate finance in Europe: confronting theory with practice. *Financ. Manage. 33(4)*, 71-101.

Bryman, A. (2012). *Social Research Method.* New York: Oxford University Press Inc.

Bryman, A. (2012). *Social Research Method. .* New York: Oxford University Press Inc.,.

Bryman, A., & Bell, E. (2007). *Business Research Methods (Second edition).* New York: Oxford University Press.

Carlsson, C., Fullér, R., Heikkilä, M., & Majlender, P. (2007). A fuzzy approach to R & D project portfolio selection. *Internat. J. Approx. Reason., 44* , 93–105.

Carmona, S., Iyer, G., & Reckers, P. M. (2010). The impact of strategy communications, incentives and national culture on balanced scorecard implementation. *Advances in Accounting, 27, http://dx.doi.org/10.1016/j.adiac.2011.01.004* , 62–74.

Chadwell-Hatfield, P., Goitein, B., Horvath, P., & Webster, A. (2011). Financial criteria, capital budgeting techniques, and risk analysis of manufacturing firms. *Journal of Applied Business Research (JABR), 13(1)*, 95–104.

Chan, H., & Haddad, K. S. (2011). *Capital Budgeting Practices of Chinese Firms.*

Chazi, A. & Terra, P.R.S. & Zanella, F.C. (2010). Theory versus practice: perspectives of Middle Eastern financial managers. Eur. Bus. Rev.22 (2), 195---221.

Churchill, G. A., & Iacobucci, D. (2002). *Marketing research: Methodological foundations (8th ed.).* Mason, Ohio: South-Western: Thomson Learning.

de Andrés, P. d., & Martín, P. (2015). Capital budgeting practices in Spain. *BRQ Business Research Quarterly, 18*, 37-56.

de Andrés, P., de Fuente, G., & Martín, P. (2015). Capital budgeting practices in Spain. *BRQ Business Research Quarterly, 18*, 37-56.

de Souza, P., & Lunkes, R. (2016). Capital budgeting practices by large Brazilian companies. *Contaduría y Administración, 61*, 514–534.

Finance and Management Faculty Chartered Accountants'. (2009). *Investment Appraisal, December 2009 Special Report.* Moorgate Place: www.icaew.com/fmfac.

Gitman, L. J. (2009). *Principles of managerial finance (12th ed).* New York: Pearson edition.

Graham, J., & Harvey, C. (2001). The theory and practice of corporate finance: evidence from the field. *J. Financ. Econ., 60 (2/3)*, 187-243.

Gutjahr, J., Katzensteiner, S., Reiter, P., Stummer, C., & Denk, M. (2010). Multi-objective decision analysis for competence-oriented project portfolio selection . *European J. Oper. Res., 205*, 670–679.

Hall, J., & Millard, S. (2010). Capital budgeting practices used by selected listed South African firms. *South African Journal of Economic and Management Sciences, 13*, 85–97.

Harris, M., & Raviv, A. (1991). The theory of capital structure. *J. Finance, 46(1)*, 297-355.

Hasan, M. (2013). Capital Budgeting Techniques Used by Small Manufacturing Companies. *Journal of Service Science and Management, 6, http://dx.doi.org/10.4236/jssm.2013.61005*, 38-45.

Hermes, N., Smid, P., & Yao, L. (2007). Capital budgeting practices: a comparative study of the Netherlands and China. *International Business Review, 16, http://dx.doi.org/10.1016/j.ibusrev.2007.05.002*, 630–654.

Ho, S. P., & Liu, L. Y. (2003). How to evaluate and invest in emerging A/E/C technologies under uncertainty. *Journal of engineering and management, 129 (1)* , 16-24.

Holmen, M., & Pramborg, B. (2009). Capital budgeting and political risk: empirical evidence. *J. Int. Financ. Manage. Account., 20(2)*, 105-134.

Hoque, Z. (2001). *Strategic management accounting: concepts, procedures and issues.* Chicago: Chandos Publishing.

Horn, A., Kjærland, F., Molnár, P., & Steen, B. W. (2015). The use of real options theory in Scandinavia's largest companies. *International Review of Financial Analysis, 1(2)*, 161-172.

Huang, X. (2008). Mean-variance model for fuzzy capital budgeting. *Comput. Ind. Eng., 55*, 34–47.

International Federation of Accountants. (2012). *International Good Practice Guidance: Project and Investment Appraisal for Sustainable Value Creation.* New York, N.Y.: IFAC.

