

FINANCIAL PERFORMANCE IMPLICATIONS OF CAPITAL BUDGETING PRACTICES  
OF PRIVATE WASTE MANAGEMENT FIRMS IN GHANA. A CASE STUDY OF  
ZOOMLION GHANA LIMITED

KNUST  
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## DECLARATION

I hereby declare that this submission is my work towards the Masters of Science (Accounting and Finance) and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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## DEDICATION

I dedicate this work to my Children, Tutu Dadze Atta-Mensah and Adwoa Efrema Atta-Mensah.

# KNUST



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## ABSTRACT

This study examined the financial performance implications of capital budgeting practices of private waste management firms in Ghana with emphasis on Zoomlion Ghana limited. Specifically, the study sought to: find out if development projects correspond with profitability, check whether the project is subject to rigorous defined procedures and finally, to recognize the appropriate capital budgeting techniques and activities that could enhance the monetary progress of the waste management sector. The population for the study was 44 consisting of all the Regional Offices and head office of Zoomlion Ghana Ltd with particular reference to staff at the Finance and Account units. The study assumed a philosophy of positivism to assess the relationship of capital budgeting processes and monetary growth and employed survey design. The purposive sampling technique was used to select a sample size of 12. The main instrument used for the study was a questionnaire.

Results reveal that through capital budgeting, profits have gone up by 21% - 40%. This shows a positive correlation between capital budgeting and profitability. Thus capital budgeting practices plays critical roles in ensuring the profitability of the company. The company does not use just one valuation method but rather adopts multiple valuation methods in its capital budgeting decisions. The finance department was responsible for all capital projects as there was no dedicated capital budgeting department. It is recommended that management institute a dedicated capital budgeting department, engage the services of professionals and equip the department with modern technology and other tools in order to succeed.



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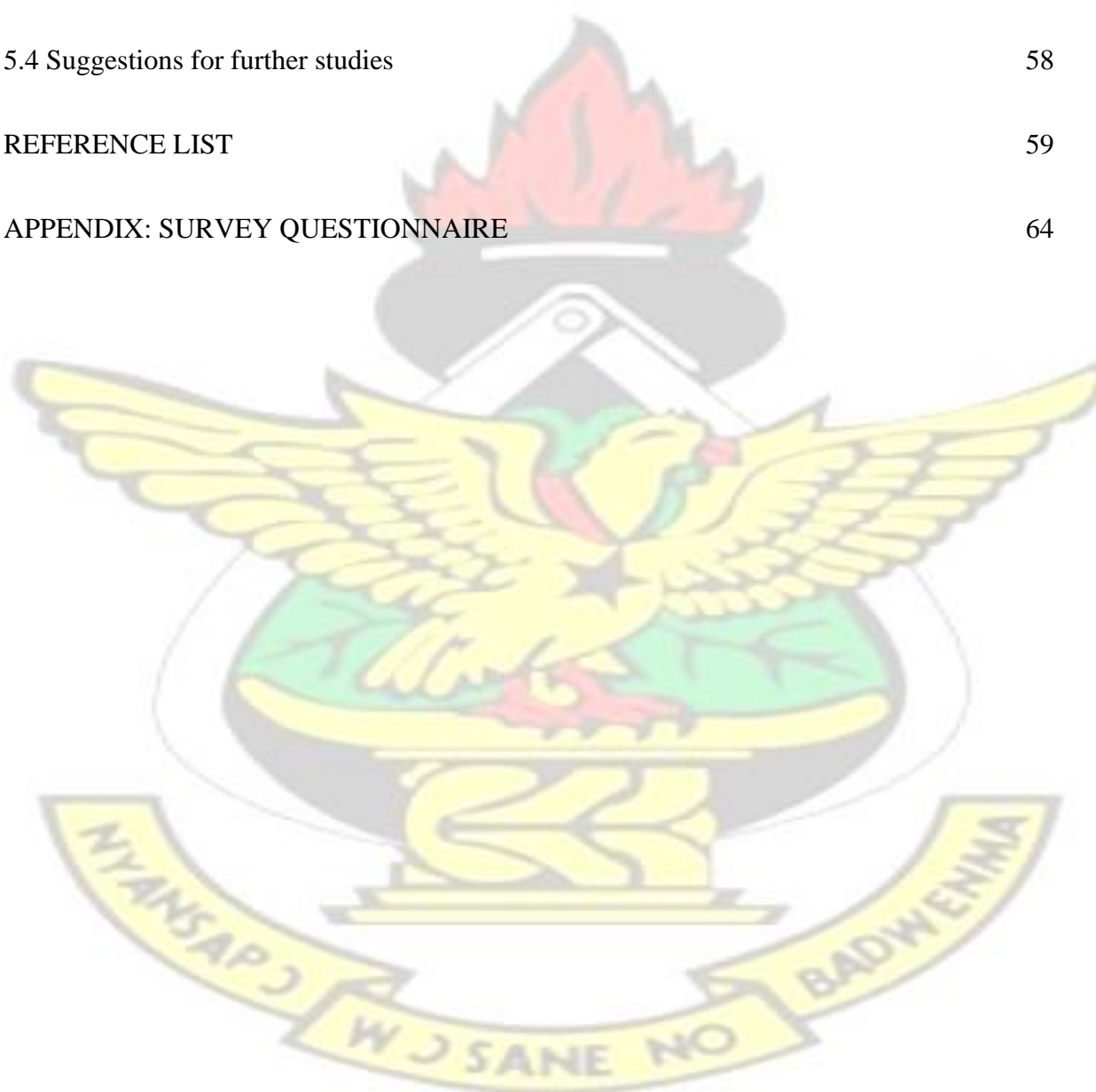
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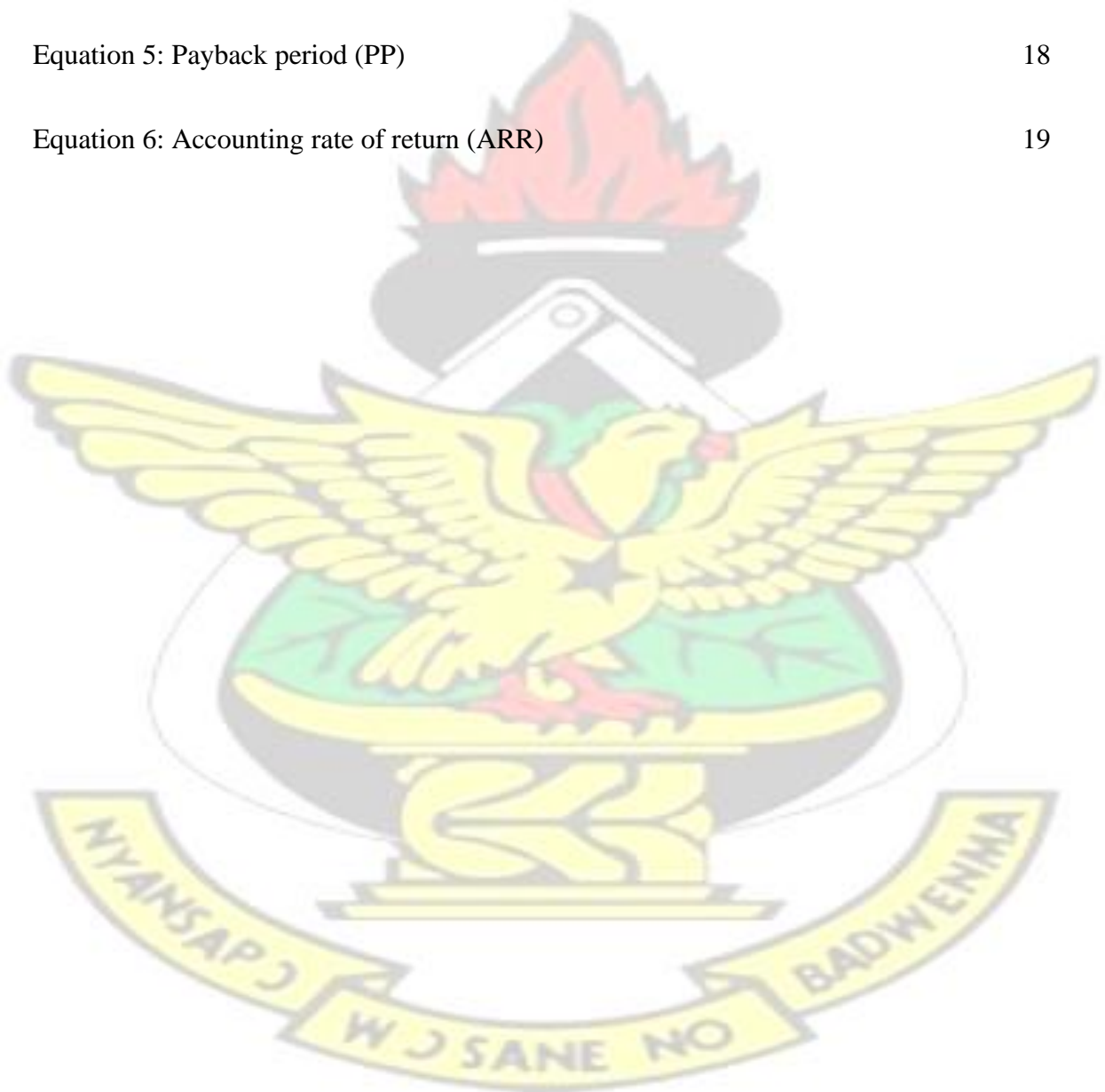
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## **CHAPTER ONE**

### **INTRODUCTION**

The overarching reason or objective of the study is to examine the correlation linking capital budgeting activities and monetary performance of private waste management firms in Ghana with particular reference to Zoomlion Ghana Ltd. This chapter presents background of the study, problem statement, objectives, research questions, benefits of the research study, scope of it, limitations, and ethical considerations.

#### **1.1 Background of the Study**

Programs and policies regarding management of waste is a huge challenge in the economy of Ghana. The indiscriminate dumping of refuse by indigenes continues to be a daunting task for authorities to manage. Poor waste management undoubtedly leads to serious environmental and health problems including malaria, cholera, respiratory infections, and loss of biodiversity. Thus, waste management companies such as Zoomlion Ghana Ltd, Universal Waste Concept, and City Waste Management Co. Ltd, spend massively on infrastructural development for instance structures, acquisition of trucks, information technology, and human capital to deal with waste. Consequently, measures would have to be set up to carefully analyse and through which capital projects could be given priorities in an orderly manner in anticipation of maximising shareholder wealth. For this to be accomplished, there will be the need for tools that will aid the finance managers in assessing the advantages or qualities of specific projects so as to rank competing projects to ensure that investments selected capital projects result in greater financial outcome (Gitman and Zutter, 2013).



Waste management is capital intensive and as a result, waste management firms need huge amount of capital for maintenance and expansion purposes so as to adequately manage existing and future operations. Hence, it is required to reserve funds specifically to maintain the firm's aging non-current assets. Waste management firms, like Zoomlion Ghana Ltd makes massive expenses in structures, recycling plant, vehicles, information technology and so on. Brigham et al., (2011) describe the construct as the process of assessing long-term project. A system of effective capital budgeting practices is a significant component of an entity's management to ensure that capital projects are prioritised and ranked according to the needs of the company.

Gitman and Zutter (2013), asserts that a finance manager should not forget that lack of capital budgets can have serious financial repercussions. This is because a firm's capital budgeting defines a strategic direction, as the implications of the company's investment appraisal decisions remain for a long time. In order to operate effectively, firms need a lot of resources (Mirza and Javed, 2013). Capital budgeting decisions must be cautiously evaluated or else poor assessments can lead to increase in expenditure, in that way reducing the projects' NPVs and thereby resulting in them been unattractive (Gitman and Zutter, 2013). There is therefore the need to put in place a suitable capital budgeting structure that will give the company the maximum benefit.

## **1.2 Research Problem**

The issue of capital budgeting requires a strategic analysis in order to implement the most appropriate diversification decisions. Owners of countries resources and decision makers has been preached on the relevance of critically, continuously and carefully monitoring investment activities in United State of America (Government Finance Officers Association, 2017). One of the essence is that firms could use that as a strength to raise enough funds for the financing of its activities

Watson and Head (2010). It was stated in the study of Mendes-Da-Silva and Saito (2014) and Maquieira et al. (2012) that the tangent at which managers undertake their capital budgeting strategies differ from one country to the other, especially comparing Latin America to other developed Nations. This shows that, it becomes relevant and necessary for firms located in different countries to study their environment before adopting and implementing strategies in relation to capital budgeting. It therefore deems appropriate and right for firms in Ghana to gain knowledge concerning such strategies that best fit their system.

The justification is that the business environment continuously changes with high uncertainty, therefore, what strategy or tool used and was successful in some years back might not work in this current business environment. This indicates that successful firms implement modified or combined techniques regarding capital budgeting to achieve the targeted financial performance (Zhang, Huang & Tang, 2011; Byrne & Davis, 2005; Singh, Jain & Yadav, 2012; Kersyte, 2011; Bock & Truck, 2011; Dickerson, 1963 among others). Identifying the most used criteria by firms in Ghana as against their financial performance could serve as a signal for firms yet to enter into the market. The problem this research work intends to address is the confusion that has engulfed waste management firms in Ghana in relation to the capital budgeting method to be adopted that will impact positively on financial performance and to narrow the gap concerning less studies on capital budgeting in developing countries, especially in West Africa and specifically Ghana.

### **1.3 General Objectives**

This study aims at examining the association that subsists linking capital budgeting practices and private waste management company's financial performance in Ghana.

### **1.3.1 Specific Objectives**

1. To find out if project valuation methods have positive influence on profitability.
2. Check whether the project is subject to rigorous defined procedures.
3. To recognize the appropriate capital budgeting techniques and activities that could enhance the monetary progress of the waste management sector.

### **1.4 Research Questions**

Below are the research questions the current study seeks to find answers to;

1. What is the association linking capital budgeting processes and the financial progress of a waste management company?
2. Do capital projects go through laid down budgeting processes?
3. To improve financial performance, what investment appraisal practices are suitable?

### **1.5 Significance of the Study**

There has been growing demand for the management of tonnes of waste generated in Ghana on daily basis. This worrying situation has been the headache of past and present governments. Clearly, Metropolitan, Municipal and District Assemblies (MMDA's) are unable to manage waste generated daily especially from the market places, and on the streets. As a result, over the last decade or two some private waste management companies have emerged to manage this unfortunate canker. Such companies worth mentioning include Zoomlion Ghana Ltd which is at the forefront of managing Ghana's waste all over the country. These private waste management companies have committed long-term funds in infrastructure development. Capital is one of the limited resource and companies should undertake all necessary requirement before injecting it to

the appropriate and right business over time. Consequently, capital projects must be carefully examined and implemented in a systematic order to maximize shareholder wealth.

### **1.6 Scope of the study**

This work focus on the association linking capital budgeting procedures and financial progress of private waste management firms with emphasis on Zoomlion Ghana Ltd. It focused on the level of management's commitment to the practices of capital budgeting. Therefore, other factors impacting financial performance of corporate entities were outside the scope of this study.

### **1.7 Limitations of the study**

This study could not use all waste management firms in Ghana, as a result of that generalization of findings became a problem. The study also could not consider using the longitudinal research approach which offers a better and strong outcome. Moreover, the study did not cover other aspects such as sources of capital. There was the challenge of delay in responding to the questionnaire as respondents were in the month of their budget preparation and most of them were unwilling to attend to the questionnaire. The study was therefore halted till all responses were received. However, despite the limitations of this study, findings are reliable and valid.

### **1.8 Organization of the Study**

The study is organized into five main chapters, which follows in a chronological manner. The beginning chapter captures information base on the type of sub-heading. The information obtained is grouped according to the following sub-headings; background information to study, statement problem, research objectives, research questions, scope of the study, brief methodology and



significance of the study. Chapter two is the next chapter after the beginning chapter, and it provides relevant literature concerning past or previous scholars confirmed and non-documented findings in relation to this study. The relevant information will base on; capital budgeting activities, techniques, financial progress among others, empirical reviews and the conceptual model of this study. The preceding chapter after chapter two seeks to provide information on the research design used in this study, the source of data, the type of data analysis tool, the profile of institutions under study, the reliability and validity test, the scale items used and the ethical consideration. Chapter four mainly provides information concerning the data analysis, which includes; demographics of respondents, regression analysis and others. Chapter five is the final chapter, which provides a summary of findings on this study and the recommendations for organizations and future scholars.





## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

This chapter fundamentally defines and describes investment appraisal and the influence on financial performance, and then reviews what has already been discovered by leading academic and professional writers, company financial performance, recognizable and accepted activities in the industry, and capital budgeting procedures in the private sector.

#### **2.1 Conceptual Review**

This section chiefly explains capital budgeting, capital budgeting cycle, and capital investment appraisal methods.

##### **2.1.1 What is Capital Budgeting?**

Capital budgeting comprises two distinct words: “capital” and “budgeting”. Capital in this sense refers to expenditures incurred on acquiring fixed asset, entering into new market and product and diversification of the business. Budgeting on the other hand is concerned with consciously setting project targets to ensure maximum profitability. Capital budgeting, synonymous with investment appraisal, is a technique used by companies to consider future benefits of injecting money into a project now. Brigham et al., (2011) defines the construct as the decisions managers are required to make in connection with identified projects that add to the company’s value. Al-Mutairi, Nasel and Saeid (2018) explained the construct as a planning tool used by corporate entities to come with the best option when assessing more than one activity or project. It is a technique mostly applied by management in knowing the outcome and benefits of a project. Moreover, Cleartax (2019) view

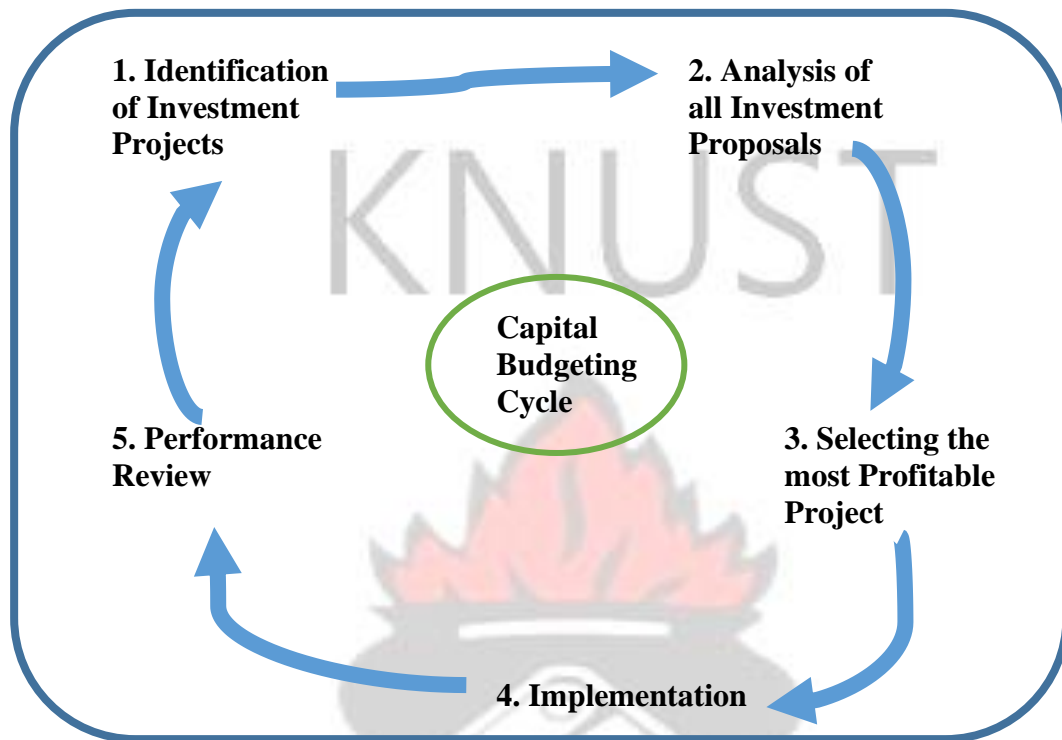
the construct as analysing investments and huge expenditures so as to achieve the best returns on investments. It has been argued that, companies that decides to go through this practise should make sure that it is in alignment with the firms' objectives and should increase the chances of enjoying competitive edge (Brijlal and Quesada, 2009). Hence, (Hillier et al., 2013) are of the view that irrespective of the nature of the economy, whether booming or in recession, requires management and firms to invest prudently in order to survive.

The activities involve in ensuring the success of the construct is therefore the critical decisions of management that is concerned with the selection of projects and its associated actions that must rope in returns in the future over the entire life of the project. The International Federation of Accountants (2013), argues that to sustain a healthy and powerful economy and to guarantee a viable economic progress, it is imperative to implement a planned, reasonable and comprehensive investment appraisal technique in addition with sound decisions. Decisions regarding the term, continues unabated as one of the subjects of growing hypothetical and experimental assessments in accounting and finance. Capital investment decisions of a company is one way of describing its vision and strategic intent since the outcome of investment decisions exist for several years.

### **2.1.2 Capital Budgeting Cycle**

According to Batra and Verma (2014) it refers to all activities geared towards assessing a would-be capital investment project whose amount is substantial. It requires a number of tasks that must be undertaken at dissimilar stages. The capital budgeting cycle has the following steps as illustrated in Figure 1.

Figure 1: Capital budgeting cycle



#### **a. Identification of Investment Projects**

The first stage of the construct focus identifying multiple projects or possible new markets. An investment opportunity can be product expansion or purchasing a new asset. There is therefore the need to generate good quality investment ideas. Such ideas emanate from numerous sources such as customers, employees, management and from competitors. Batra and Verma, (2014) suggests that company management must have a system in place to take in investment suggestions and give them the attention each deserves. Proposals for capital investment projects can be generated at various levels within and outside a company which are usually assessed by the finance department or a dedicated capital budgeting department.

#### **b. Analysis of all Investment Proposals**

Once a company gives recognition to an investment opportunity, there is the need to weigh its options for investment. For example, once the company has decided that new asset should be acquired, the next step would be deciding on how to acquire the asset. According to Gitman and Zutter, (2013) financial managers embark on a number of formal appraisal and scrutiny of proposed projects to arrive at the advantages of such proposals. Analysis of proposals are done to do away with needless wastage of resources. Projects that have been acknowledged are vetted by management in order to remove unrealistic proposals. Companies must be prudent to perform certain steps aimed at examining proposed capital projects. BPP Paper F9 (2009) has prescribed the following:

- Projects need to be categorised considering its nature. It involves identifying and grouping projects into much or low demanding monetary assessment and projects that are required to yield maximum or minimum return in order to meet management investment requirement.
- Monetary investigations are to be done on the activity.
- The result of the monetary scrutiny or investigation is then matched to some suitable predetermined standards.