Iturralde, T., & Maseda, A. (2004). Tama˜no de la Empresa y GestiónFinanciera. *Rev. Eur. Dir. Econ. Empresa, 13 (3)*, 183-198.

Jensen, M. (1986). Agency costs of free cash flow, corporate finance, and takeovers . *Am. Econ. Rev., 76 (2)*, 323-329.

Jensen, M. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *J. Finance, 48(3)*, 831-880.

Jensen, M., & Meckling, W. (1976). Theory of the firm: managerial behaviour, agency cost and ownership structure. *Journal of financial Economics, 3(4)*, 305-360.

Kasozi, J. (2012). Evaluating the Investment Decision-Making Process for Business Expansion into Africa: A Case Study. *Risk governance & control: financial markets & institutions, 2(4)* , 7-16.

Kumar, R. (2011). *Research Methodology: A step by step guide for beginners.* Los Angelos: SAGE Publications Ltd.

Leon, F., Isa, M., & Kester, G. (2008). Capital budgeting practices of listed Indonesian companies. *Asian J. Bus. Account., 1(2)*, 175-192.

Marino, A., & Matusaka, J. (2005). Decision processes agency problems and information: an economic analysis of capital budgeting procedures. *The Review of Financial Studies, 18*, 301–325.

Mathews, S., Datar, V., & Johnson, B. (2007). A practical method for valuing real options: the Boeing approach. *J. Appl. Corp. Finance,19 (2)*, 95-104.

Matsho, J. (2010). *The Retail Petrol Industry in South Africa, Unpublished MPhil Thesis.* Zululand: Department of Economics University of Zululand.

McConnell, J., & Servaes, H. (1995). Equity ownership and the two faces of debt. *J. Financ. Econ., 39 (1)*, 131-157.

McLaney, E. (2006). *Business Finance: Theory and Practice (6th Edition).* United Kingdom: Pearson Education.

Medaglia, A., Graves, S., & Ringuest, J. (2007). A multiobjective evolutionary approach for linearly constrained project selection under uncertainty. *European J. Oper. Res., 179* , 869–894.

Moore, G., & Benbasat, I. (1991). 'Development of an instrument to measure the perceptions of adopting an information technology innovation',. *Information Systems Research*, 2(3), 192-222.

Mushaho, K., Mbabazize, M., & Shukla, J. (2015). The Effect of Capital Budgeting Investment Decision on Organizational Performance in Rwanda. A Casestudy Of Bahresa Grain Milling Rwanda Ltd. *International Journal of Small Business and Entrepreneurship Research, 3(5)*, 100-132.

Obi, A., & Adeyemo, S. (2014). Evaluation of Capital Budgeting and Investment Decisions in Nigeria. *Open Access Library Journal, 1(e141) http://dx.doi.org/10.4236/oalib.1101141*, 1-20.

Olawale, F., Olumuyiwa, O., & George, H. (2010). An investigation into the impact of investment appraisal techniques on the profitability of small manufacturing firms in the Nelson Mandela Bay metropolitan area, South Africa. *African Journal of Business Management, 4*, 12-19.

Padberg, M., & Wilczak, M. (1999). Optimal project selection when borrowing and lending rates differ. *Math. Comput. Modelling, 29*, 63–78.

Rayo, S., Cortés, A., & Sáez, J. (2007). Valoración empírica de lasOpciones de Crecimiento. El caso de la Gran Empresa Espa˜nola. *Rev. Eur. Dir. Econ. Empresa, 16 (2)*, 147-166.

Ross, S. A., Westerfield, R. W., & Jaffe, J. (2005). *Corporate Finance (International Edition)* . New York:N.Y.: McGraw Hill.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students (5th ed.)* . Harlow: Pearson Education Limited.

Shank, J. (1996). Analysing technology investments-from NPV to strategic cost management (SCM). *Management Accounting Research, 7(2)*, 185–197.

Shinoda, T. (2010). Capital Budgeting Management Practices in Japan: A Focus on the Use of Capital Budgeting Methods. *Econ. J. of Hokkaido University, 39* , 39 - 50.

Singh, S., Jain, P. K., & Yadav, S. S. (2012). Capital budgeting decisions: Evidence from India. *Journal of Advances in Management Research, 9(1)*, 96–112.

Sridharan, U., & Schuele, U. (2008). Budget size and risk perception in capital budgeting decisions of German managers. *Int. Rev. Bus.Res. Pap., 4 (3)*, 213-221.