### **c. Selecting the most Profitable Investment Project**

Deciding on whether to invest or ignore a proposed project is very essential in investment appraisal. In the stage of selecting the most profitable investment project management with their knowledge and background checks comes out with the selected project out of a lot to maximise profit whilst not exceeding their powers. It has been argued that comprehensive and thorough analysis is required by management before injecting money into a project with the approval of top level management and support Brigham et al., (2011). Gitman and Zutter, (2013) also asserts that



the top most level of management of a corporate entity are obligated to approve incurring cost up to a certain level. However, BPP Paper F9, (2009) claims that all levels of management have the right to contribute to investment decisions regarding projects that requires pursuance or otherwise.

#### **d. Implementation**

In the implementation phase, the approved project is enforced. According to Batra and Verma (2014), it includes “manufacturing facility setup, undertaking of the required designs, bargaining and contracts, construction and training and plant commissioning completion”. Once the project is accepted, money is channelled to commence the project. It should be noted that Gitman and Zutter (2013) are of the opinion that funding for larger projects normally are rolled out in stages.

#### **e. Performance Review**

Measures must be put in place to exercise some level of control and monitor the progress of a project while it is still on going. It has been argued by BPP Paper F9 (2009), such measures should ensure the following:

- Financial expenditure should not go beyond the established budget
- There is no delay in the carrying out of the project
- The expected profit is ultimately obtained

Project results should be monitored to allow for comparative analysis of the exact expenditure and advantages and anticipated outcome (Gitman and Zutter, 2013). If the actual and expected results are different, then follow up is necessary.



### 2.1.3 Investment Appraisal Methods

The decisions regarding undertaking a new project or injecting funds into a new line of business activity is fundamental to company's progress or failure (Brealey, Myers and Marcus, 2004). They further asserts that financial managers do not only consider the advantages associated with a project but also pay interest in the duration it will take in order to gain such advantages. Again, expected advantages are infrequently certain because a new investment could be a blessing or a curse to the business. As capital investment most of the time requires substantial amounts of funds and with long term consequences, there is the need for financial managers to thoroughly scrutinise all investment projects to be convinced of their worth before embarking on them. Therefore, the capital budgeting methods refer to techniques that provide knowledge on the particular project to pursue or otherwise. There are many methods that provide information on which project to embark or undertaking. It should be noted that selecting the project worth investing or injecting funds into, requires managers not to overlook on other existing separate projects and prioritize those with almost the same benefits (Gitman and Zutter, 2013).

Due to the difficulty in raising enough funds of organisations, discounted cash flows (DCF) and risk analysis methods are regularly used to contrast diverse investment choices (Higgins, 2009). Investment resolutions are significant to monetary managers, because they identified and present information on those project that could lead to the failure of the firm. There are discounted cash flow (DCF) methods and non-discounted cash flow methods (NDCF). According to Gitman and Zutter, (2013), DCF involve identifying the current worth or value of a project. This involve making adjustments to long term cash flows at an interest rate ascertain from the expenditure associated in borrowing and the risk of embarking the project. The non-discounted approach, cash

flow does not consider the cost of capital and the time value of money. Simply put, cash flows are not discounted.

#### **a. Net Present Value (NPV)**

According to Brigham et al., (2011) this approach is based on the DCF approach. It has been argued that the NPV is an advanced investment appraisal that considers risk and time value of money Brijlal and Quesada (2009). NPV is an advanced investment method where the initial injected fund is deducted from the current value of DCF at a percentage similar to the cost of capital of a company Gitman and Zutter (2013).

#### **Equation 1: NPV**

$$NPV = \sum_{t=1}^n \frac{CF_t}{(1+r)^t} - CF_0$$

The NPV makes use of cash flows, the flows are also use by companies for payment for dividends. Different methods do not consider flows after a certain date, but not in NPV. The NPV make use of all flows in an activity or project. NPV also properly DCF when dealing with cash flows, as different techniques or method could disappear with time valued money. (Hillier et al., 2013). In short, the rules of the NPV is that financial managers increase investors' interest through the funding of projects that has returns greater than the cost of the project. According to Brealey, Myers and Marcus (2004) projects with positive NPV is worth investing and vice versa.

When accepting / rejecting a decision under the NPV, the following decision basis must be establishedq:

- NPV with value above GH ¢ 0, project should be pursued.
- NPV with figure below GH ¢ 0, project is not worth investing.

However, if two projects cannot happen concurrently, it is advisable to invest in in the one with higher NPV projects and reject other projects (Brigham et al., 2011).

#### **b. Internal Rate of Return (IRR)**

Instead of computing the NPV of a project, firms prefer to find out if the returns on the project supersede the benefits that would arise had it not been invested in the pursued Brealey, Myers and Marcus (2004). Hillier et al. (2013) suggests that the IRR is preferable in the absence NPV technique. IRR, also an advanced investment appraisal method that reflects risks, project monetary flows and time value for money Quesada and Brijlal (2009). IRR is the reduction rate that is equal to an NPV of a capital project with GH¢0. As shown in Equation below, the rate used for the investment is eventually the IRR.

#### **Equation 2: IRR**

$$NPV = \sum_{t=0}^n \frac{CF_t}{(1+IRR)^t}$$

According to Brigham et al., (2011) makes a case that IRR is quite unique because it equates the project value as against the current value of the receipt. They mentioned the following reasons:

- The project's IRR is the expected return.
- If the IRR surpasses the expenditure incurred on the project, there would be excess property remaining in the business even after the capital has been paid. This surplus is of benefit to the shareholders of the company.
- Also, if the IRR on a project is in excess of the cost of capital, the investors wealth will increase.

The IRR is a rule that summarises the information about a project in a single rate of return (Hillier et al., 2013). According to Brealey, Myers and Marcus (2004), the IRR rule is to invest in any project that offers a rate of return that is higher than the opportunity cost of capital. This makes it easy for managers to discuss and evaluate projects. Despite the extensive use of the IRR, it has got some disadvantages with regards to the decision to accept or reject an investment (Magni, 2011). For instance, it is not compatible with NPV method as well as multiple IRRs for some investments.

### c. Modified Internal Rate of Return (MIRR)

MIRR, as its name stipulates, is a modified or improved IRR to better measure profitability. Brigham et al. (2011) believes that it is naturally more attractive for employers and investors to appraise projects in terms of rate of return than NPV. For this reason, MIRR is designed to be a better percentage evaluator than IRR.

**Equation 3:** Modified Internal Rate of Return (MIRR)

$$\sum_{t=0}^n \frac{COF_t}{(1+r)^t} = \sum_{t=0}^n \frac{CIF_{t(1+r)^{n-t}}}{(1+MIRR)^n}$$



$$\text{PV of costs} = \frac{\text{Terminal value}}{(1+\text{MIRR})^n}$$

MIRR has significant advantages over the regular IRR. MIRR assumes that the cash flows of all projects are invested back at capital cost, whereas the general IRR stipulates that each project's cash flows are reinvested in the project's own IRR (Brigham et al., 2011). In general, reinvesting at capital cost is more accurate, so MIRR is a superior indicator of the true profitability of an investment.

#### **d. Profitability Index (PI)**

Profitability index, according to Hillier et al., (2013) is the ratio of the present worth of expected future cash flows after the original investment divided by the initial value. It attempts to determine the relationship between the cost and benefit of a proposed project.

#### **Equation 4: Profitability Index (PI)**

$$\text{PI} = \sum_{t=1}^n \frac{\text{CF}_t}{(1+r)^t} \div \text{CF}_0$$

Brigham et al., (2011) asserts that the PI specifies the comparative profitability of the suggested investment or the present value per the initial costs. When companies use PI to evaluate investment opportunities, the decision rule that companies follow is to invest in projects with an index more than 1.0 (Gitman and Zutter, 2013). If the PI is greater than 1, it means that the present value of the cash flow is greater than the absolute value of the initial cash expenditure, and therefore the project is considered worth embarking on.



#### **e. Discounted Payback Period (DPP)**

Discounted payback method is a modification of the usual payback criteria. DPP is quite similar to the regular payback method, except that DPP discounts the expected capital flow to the cost of capital of the project (Brigham et al., 2011). The discounted payback takes into account the time value of money, but the cash flow after the maximum payback is still ignored (Bennouna et al., 2010). Brigham et al., (2011) defines the discounted payback as the length of time expected to recover an investment from a discounted net cash flow. This contrasts the normal payback method, where the inflow of anticipated cash flows can be greater than the first outflow, but the NPV is negative if the inflow is discounted.

#### **f. Payback method**

The payback period of a project is the length of time until cash flows recover the initial investment in the project (Brealey, Myers and Marcus, 2004). Brigham et al. (2011) suggest that the payback method was the first formal method to be used to appraise capital budget projects. Payback is the time required for a company to get back its original investment in a project based on cash inflows (Gitman and Zutter, 2013). The payback criteria is simple, widely held and straightforward because it does not clearly consider time value of money (Gitman and Zutter, 2013).

**Equation 5:** Payback period

$$\text{Payback period} = \text{years prior to full recovery} + \frac{\text{Unrecovered cost at start of year}}{\text{Cash flow during full recovery}}$$

According to Hillier et al., (2013) the payback approach is usually used by large companies when making decisions which are comparatively small. There are desirable characteristics for administrative control. As long as the investment decision itself is essential, companies can access managers' decision-making skills. The payback period can be adopted by relatively small companies owned by individuals who have good prospects but do not have access to the capital markets. The ability to quickly recoup investment funds will go a long way to increase the likelihood of reinvestment in such a business. The payback method is also beneficial when a company invests in developing markets. If there are more than one mutually exclusive projects with comparable payback periods, the project with the shortest payback is selected (Viviers and Cohen, 2011). By selecting projects with short payback periods, the company will increase free cash flow. Therefore, the company will not tie most of its investment to long-term projects.

The payback period as discussed is not a faultless way because of its associated disadvantages. Hillier et al. (2013) addresses at least three issues related to the payback period.

- a) The payback method does not take into account the cash flows within the payback period.
- b) The period ignores all cash flows that occur after the payback period. Because of the long-term direction of the payback period, some important long-term projects may be rejected.
- c) There is no guide to choose the deadline for return on investment, so the choice is rather subjective.

When making accept or reject decisions, the following decision criteria apply:

- Accept the project if the payback period is shorter than the maximum allowable payback period.

- Reject the project if the payback period is longer than the maximum allowable payback period.

#### **g. Accounting rate of return**

The accounting rate of return (ARR), also referred to as average rate of return, is the financial ratio used in investment appraisal. ARR is percentage of average accounting earnings gotten from a project compared to the average accounting worth of a project over that period. Hilar et al (2013) calculates this as the average investment income after taxes as well as depreciation, divided by the book value of the investment project.

#### **Equation 6: Average Rate of Return**

$$\text{Average rate of return} = \frac{\text{Annual average cash inflow}}{\text{Total cash outflow}}$$

According to Firer et al., (2009) the accounting rate of return does not take into account time value of money though it is simple and easy to calculate. At the beginning phase of an investment project, the ARR can serve as a quick pointer of the profitability of the project, however, it is not appropriate to use it as a decision-making criterion.

## **2.2 Theoretical Review**

This section focuses on review of theories related to capital budgeting. Key amongst them are: factors of firm financial performance, project analysis, capital rationing, time value of money, and financial planning.

### **2.2.1 Factors of Firm Financial Performance**

A company's financial performance is important because it seeks to maximise shareholders. As a result, analysing the financial performance factors of a company is particularly important for investors. Investors value return on investment because business success generates long-term benefits. Mirza and Javed (2013) states that the financial feat of a corporate entity will increase employee income in a timely manner, come out with quality products for customers, and equip them with environmentally friendly manufacturing facilities.

#### **a. Ownership Structure**

In a number of ways, the ownership structure of an entity is an essential factor that influences the entity (Mirza and Javed, 2013). According to Lin et al. (2011), the concentration of internal ownership has a direct linkage with financial restrictions of an entity, weakened by institutional ownership. However, internal ownership has a relationship with the progress of the company but inversely correlates to the size of the firm. This might be due to the lack of capital input from outside the entity (Bohren et al., 2009).

#### **b. Conditions of the Economy**

The economic situation of a country can have a big impact on the financial performance of a company located within it. The cost of borrowing can have negative effects on an entity's ability to rope in funds and then invest in developmental projects (Ntim, 2009). For example, utility prices, high inflation rates, low income levels of inhabitants and plant and machinery costs due to worsening money or import costs can ultimately reduce demand for industrial goods, which negatively impacts the corporation's performance (Mirza and Javed, 2013).



### **c. Management of Risk**

Risk can be defined as the uncertainty of a result. Actual and expected results may vary. Therefore, risk management has a significant impact on financial performance. Mirza and Javed (2013) pointed out that high-risk companies tend to attract high risk investors. The advantages of project risk management are significant (Jutte, 2014). The project manager and his team can help the company make a lot of money by actively responding to indeterminate project happenings. The result, according to Jutte (2014), is to minimise the effects of project dangers and seize the resulting opportunity. This ensures that projects are delivered on time and on budget, with the quality results the organization needs. Risk-return relationships need to be managed so that investors can benefit from risk (Mirza and Javed, 2013).

### **d. Corporate Governance**

Corporate governance refers to the rules, processes and laws governing the management and regulating of companies (Gitman and Zutter, 2013). According to Reddy (2010) corporate governance processes are structures, values, and actions that provide direction on how companies set goals, develop strategies and plans, evaluate and report on performance, and manage risk.

To capitalize on value, a company need a structured governance system. These may include the process of detecting, addressing, and mitigating post-contractual unscrupulousness (McGuigan et al., 2011). From a researcher's point of view, good corporate governance practices can greatly help improve corporate performance (Chugh et al., 2009). Yasser et al., (2011) conducted survey to test the characteristics of the board, the characteristics of shareholders and ownership, including

transparency and disclosure. Except for transparency and disclosure, the results indicated a practical relationship between index and performance.

#### **e. The Company's Capital Structure**

Operating an entity effectively requires a significant amount of resources (Mirza and Javed, 2013). Finance can be searched from internal or external sources. Funds generated internally are called equity financing and external funds are called debt financing. Capital structure is the combination of equity and long-term debt maintained by a company (Gitman and Zutter, 2013). The options for determining the capital structure need to be carefully considered. Otherwise, poor decisions can lead to high capital costs, lower project NPV, and beyond acceptable levels (Gitman and Zutter, 2013).

Accordingly, too little equity financing can significantly increase owner control and require a decent capital structure for the company to generate maximum profits (Abu-Rub, 2012). Financing a company through debt faces some insolvency risks, but has some associated tax and monitoring benefits (Su and Vo, 2010). Gitman and Zutter (2013) suggests that lenders require comparatively low returns to minimize the risk of long-term capital contributors. Gitman and Zutter (2013) further emphasized that lenders have an upper priority for invoicing on income or payable assets, and have reduced legal pressure on lenders to pay compared to equity finance. Can be much larger.

A company's financial position can have a significant effect on its capital structure. For example, if a company wants to return profits to an investment project, it must firstly be able to generate sufficient profits to satisfy owners and meet such investment needs (Mirza and Javed, 2013).

Another problem is that creditors are more at ease investing in profitable commerce and projects. This is because such projects and companies are more likely to pay their debts.

### **2.2.2 Project Analysis**

Financial managers play a significant role in project acceptance; they have the strength or power to either accept or ignore a project. It should be noted that funding proposals forwarded to them are not straight forward accepted by them, but systematically and carefully review potential forces likely to affect such project along the way (Brealey, Myers and Allen, 2013). Project analysis is therefore the process of examining the aspects of a project in details. Project analysis basically entails the creation, management, and disbursement of reports that are related to a project. It also incorporates several other aspects such as the maintenance of project assets, monitoring and evaluation of the project, and drafting of the relevant reports. This is mainly to see to it that the project runs as expected and is also within the predefined budget. Finance managers considers risk analysis, sensitivity analysis, scenario analysis, simulation, decision tree, Monte Carlo simulation, real options and so on to come out with underlying principles in funding proposals and assess factors that could lead to the failure of such projects (Brealey, Myers and Allen, 2013).

#### **a. Sensitivity Analysis**

Decision making becomes difficult due to uncertainty of the environment or business arena. Accordingly, the finance manager must show the effects of uncertainty in the information provided to decision makers insofar as this is possible (Lucey. T, 2003). A sensitivity analysis is use to gain information regarding concerning the impact of outcome variable impact a predictor variable in the context of assumptions Preston, (2018). It has been defined as the technique use to know the level of the overall uncertainty in a model when come into contact with multiple source of

uncertainty (Kenton, W. 2019). Sensitivity analysis is the analysis of the effects on project profitability of changes in sales, cost and so on (Brealey, Myers and Marcus, 2004).

Gitman and Zutter, (2013) describe the term as a monetary model which shows the level of change anytime independent variables are altered and it helps in coming out with a better resolution.

#### **b. Scenario Analysis**

Brealey, Myers and Allen, (2013) defined the term as a process whereby the worth or returns of projects or a project is estimated factoring changes or possibilities in the long term. This technique help management to have a fair knowledge of what the outcome of a project will be under different circumstances. According to Gitman and Zutter, (2013) the technique allow managers to associate the degree of risk under each environmental situation as well as the returns it will generate under such conditions. According to Kenton. W (2019), this technique has the following significance:

- It provides information to users on the level of risk associated to the project before committing resources into it to commence it.
- The technique also helps users to be proactive, identify possible future occurrences which permits them to take action now to resolve negative issues.

#### **c. Simulation Analysis**

Simulation is a statistics based behavioural approach that applies predetermined probability distributions and random numbers to estimate risky outcomes (Gitman and Zutter, 2013). This whole process of simulation analysis compels the decision maker to consider all the interdependencies and uncertainties characterising the project. Thus, the viability of the project is determined on the basis of number of outcomes and the probabilities realised through a series of actions performed during the simulation analysis (Brigham et al., 2011). As a result, the financial



manager can develop a probability distribution of project returns by typing the various cash flow components together in a mathematical model. The concept of simulation analysis can be further comprehended through the following steps:

1. The first step is to model the project. A model shows how the net present value is related to the parameters and the exogenous variables. The parameters are the variables specified by the decision maker and are held constant throughout the simulation, whereas the exogenous variables are randomly determined and are beyond the control of the decision maker.
2. The next step is to specify the values of the parameters and assign probabilities to the random variables that arise from the external factors.
3. Randomly, select any value from the probability distribution of each of the exogenous variables.
4. Compute the NPV for both the randomly generated values of exogenous variables and the parameter values, as specified by the decision maker.
5. Repeat the step 3 and 4 again and again, to get a large number of simulated values of NPV.

#### **d. Monte Carlo Simulation**

In most cases, capital budget decisions contain some uncertainty, and in response to these uncertainties in the decision-making process, some companies use Monte Carlo simulations to model probable outcomes (Gitman and Zutter, 2013). As with gambling strategy analysis, items are analysed to attempt to simulate real uncertainty (Ross et al., 2011). Monte Carlo is a problem-solving method used to approximate the probability of a particular result by performing several trial runs called simulations with the help of random variables. It is worthwhile to state that many

assumptions are made to ensure that all cash flows can bring many possible results (Loizou and French, 2012). To apply a Monte Carlo Simulation, Loizou and French (2012) proposed three basic steps:

- Design a deterministic model for evaluation.
- Identify suspicious variables and estimate likely distributions for each.
- Test the model and see the range and probability of the desired or unwanted outcomes.

Monte Carlo Simulation is quite flexible, with virtually no limitations on analysis. In general, you a corporate entity can easily scale and develop as needed. According to Gitman and Zutter (2013), the Monte Carlo package has an optimisation feature allowing managers with budget constraints to identify which combination of projects will ultimately yield the highest return. Despite these advantages, Monte Carlo package has some drawbacks. One drawback is the required possibility distribution input, which is unavailable all the time (Loizou and French, 2012). Historical data used to frame probability distributions is not at all times pertinent. The calculation may take much longer. According to Loizou and French (2012), the main drawback of this method is the possible relationship between independent variables, leading to a positive or negative combination of the outcomes.

#### **e. Decision Tree**

Proposed capital projects could be analyzed using a decision tree. A decision tree, according to Lucey (2003) is a pictorial way of showing a series of interrelated decisions and results, which can help to clarify complex decisions. Different results and associated probabilities vary, and there is really no reason why a company cannot use other decision rules actually based on expected values.

A decision tree is a diagram of chronological decisions and likely outcomes (Brealey, Myers and Marcus, 2004). Dhiraj (2019) suggests that decision trees solve the problem of machine learning by transforming data into tree representations. Each internal node in the tree representation represents a property and each leaf node represents a class label. Decision trees are advantageous to the finance manager in the following ways:

- Decision trees require less effort to prepare data during preprocessing.
- Decision trees do not require data normalisation and data expansion.
- Missing values in the data do not significantly affect the decision tree building process.
- The decision tree model is easy to understand and very intuitive and easy to explain to the technical team.

#### **f. Real Options**

The traditional approach to investment appraisal is believed to produce good results, but by design it is static. Therefore, a more strategic approach, known as the real option, has recently emerged (Gitman and Zutter, 2013). Brealey, Myers and Allen (2013), defined real option as the option to make modifications to a project. A quantifiable analysis of the active administration of real options was performed by Miller (2011). Before the option expires, it was noticed that the value of the actual option opportunity may alter depending on the cause of the time due to the risks to each asset under consideration. The real options are the opportunities included in long-term investment projects, allowing managers to modify cash flows and risks in ways that affect project acceptability. This gives executives the flexibility to maximise the value of their investment.

The main types of real options include the following:

1. Option to abandon: this is the option to terminate the project before the intended life expires. It is the choice to terminate the investment before the obligation is fulfilled (Gitman and Zutter, 2013. Brealey, Myers and Allen (2013) asserts that the decision to let go a project is not taken by nature but rather by management. It is prudent that once a project is no more viable, the firm will cut losses and exercise the option to terminate the project. This option allows executives to minimise or avoid the loss of projects that can go bad.
2. Flexibility option: This means the opportunity to design the process of production to accommodate assorted inputs and use a flexible production technology to generate a variety of outputs to increase the NPV of the investment (Gitman and Zutter, 2013).
3. Growth options: If the project under scrutiny is likely to open new doors, recognising cash flows from such opportunities should be part of the initial decision process. (Gitman and Zutter, 2013). If the project is likely to grow, then it is time to invest additional funds into the project in the future.
4. Timing Options: It must be emphasised that a project with a positive NPV does not necessarily mean that it must commence immediately. It might be prudent and more valuable to delay it a bit. According to Gitman and Zutter, (2013) timing options relate to the opportunity to delay the acceptance of the investment project for one or more periods and to quickly track or delay the process of implementing the project in response to, for example, new information or competition. Realey, Myers and Allen (2013) asserts that timing decisions are quite simple under circumstances of uncertainty. Companies need to analyse alternative dates for making their investments and compute their net future value at such dates.