Triantis, A. (2005). Realizing the potential of real options: does theory meet practice? . *J. Appl. Corp. Finance, 17(2)*, 8-16.

Truong, G., Partington, G., & Peat, M. (2008). Cost-of-capital estimation and capital-budgeting practice in Australia. *Aust. J.Manage., 33 (1)*, 95-122.

Tufuor, A. N., & Doku, J. (2013). Capital Budgeting Practices in Emerging Market Economies: Evidence from Listed Ghanaian Firms. *Research Journal of Finance and Accounting , 4(17)* , 26-35.

Tuomaala, M. (2007). *Conceptual approach to process integration efficiency, Doctoral Dissertation.* Helsinki : Helsinki University of Technology.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). 'User acceptance of information technology: toward a unified view'. *MIS Quarterly*, 27(3), 425-478.

Verma, S., Gupta, S., & Batra, R. (2009). A survey of capital budgeting practices in corporate India Vision. *The Journal of Business Perspective, 13(3)*, 1–17.

Viviers, S., & Cohen, H. (2011). Perspectives on capital budgeting in the South African motor manufacturing industry. *Meditari Accountancy Research, 19(½), http://dx.doi.org/10.1108/10222521111178646*, 75–93.

Weingartner, H. (1966). Criteria for programming investment project selection. *J. Ind. Econ., 11*, 65–76.

Wnuk-Pel, T. (2014). The practice and factors determining the selection of capital budgeting methods – evidence from the field. *Procedia - Social and Behavioral Sciences, 156*, 612 – 616.

Yin, R. (2009). *Case Study Research: Design and Methods (3rd edn). .* Thousand Oaks, CA: Sage.

Zhang, Q., Huang, X., & Tang, L. (2011). Optimal multinational capital budgeting under uncertainty . *Computers and Mathematics with Applications, 62*, 4557–4567.

Zubairi, H., & Amin, F. (2009). Capital Budgeting - Decision Making Practices in Pakistan. *http://ssrn.com/abstract=1308662*, 1-11.

APPENDIX

UNIVERSITY OF EDUCATION WINNEBA- KUMASI CAMPUS

Department of Accounting

Questionnaire for Top Management

Dear Sir/Madam,

This study seeks to identify the investment appraisal methods used by your organizations in its investment decisions. The results of the study would help your organization management to identify the various challenges associated with its investment appraisal

76

techniques and seeks out for ways to address same. Your responses, though voluntary, are greatly appreciated and would be treated with utmost confidentiality.

Thank you.

Instructions: Please tick [√] the response that best describe your view.

SECTION A: RESPONDENTS PROFILE

1. Age

   [ ] 21-30

   [ ] 31-40

   [ ] 41-50

   [ ] above 50

2. Gender

   [ ] Male

   [ ] Female

3. Educational background of respondent

   [ ] Diploma

   [ ] Degree

   [ ] Post-degree

   [ ] Doctorate

   [ ] Please others(s), specify……………………………………………………

4. What is your current working position at Goil Ghana Company Limited

   [ ] Managerial position

   [ ] Non-managerial position

5. How long have you been in this organization? (Please Tick any one)

   [ ] Up to 1 year

[   ] 1 to 3 years

[   ] 4 to 7 years

[   ] 8 to 10 years

[   ] More than 10 years

Organization Profile

6.   Number of people working in the company are within the range of:

[   ] 1 – 50

[   ] 51 – 150

[   ] 151 – 300

[   ] 300 – 500

[   ] Over 500

7.   What figure best describe your organization previous sale value (in Millions of

GH¢) is:

[   ] Less than 20 million

[   ] 20 – 50 million

[   ] 50 – 100 million

[   ] 100 – 200 million

[   ] 200 – 500 million

[   ] More than 500 million

8.   What academic/professional qualification does your organization Managing

Director/CEO holds?

[   ] Diploma

[   ] Degree

[   ] Post-degree

[   ] Doctorate

[   ] Please others(s), specify……………………………………………………

9. How long (years) has this firm operated in the oil marketing industry?

    [ ] Less than 1 year

    [ ] 1 to 10 years

    [ ] 11 to 20 years

    [ ] More than 20 years

Section B: Extent of Usage of the following Investment Appraisal Techniques within your Organization

Indicate the extent as to how these investment appraisal techniques are used by your institution to guide its investment decisions (Using the scale; Not at all, Rarely, to some extent, Always)

10. At this organization, Net Present Value (NPV) capital budgeting technique is used by both management and the financial department to assess an investment option viability before a final decision is eventually taken.