#### **g. Project Portfolio**



Often, companies have a large number of investment projects that must be managed simultaneously. A project portfolio is a combination of these projects. Decision makers must assess and manage these portfolios (Vaillancourt, 2011). Therefore, portfolio management is the process, method and technique of the project manager to carefully review and uniformly manage the proposed project founded on several key characteristics. Portfolio management empowers managers to manage the time, resources and budget required to complete all interrelated tasks. According to Vaillancourt (2011), a key indicator of performance in portfolio management is strategically linking portfolios so that decision makers can choose a combination of such portfolios that are consistent with the company's corporate strategy.

### **2.2.3 Capital Rationing**

Management of companies have a core mandate of maximising shareholders' worth by accepting all projects that have a positive NPV. However, due to certain restrictions such as inadequate funding to finance all projects, the company must forego a number of such valuable projects. According to Brigham and Ehrhardt (2002), capital rationing can be defined as a situation in which a company restricts capital expenditure to less than the funds required to finance the optimal capital budget during a particular period. The optimal capital budget is the set of projects that maximises the worth of a company. Capital rationing is a financial situation whereby a company has only a limited number of funds available for capital expenditure and many projects compete for such funds (Gitman and Zutter, 2013).

Brealey, Myers and Marcus (2004) suggests that funding limitations on capital investments may be imposed by company top management or by investors. Financial restrictions by management should not cost the company anything. If the limits on projects are imposed by investors and

becomes too tight that really worthwhile projects are being ruined, the top management should seek more funding and relax the limits enforced on capital expenditure. Gitman and Zutter (2013) suggests that the goal of capital rationing is to choose the collection of investments that delivers the highest general net present value and does not require more funding than those budgeted for.

Projects can be chosen under capital rationing by using the internal rate of return technique or the net present value method. The IRR approach involves graphing the IRRs of an investment in a downward order against the total cash investment. The cost of capital line is drawn and a budget limitation is imposed and then the financial manager can ascertain the group of satisfactory investments. Gitman and Zutter (2013) asserts that the problem with the internal rate of return approach is that there is no guarantee of the optimum cash returns to the company. The NPV technique is centred on the use of present values to arrive at the group of investments that will eventually maximise shareholders' value. This is carried out by ranking investments on the basis of IRRs and then assessing the present value of the paybacks from each will-be investment to determining the mix of investments with the utmost overall present worth.

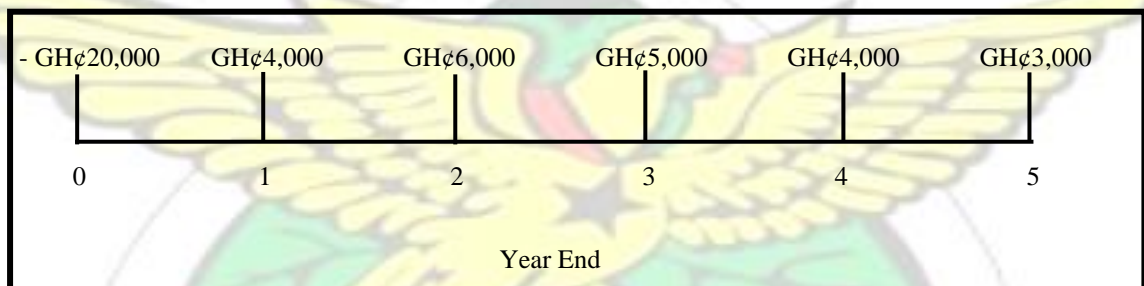
#### **2.2.4 Time Value of Money**

Financial managers need to have thorough understanding of time value of money because the value of investments in for example, new equipment and in inventory will be affected by the time value of money. Time value of money expresses the opinion that it is better to receive money now than later. Funds that a company have in hand today can be invested to earn a positive rate of return, thereby producing more funds tomorrow (Gitman and Zutter, 2013). A detailed understanding of the calculation of time value of money will help managers to manage cash receipts and

disbursements in such a way that it will enable the company to receive the utmost value from its cash flows.

One of the most important tools in time value analysis is the time line (Brigham and Ehrhardt, 2002). A time line illustrates the cash flows in connection with a given investment. It is a horizontal line on which time zero appears at the leftmost end and future periods are marked from left to right (Gitman and Zutter, 2013). According to Brigham and Ehrhardt (2002) a time line is used by analysts to help visualise what is happening in a particular problem and then to help set up the problem for solution. A time line illustrating an investment project's cash flow in Figure 2 below:

Figure 2: Time line

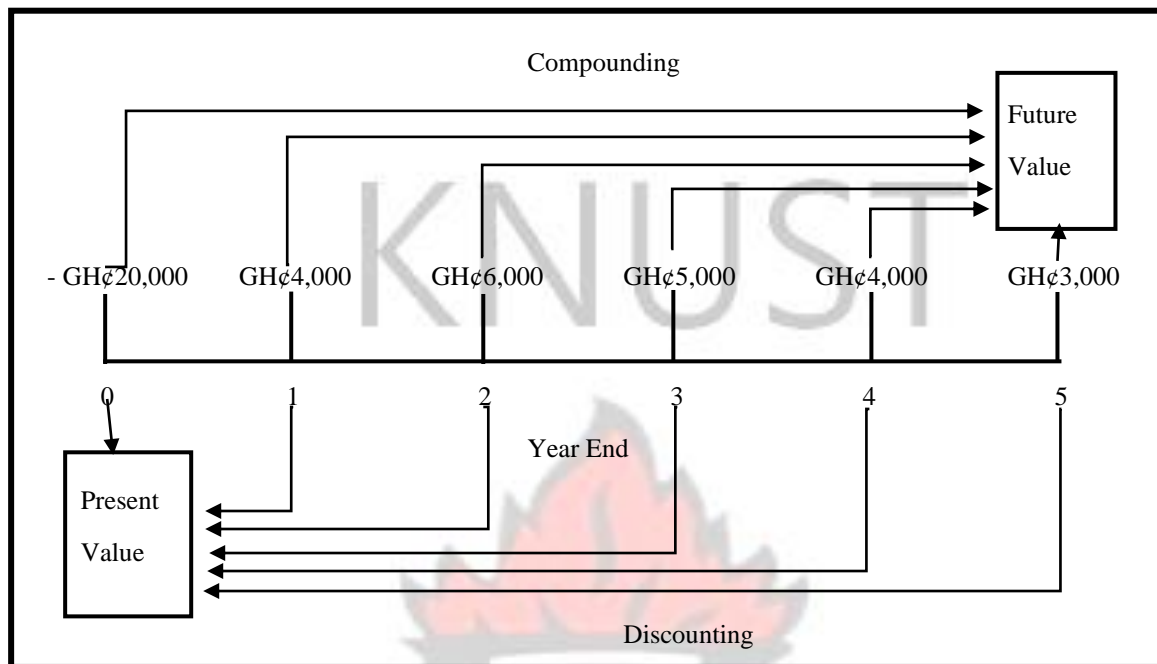


Source: Mavis, 2020

### **Explanation**

The cash flow today (time zero) and at the close of each succeeding year are above the line. The negative value shows cash outflows (GH¢20,000 invested today at time zero) and the positive values shows cash inflows (inflow of GH¢4,000 in year 1, inflow of GH¢6,000 in year 2 and the like). At a point in time, financial managers need to make the correct investment decision by comparing the cash flows as illustrated in Figure 2.

Figure 3: Compounding and discounting



Source: Gitman and Zutter (2013)

### Explanation

Figure 3 is a time line illustrating compounding to find future value as well as discounting to find present value. Compounding methods are used in finding future worth of each cash flow at the end of the project's life and then summation is done to arrive at the project's future value. It must be finanother hand, the present value method uses discounting to arrive at the present value of each cash flow at time zero and then makes a summation of these values to find the project's value now. Gitman and Zutter (2013) are of the opinion that when making project decisions, financial managers often adopts the present value technique.

### **2.2.5 Financial Planning**

Project investments need to be paid for, and so both investment and financing decisions cannot be made independently. According to Brealey, Myers and Marcus (2004), financial planning energies managers to think thoroughly about their objectives for growth, investment as well as financing.



Planning should make known any discrepancies in such objectives. Financial planning is a significant aspect of a company's operations as it provides the roadmaps for supervisory, organising, and controlling the company's actions to arriving achieving its intended objectives (Gitman and Zutter, 2013).

It should be noted that leaders who are in charge of managing and planning organizations financial issues must be able to identified things that are needed to foresee the progress of any project and on the other hand outline those factors that impede the progress of a project as well. Moreover, they should be able to impact positively when undertaking funding and monetary resolutions as a whole. Brealey, Myers and Marcus (2004) asserts that financial planning comprises the following:

- a) Making analysis of the investment project and financing choices available to the company.
- b) Making forecasts of the future repercussions of current decisions.
- c) Determining which other course of action to embark on.
- d) Evaluating succeeding progress in relation to the objectives set out in the monetary plan.

It is worth noting that financial planning is not designed to necessarily to tackle or minimise risk. It is instead a process of deciding the sort of risk to assume and which are not worthwhile or unnecessary to undertake. Companies must plan for their long-term and short-term investment needs (Brealey, Myers and Marcus, 2004).

#### **a) Long-term financial planning**

This is also regarded as strategic financial planning. Gitman and Zutter (2013) are of the opinion that the term includes or captures present he firms policies regarding its monetary spending with a time frame ranging from 2 to 10 years. Also, the term includes CB on a grand scale (Brealey,

Myers and Marcus, 2004). Financial managers in this way try to investigate individual investments that may or may not have disastrous impact on the firm. Those long-term financial plans consider projected expenditures on fixed assets, capital structure, research and development, and the like, as well as major sources of funding (Gitman and Zutter, 2013). Also included in the financial plan, would be possible cessation of existing investments, repayments of outstanding debts, and planned acquisitions, if any.

#### **b) Short-term financial planning**

This refers to the process of ensuring that companies have adequate funds to be able to settle its existing and accruing indebtedness for the next 12 months. Short-term financing decisions usually involves current assets and liabilities, and are usually reversible (Brealey, Myers and Marcus, 2004). Gitman and Zutter (2013) asserts that the term stipulates short-term financial decisions and the expected effect of those decisions. Key inputs into such period monetary data, operations dimensions and projections of sales.

### **2.3 Empirical Review**

Numerous researchers in accounting and finance have delved into examining capital budgeting practices and its impact on corporate bodies. According to Nishat and Haq (2009), capital budgeting methods play key role in every business entity as they have significant impact on investment decisions and project appraisals. Davina (2008) studied the CB activities adopted by contractors in Hong Kong (China) in the construction industry. The most widespread CB activities according to the study were the PB and ARR. In addition, the study held a contrary view that NPV and IRR were the major methods for investment appraisal as suggested in literature. A survey conducted by Baker (2011) which was primarily in the form of a questionnaire focused on capital

budgeting practices. It was sent to 225 managers who were in charge of capital budgeting of listed companies on the Tokyo Stock Exchange. The study revealed that Japanese companies handle their decision making by a mixture of the PB and NPV techniques. With respect to capital budgeting processes, financial managers typically use multiple tools in making their assessment.

Ahmed (2013) observed that a good number of UAE companies used CB methods to appraise their capital investments. The payback period, NPV and IRR were the predominantly used methods by most of the UAE corporate bodies. He further indicated that other financial variables such as size of the entity, profitability, revenues and leverage level were likely to affect the choice of the investment appraisal technique. Savage (2014) observed that NPV and payback period (PB) were mostly adopted and applied CB techniques in evaluating capital projects among Kuwaiti companies in the Gulf Cooperation Council markets. de Andres, de Fuente and Martin (2015) conducted a study on capital budgeting practices in Spain. Their findings confirmed that PB was the most favoured method, this was followed by IRR and NPV techniques. They found out that the popularity of the payback period amongst Spanish Chief Financial Officers (CFOs) was substantially higher than what is done in other European and North American nations. Their analysis brought to light that payback period was often applied by larger companies just like NPV and IRR most especially by CFOs who are involved heavily in their company's capital investments. An advanced valuation method like real options was not used much but has been adopted frequently in firms where progress and flexibility prove more pertinent among their sources of value.

Bierman and Smidt (2014) also found out that in Sweden, larger firms had the tendency to use capital budgeting methods on a regular basis when undertaking CB resolutions. They further



observed that the decision to use the capital budgeting methods were guided by some factors which among them are but not limited to features of the CEO, amount of shares owned by managers, qualification etc. The work of Gupta and Jain (2016) investigated the CB practices in SME's by selected enterprises of Haryana. They found out that in small firm's capital decisions were taken without going through a proper capital budgeting process. Again, only 12.5% of the surveyed industries were preparing capital budgets for taking long term investment decisions whereas 87.5% of the industries were not preparing capital budgets.

Another study undertaken in Brazil by Lima, da Silveira, Matos and Xavier (2017) assessed the CB activities in a group of small cotton ginning entities. They interviewed 10 managers from these firms and the result indicated that to ensure acceptable net operating results in the short term, a practical managerial approach was needful. Though capital budgeting was considered essential, it was not seen as sophisticated. Notwithstanding this, managerial experiences had a great deal of impact on the investment decision making processes. The study of Batra and Verma (2017) studied the CB activities of Indian firms listed on the Bombay Stock Exchange by using a sample of 77 companies. It was observed that both NPV and IRR techniques were the most method adopted. Also, Al-Mutairi, Naser and Saied (2018) assessed the empirical evidence concerning the current CB activities by non-financial companies listed on Kuwait Stock Exchange (KSE). The study brought to light NPV and profitability index as the widely used CB methods and that this was determined by the nature of the capital project under scrutiny as well as the academic and professional competences of corporate staff.

A study conducted by Ekeha (2011) to contrast CB methods embraced by cooperation's within West Africa and Europe, using data attained from a survey among 120 West African companies



and 225 European companies. On the average, the study showed that European CFOs adopts advanced CB methods as compared to countries within t Western regions of Africa. The findings indicated that European CFOs predominantly used the NPV method as compared to their counterparts in West Africa. However, the West African CFOs largely used the ARR more that their European colleagues do. Mgobhozi (2012) studied the monetary growth consequences of funds budgeting activities in companies that are into the manufacturing arena of South Africa. The study revealed that there was a positive correlation linking the two variables.

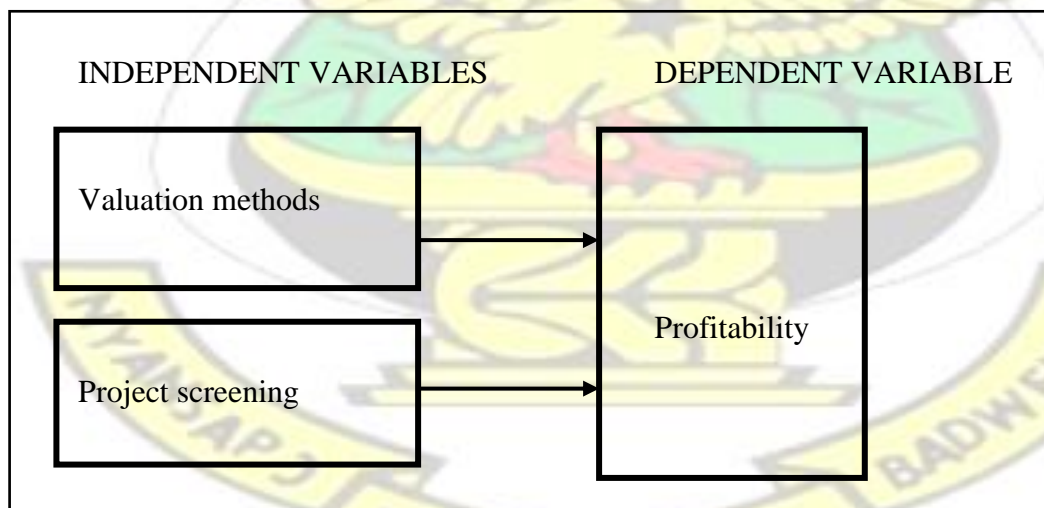
Nyaga and Ambrose (2013) undertook a study concerning how second cycle institutions uses and manage their funds in Kenya. Findings of the study revealed that during the beginning phases of capital budgeting, more energy and resources are channelled into it, however, during the ending stages or action period, less or small effort is dedicated into it. Egbiide, Agbude and Uwuigbe (2013) found out that in Nigeria the use of DCF techniques of appraising investments led to the conclusion that sound capital investment decisions by the application of the suitable evaluation methods were crucial to SMEs long term survival.

A research undertaken by Oppong-Boakye and Addai (2015) on capital budgeting practices of firms in Ghana showed that 84% of the surveyed firms used a combination of NPV and PB to for purposes of appraising their capital investments whereas the remainder adopted a mixture of NPV, IRR and PB They observed further that none of the corporate entities in the study adopted the accounting rate of return in combination with other methods. Dwamena Kwakye (2016) investigated similar topic in both state owned and individually owned firms in Ghana. He observed that the net present value method stood tall amongst other different techniques and it is the method embraced by majority of the businesses.

## 2.4 Conceptual Framework

Conceptual framework shows the correlation between the independent variable and the dependent variable (Kombo and Tromp, 2009). Therefore, by depicting the relationship between the variables, conceptual framework provides an understanding of findings that follow later. In this study the conceptual framework illustrates how investment appraisal methods influence profitability of the company. As per the literature review, the researcher has described the supposed pattern of the bond between capital budgeting valuation methods and firm profitability with a diagram as presented in Figure 4. The figure proposes that profitability is a function of the valuation methods project screening. It can therefore be observed from the framework that effective financial performance is possible by various valuation methods as well as project screening methods.

Figure 4: Conceptual framework for the analysis of capital budgeting practices on financial performance.



Source: Mavis (2020)

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.0 Introduction**

The chapter covers a wide range of research methods, populations, sample selection, data collection procedures, and data analysis.

#### **3.1 Research Design**

The researcher assumed a philosophy of positivism to assess the relationship of capital budgeting processes and monetary growth of corporations Saunders and Lewis (2012). A planned and systematic method has been taken in evaluating the implementation and link of capital budgeting procedures and monetary progress of private waste management firms in Ghana. According to Cooper & Schindler (2003), research design is about the strategy of examination adopted by a researcher intended to receive feedback from administered questionnaire. Descriptive design was used by the researcher due to its flexibility and ability to address both quantitative and qualitative data. It is also suitable for the collection of primary data from respondents. A survey approach was used to assess the implementation of investment appraisal in Zoomlion Ghana Ltd.

#### **3.2 Population**

According to Cooper and Schindler (2011), population can be defined as the factor from which inferences take place. The population proposed for this research is forty- four (44) consisting of all the Regional Offices and head office of Zoomlion Ghana Ltd with particular reference to staff at the Finance and Account units. This is because they have contextual knowledge in the field of study.

### **3.3 Sampling Techniques and Sample Size**

The sample size is a fraction of a group or set of identified element. Sampling, according to Cooper and Schindler (2011) defined it as the unbiased and fairly technique use to choose a fraction from a whole or group or population. The sampling technique adopted by the researcher was purposive sampling, also referred to as judgement sampling. Purposive sampling is an intentional selection of respondents by the researcher to partake in the study (Saunders, Lewis & Thornhill, 2012). It is a strategy to include participants who are knowledgeable in the area of study to provide vital information. The probability for a case to be selected is subject to the researcher's judgement. In this case study, the sampling size was twelve (12) comprising of Finance Managers at the regional offices and at head office of Zoomlion Ghana Ltd.

### **3.4 Data Collection Procedure**

In ascertaining data for this research, the researcher used questionnaires as financial statements were not available to be used as proposed. Before submitting the survey request, the researcher initially conducted a pretest in order to identified errors and ambiguities in relation to the scale items. According to Saunders and Lewis (2012) such initial test increases the reliability and enhances the study. The researcher administered the questionnaires to the examinees and explained scale items to the examinees which they had doubt. The researcher went back in a week time to collect them back. It should be noted that the questionnaire had both open and closed ended statements.

### **3.5 Data Analysis**



Data was analysed with the help of Microsoft Excel. It is a tool used for quantitative analysis to ensure speed and accuracy. The survey responses were entered in Microsoft Excel in tables form and used the tables to generate graphs. Frequency and percentages were used for the analysis.

### **3.6 Profile of the Organization**

The selected organization for this research work is Zoomlion Ghana Limited. It is one of the set ups to handle and manage issues regarding waste. It is recognised in Ghana and many other African countries. The company came into being in 2006, and is regulated by the company's Act 2006. Over the years, the company has been able to achieve its mission and vision, and due to that, it has experienced a lot of growth, either in resources or new establishments in different countries.

The company believes in partnership and communication within the chain, due to this it has linked up with all government agencies and individually owned business to combat waste related issues. It provides services to clients in the most effective and effective manner.