    I. Not at all [   ]

    II. Rarely [   ]

    III. To some extent [   ]

    IV. Always [   ]

11. Internal Rate of Return (IRR) forms part of the capital budgeting tools used in my organization to evaluate an investment opportunity feasibility.

    I. Not at all [   ]

    II. Rarely [   ]

    III. To some extent [   ]

    IV. Always [   ]

12. Discounted payback period is highly employed during the assessment of an investment opportunity in this organization.

    I. Not at all [   ]

    II. Rarely [   ]

    III. To some extent [   ]

    IV. Always [   ]

13.   At this organization, Profitability Index capital budgeting technique is used by both management and the financial department to assess an investment option viability.

14.   Accounting Rate of Return (or Book Rate of Return on Assets) is one of the capital budgeting tools used by management to determine the feasibility of an investment option before a final decision is eventually made.

I. Not at all [   ]

II. Rarely [   ]

III. To some extent [   ]

IV. Always [   ]

15.   Real option is highly employed during the assessment of an investment opportunity in this organization.

I. Not at all [   ]

II. Rarely [   ]

III. To some extent [   ]

IV. Always [   ]

Section C: Factors that Influence Firms' Selection of Investment Appraisal Method

Please indicate how you agree or disagree with the following statements about the factors that influence your organization decision to select a particular capital budgeting tool during the assessment of an investment option.

Use this scale: (**1 – Strongly Agree, 2 – Agree, 3 – Neutral, 4 – Disagree, 5 – Strongly Disagree**). Circle/Tick where is applicable to you.

	Nature of Investment Activity	**SA**	**A**	**N**	**D**	**SD**
16.	The decision to use a particular capital budgeting tool is shape by the nature of investment activity to be undertaken within a particular time period.	1	2	3	4	5
17.	The peculiarities of an investment option will inform management on the kind of capital budgeting tool to employ for that said investment.	1	2	3	4	5
18.	The kind of investment opportunity been considered does not in any way determine the kind of capital budgeting tool to use.	1	2	3	4	5
	Effort Expectancy	**SA**	**A**	**N**	**D**	**SD**
19.	The easiness with which workers can work with a particular capital budgeting tool influences its application within this organization.	1	2	3	4	5
20.	Management usually considers workers ability to use a particular capital budgeting tool before it is eventually roll out in this organization.	1	2	3	4	5
21.	The less ambiguity of a capital budgeting tool is what my organization considers most when deciding to adopt or use it in its investment decision.	1	2	3	4	5
	Facilitating Conditions	**SA**	**A**	**N**	**D**	**SD**
22.	The availability of tools for the computation of the investment analysis will influence the said tool adoption in this organization.	1	2	3	4	5
23.	The availability of resource persons to assist users will influence workers decision to adopt a particular capital budgeting tool during investment assessment.	1	2	3	4	5
24.	Providing workers with the right statistical tools tend to shape workers willingness to use a given capital budgeting tools when assessing the viability of an investment option.	1	2	3	4	5
	Top Management Support	**SA**	**A**	**N**	**D**	**SD**
25.	The willingness of the organization management to offer the needed support services tend to shape workers readiness to use a particular capital budgeting tool to appraise an investment option.	1	2	3	4	5
26.	Management readiness to provide the required technical infrastructure is what workers usually look out for when deciding to apply a particular capital budgeting tool or not.	1	2	3	4	5
27.	Management willingness to give workers the avenue to try out new tools will influence workers decision to try out new capital budgeting tools when assessing investment option.	1	2	3	4	5

Section D: Usage of Modern Investment Appraisal Tools

This section primarily seeks to identify whether your organization employ any modern forms of investment appraisal tools in its investment decision making process. Accordingly, with reference to your current experience at your organization kindly provide the responses that best reflect the current condition at your organization.

28. Does your organization use any of the modern forms of investment appraisal methods to guide its investment decisions?

    I. NO [   ]

    II. Can't tell [   ]

    III. Yes [   ]

29. If Yes list some of these modern forms of investment appraisal methods used within your organization.

    …………………………………………………………………………………

    …………………………………………………………………………………

    …………………………………………………………………………………

    …………………………………………………………………………………

    …………………………………………………………………………………

    …………………………………………………………………………………

    …………………………………………………………………………………

    …………………………………………………………………………………