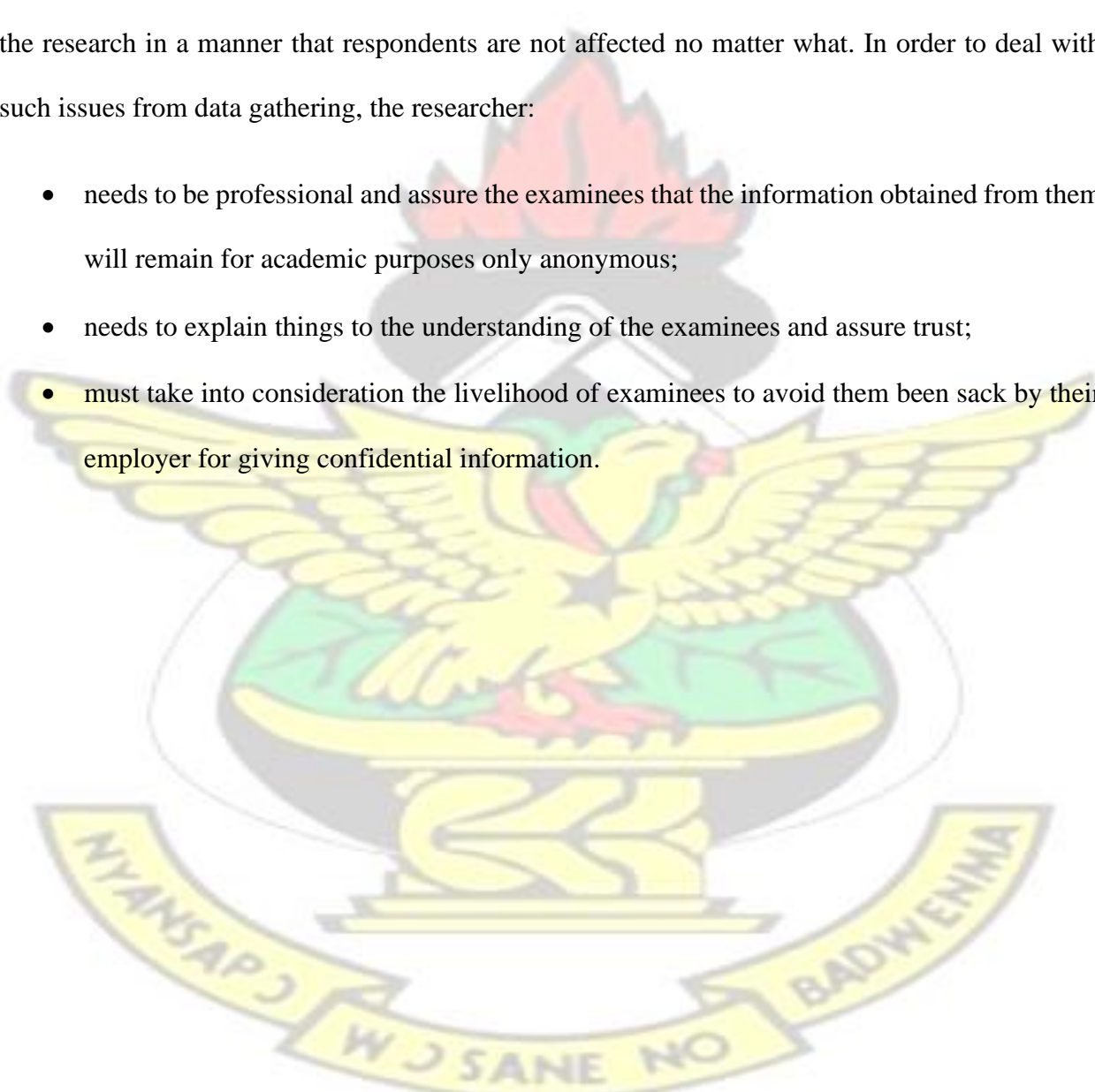
Ensuring environmental cleanliness is their vision and increasing and maintaining quality lives is their mission. Also, it has the following as it cherished and pursued values;

- Godliness and Fellowship
- Service Excellence
- Stewardship
- People Focused
- Teamwork

### **3.7 Ethical Considerations**

This kind of research cannot be performed without raising ethical issue. Ethical issues must be address at every chapter of research work. And it is appropriate for researchers to consider such ethical issues in order to avoid illegal issues. Most of the ethical problems comes when the researcher tries to gather data or information either from past research works or from the examinees. Examinees are obliged to act diligently and maintain honest, professional behavior and strict confidentiality unless otherwise authorized. It is the researcher's responsibility to carry out the research in a manner that respondents are not affected no matter what. In order to deal with such issues from data gathering, the researcher:

- needs to be professional and assure the examinees that the information obtained from them will remain for academic purposes only anonymous;
- needs to explain things to the understanding of the examinees and assure trust;
- must take into consideration the livelihood of examinees to avoid them been sack by their employer for giving confidential information.



## CHAPTER 4

### DATA PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

#### 4.0 Introduction

The chapter deals with data collected from the field, analysis, presentations and discussions of the findings. The results are presented according to the objectives and questions of the study. Primary data was generally used to answer the research questions. This approach was used due to the unavailability of public data of waste management firms in Ghana. A prototype of the questionnaire was written and discussed with research work supervisor. The final questionnaire was designed considering the supervisor's remarks and suggestions. In total, 12 questionnaires were sent out and received. Thus, the response rate was 100%.

#### 4.1 Descriptive Survey Results

This section mainly discusses the responses of the survey. It captures background information of respondents, availability of capital budgeting department, average project investment, idea generation process, project screening process, cash flow generation approach, cash flow valuation methods adopted, computer software analysis of capital projects, and capital budgeting effects on profit.

##### 4.1.1 Background Information of Respondents

The background information the researcher considered for the study was the number of years' respondents have been in the organization.

Table 1: Number of Years in Service

Category	Frequency	Percentage (%)
Less than 1 year	0	0.0
1 – 5 years	2	16.7
6 – 10 years	6	50.0
Over 10 years	4	33.3
<b>Total</b>	<b>12</b>	<b>100.0</b>

*Source: Filed survey*

Table 1 describes the number of years respondents have worked with Zoomlion Ghana Ltd. It indicates that 6 out of the 12 participants have had 6 – 10 years working experience with the organisation representing 50%. Whereas participants who have worked for over 10 years were 4 representing 33.3% and 2 responses from participants who had worked between 1 – 5 years also representing 16.7%. However, there was none respondent who have had under 1 year work experience. This finding implies that majority of the respondents' have adequate knowledge concerning the practices of Zoomlion Ghana Limited.

#### **4.1.2 Availability of Capital Budgeting Department**

The question sought to find out whether Zoomlion Ghana Limited has a designated department in charge of capital budgeting.

Table 2: Capital Budgeting Department

Category	Frequency	Percentage (%)
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<b>Yes</b>	0	0
<b>No</b>	12	100
<b>Total</b>	12	100

Source: Field survey

It could be seen from table 2 that, all the 12 respondents indicated that they had no dedicated capital budgeting segment in the organisation to deal with long-term investment decisions. However, a follow up question showed that the finance department had the responsibility of scrutinising all capital budgeting decisions representing 83.3% with the remaining 16.7% that other departments were involved in capital decisions.

#### 4.1.3 Average Project Investment

The study sought to find out on the average the capital project undertaken by Zoomlion Ghana Limited.

Table 3: Average Capital Project Investment

<b>Category (GH¢)</b>	<b>Frequency</b>	<b>Percentage (%)</b>
0 – 100,000	1	8.3
100,001 – 500,000	3	25.0
500,001 – 1,000,000	1	8.3
1,000,001 – 5,000,000	5	41.7
Above 5,000,000	2	16.7
<b>Total</b>	<b>12</b>	<b>100.0</b>

Source: Field survey

The 12 participants were requested to specify, using a given range of values in Ghana cedis, by choosing the company's average project investment. As depicted in table 3, 5 of the responses representing the majority showed that the average project investment was between GH¢1,000,001 – GH¢5,000,000 which is just about 41.7%. This was followed by GH¢100,001 – GH¢500,000 representing 25%. The minimum average capital investment was between GH¢0 – GH¢100,000 and GH¢500,001 – GH¢1000,000 and represents 8.3% respectively.

#### 4.1.4 Idea Generation Process

The research work tried to find out whether proposed developmental projects were backed by a formal idea generation process.

The participants were requested to choose a 'Yes' or 'No' reply as to whether there is an official idea suggestion submission process. Table 4 shows that the majority (83.3%) answered 'Yes' to the posed question. The inference of this finding is that opportunity is given for others to bring their ideas on capital projects.

Table 4: Formal Idea Proposal

Category	Frequency	Percentage (%)
Yes	10	83.3
No	2	16.7
<b>Total</b>	<b>12</b>	<b>100</b>

Source: Field survey

#### 4.1.5 Project Screening Process

The research work intended to find out whether before the selection of any project, those projects go through rigorous screening such as checks for strategic fit.

Table 5: Formal Project Screening Process

Category	Frequency	Percentage (%)
Yes	11	81.7
No	1	8.3
<b>Total</b>	<b>12</b>	<b>100</b>

Source: Field survey

The responses received from the participants was a clear indication that an official screening process is in place to help check for instance, a project's strategic suitability. 11 respondents acknowledged that formal screening process was critical in investment appraisal decisions. This is illustrated in Table 5 above.

#### 4.1.6 Cash Flow Generation Approach

The researcher wanted to find out the approach used in estimating cash flow for intended capital projects.

Respondents indicated that cash flow forecasts were generated using mostly historical data representing 50.0%. Whereas project detailed estimations and both past data and project detailed estimates were 3 each representing 25.0% each. This is shown in table 6.

Table 6: Cash Flow Forecast Generation

Category	Frequency	Percentage (%)
Historical data	6	50.0

Project specific estimates	3	25.0
Both	3	25.0
<b>Total</b>	<b>12</b>	<b>100.0</b>

Source: Field survey

#### 4.1.7 Cash Flow Valuation Methods Adopted

Respondents were given the option to indicate from a list on cash flow valuation methods used. They were task to indicate the non-discounted, discounted and advanced valuation methods commonly used in the organization.

Table 7: NDCF Methods

Category	Frequency	Percentage (%)
Payback	9	75.0
ARR	3	25.0
Other	0	0.0
<b>Total</b>	<b>12</b>	<b>100.0</b>

Source: Field survey

Examinees also indicated the non-discounted cash flow methods in use. 9 out of the 12 responses representing 75.0% indicated that the payback period was predominantly used as relatively to the ARR which accounted for 3 responses representing 25.0%.

Table 8: Discounted Valuation Methods



Category	Frequency	Percentage (%)
Net present value	10	83.4
IRR	1	8.3
Modified IRR	0	0.0
Profitability index	1	8.3
	0	0.0
<b>Total</b>	<b>12</b>	<b>100.0</b>

Source: Field survey

The NPV technique is the most extensively used discounted valuation technique in assessing a potential capital investment project accounting for 83.4%. This was followed by IRR and profitability index with both having 8.3% each.

Table 9: Advanced Valuation Methods

Category	Frequency	Percentage (%)
Monte carlo	0	0.0
Real options	3	25.0
Project portfolio management	9	75.0
<b>Total</b>	<b>12</b>	<b>100.0</b>

Source: Field survey

Examinees responded which advanced valuation methods are in use. 9 out of the 12 responses representing 75.0% indicated that project portfolio management was mostly used whereas Monte carlo simulation was not in use.

#### 4.1.8 Computer Software Analysis of Capital Projects

The study wanted to know if Zoomlion Ghana limited uses computer software in its capital project analysis.

Table 10: Computer Software Enabling Capital Project Analysis

Category	Frequency	Percentage (%)
Yes	9	81.8
No	2	18.2
<b>Total</b>	<b>11</b>	<b>100.0</b>

Source: Field survey

Based on the responses received, it can be concluded that there is a computer software enabling the examination of projects. Table 10 confirms this assertion with 81.8% of the responses. However, 1 respondent was silent about the existence of the computer software.

#### 4.1.9 Capital Budgeting effects on Profit

The study also sought to ascertain how profits have gone up as a result of capital budgeting.

Table 11 demonstrates that the participants acknowledged 21 – 40 as the range at which incomes have increased percentagewise. This denotes 7 out of 12 responses followed by 0 – 20% representing 25.0%. However, income has not gone up between 61 – 80% and 81 – 100%.

Table 11: Percentage Increase in Profits Due to Capital Budgeting

Category	Frequency	Percentage (%)
0 – 20	3	25.0
21 – 40	7	58.3

41 – 60	2	16.7
61 – 80	0	0.0
81 – 100	0	0.0
<b>Total</b>	<b>12</b>	<b>100.0</b>

Source: Field survey

#### 4.2 Managements' Commitment to Capital Budgeting

Analysis of the questionnaire showed that management of Zoomlion Ghana Ltd are committed to capital budgeting though there is non-existing capital budgeting segment to deal with investment appraisal. However, the finance and accounts departments are equipped with the necessary tools to adequately handle all capital investment projects. The finance department had 10 responses representing 83.3% with the remaining 2 responses representing 16.7% indicated that the accounts department was involved in capital decisions. This is clearly demonstrated in Figure 8.

In addition, as demonstrated in Table 7 there is an official ideal suggestion submission process. Majority (10) of the responses confirmed that capital project proposals were not carried out anyhow but rather goes through a formal laid-down process. Project screening is critical in a sense that it plays a key role in ensuring the success of undertaken of all capital projects. As depicted in Table 8, 91.7% of the respondents indicated “yes” to project screening. Furthermore, as shown in Figure 10, there is a computer software that aids management to analyse investment projects.

#### 4.3 Financial Performance in connection with Capital Budgeting Processes

Private waste management firms in Ghana and for that matter Zoomlion Ghana Ltd invest substantial funds in developmental projects such as the construction of recycling and composite plant, engineered landfill site, liquid waste treatment plant, procurement of trucks, waste bins, mobile composite plant and the like. These infrastructural developments were cited by respondents as capital projects that goes a long way to improving the company's performance financially.

As illustrated in Table 3, the firm's average capital project investment was valued at 1,000,001 – 5,000,000 Ghana cedis representing 41.7%. This was followed by 100,001 – 500,000 Ghana cedis representing 25.0%. In addition, capital budgeting practices have resulted in incomes going up between 21% – 40% by the company. Figure 13 is a representation of this conclusion. Thus, the relationship linking firm's funds budgeting and the company's monetary growth.

#### **4.4 Investment Appraisal Process appropriate to the Waste Management Industry**

According to Verma and Batra (2014) investment appraisal is characterised with following a systematic steps with a lot of tasks to be done at diverse stages (The answers obtained from the respondents in connection with the 16<sup>th</sup> question followed no particular order as the responses were inconsistent as suggested under Section 2.1.2. However, the following have been gathered after carefully examining the responses:

1. Identification of projects to be carried out by management. This, according to Burns and Walker, (2009) comprises planning strategically, managing risks and putting into words the idea suggestion.
2. Identified projects are then scrutinised to ascertain their feasibility using the payback and the NPV methods in addition to project specific estimates and historical data.



3. Management then decides either to consider or ignore a suggested capital projects.
4. The next stage is the implementation stage. Here, the carefully chosen capital investment project is executed as soon as funds are approved or accessible.
5. As the project progresses, measures are taken to control and monitor the project's progress.



## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.0 Introduction**

The chapter is concerned with the conclusion of the overall research work. It therefore summarizes the findings, conclusion, recommendations and suggestions for further research.

#### **5.1 Summary of Findings**

The objective of this study was to find out whether there was a connection between capital budgeting practices of private waste management firms in Ghana with particular reference to Zoomlion Ghana Ltd. and financial performance. This research considered looking the commitment of management to capital budgeting and whether through capital budgeting the company's financial performance is enhanced positively through increases in profitability.

The study found out that private waste management firms in Ghana with reference to Zoomlion Ghana Ltd. generates cash flow forecasts using both project-specific estimates and historical data, but historical data dominated. The study also found out that the duration it will take for a project to gain its initial funds invested was the payback period (NDCF) valuation method predominantly used followed by the ARR. Conversely, the NPV method was the (DCF) valuation method used. Evaluation of some projects were done taking into consideration project portfolio management which is an advanced valuation method. The implication is that Zoomlion Ghana Ltd. does not use just one valuation method but rather adopts multiple valuation methods in its capital budgeting decisions.

Furthermore, the study found out that there was no dedicated capital budgeting department. The finance unit was responsible for all capital projects. There was also an official idea submission procedure, and the organisation utilises a formal project selection process to ensure strategic suitability. The study found out that in addition to the DCF and NDCF valuation methods used to examine capital projects, there was also a tool or software that allows management to evaluate the available activities or projects.

On the average, the study found out that the firm's capital project investment was between GH¢1,000,001 and GH¢5,000,000. As a result of capital budgeting, profits have gone up by 21% - 40%. Notable difficulties that the organisation faces in its capital budgeting process were incorporating risk, adjusting for inflation and estimating cash flows. The study also found out that the construction of recycling and composite plant, engineered landfill site, liquid waste treatment plant, procurement of trucks, waste bins, mobile composite plant and so on goes a long way to increase profitability.

## **5.2 Conclusion**

The study was focused in assessing the consequences of monetary progression of capital budgeting concerning individually owned waste firms in Ghana. The significance of capital budgeting practices cannot be overemphasised as it is a sure means of ensuring the viability of a capital investment geared towards financial performance. The study showed that profitability of Zoomlion Ghana limited is considerably affected by the investment appraisal techniques. It can therefore be concluded that capital budgeting techniques brings about an upsurge in profitability. The study also found that though there was no dedicated capital budgeting department, yet all

proposed projects were subjected to rigorous scrutiny to ensure that they were a success. It can again be concluded that such practices aided in the increase in profitability.

The study was able to conclude that the manner in which funds are been used by entities are crucial to ensure investors interests achieved as there was a positive correlation between capital budgeting and profitability. In order to ensure the reduction of capital wastage, measures such as strategic planning, formal data gathering process and a computer software that makes it easier for the evaluation of all capital projects are put in place.

### **5.3 Recommendations**

The findings showed that capital budgeting practices play important roles in ensuring the profitability of the entity. In order for management to be in absolute control of investment decisions, the following are recommended:

Firstly, though Table 11 demonstrates that the participants acknowledged 21% – 40% as the range at which incomes have increased percentagewise, more can be done. It is therefore recommended that management as a matter of urgency institute a dedicated capital budgeting department and engage the services of professionals with high level expertise to offer the capacity and readiness to espouse new and advanced capital budgeting practices with the aim to widening the percentage range. The department should also be equipped with modern technology and all other necessary tools and equipment to succeed. In addition, management should formally institute a knowledge management system under the supervision of the capital budgeting department. This is intended



to encourage all staff to submit suggestions with respect to capital projects that can generate considerable returns.

It was realised that Zoomlion Ghana Limited uses only project portfolio management as an advanced valuation method. Hence, it is recommended that in order for management to perform better financially, management uses multiple tools such as Monte Carlo simulation, decision trees, and Real Options concurrently to evaluate investment projects to make effective decisions on capital investment strategies. According to Miller and Waller (2003) and Childs and Triantis (1999) this would be in agreement with the view that management utilizes a number of tools to focus on varied facet aspects of capital investing resolutions.

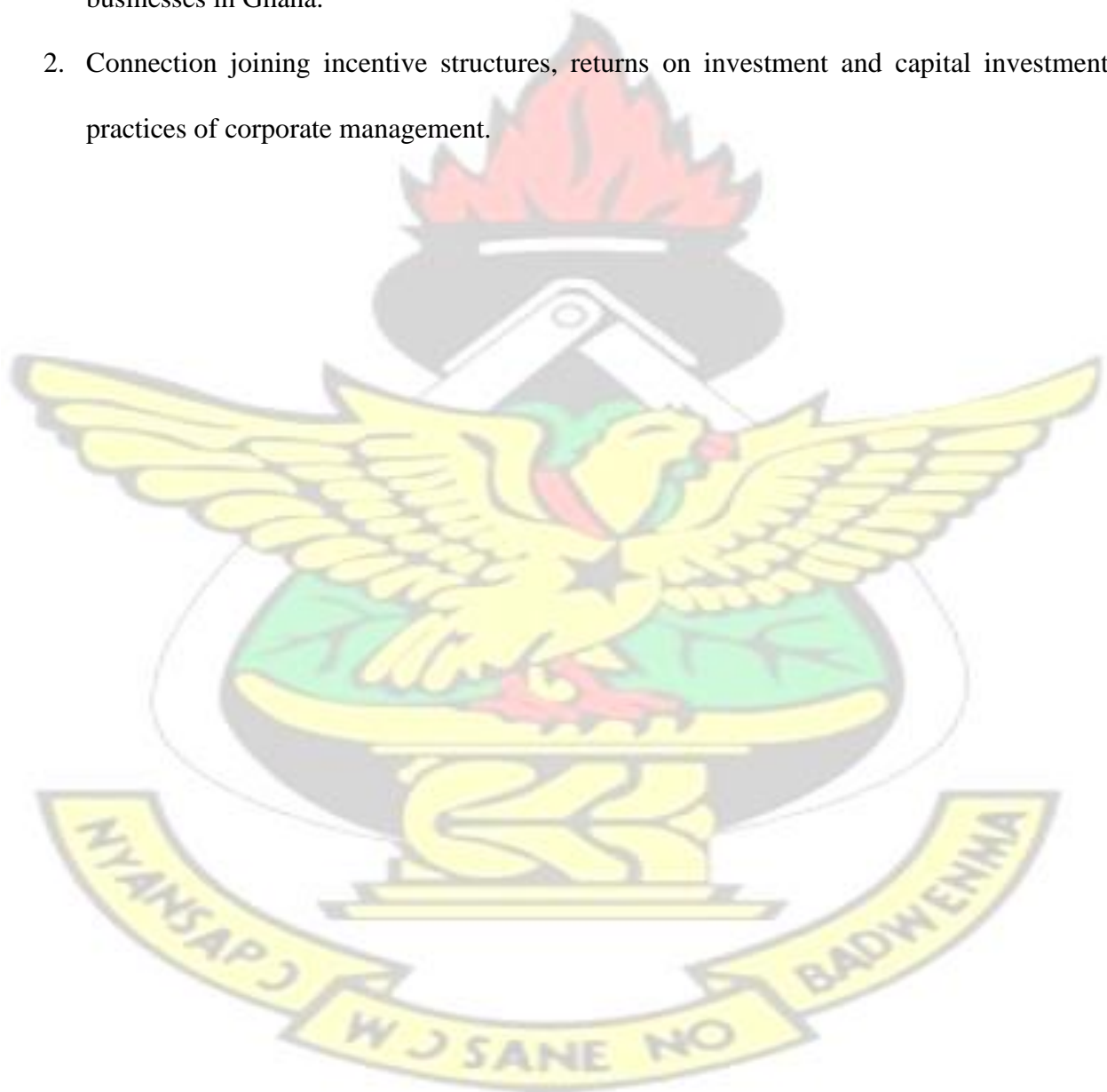
One of the ways to deal with the issue of difficulty in incorporating risk as identified in the study is to use scenario analysis to manage project risk to capture the erraticism of inflows of cash. Scenario analysis, according to Gitman and Zutter (2013) is a behavioural technique that considers many likely alternative results to get a sense of the erraticism of returns. This approach is usually valuable in obtaining a feel for the erraticism of returns to respond to changes in a significant outcome (that is, profitability).

Generally, management of Zoomlion Ghana Ltd should develop training programmes on regular basis as possible with respect to developments in capital budgeting for their managerial personnel, not forgetting the board members, aimed at improving and advancing their knowledge and decision skills with capital investments.

#### 5.4 Suggestions for Further Studies

Attempts were made to assess the connexion linking capital budgeting activities and monetary progression of individually owned waste management firms in Ghana. The researcher recommends further research to be conducted to cover areas such as:

1. Relative examination of capital budgeting activities in both public and privately owned businesses in Ghana.
2. Connection joining incentive structures, returns on investment and capital investment practices of corporate management.



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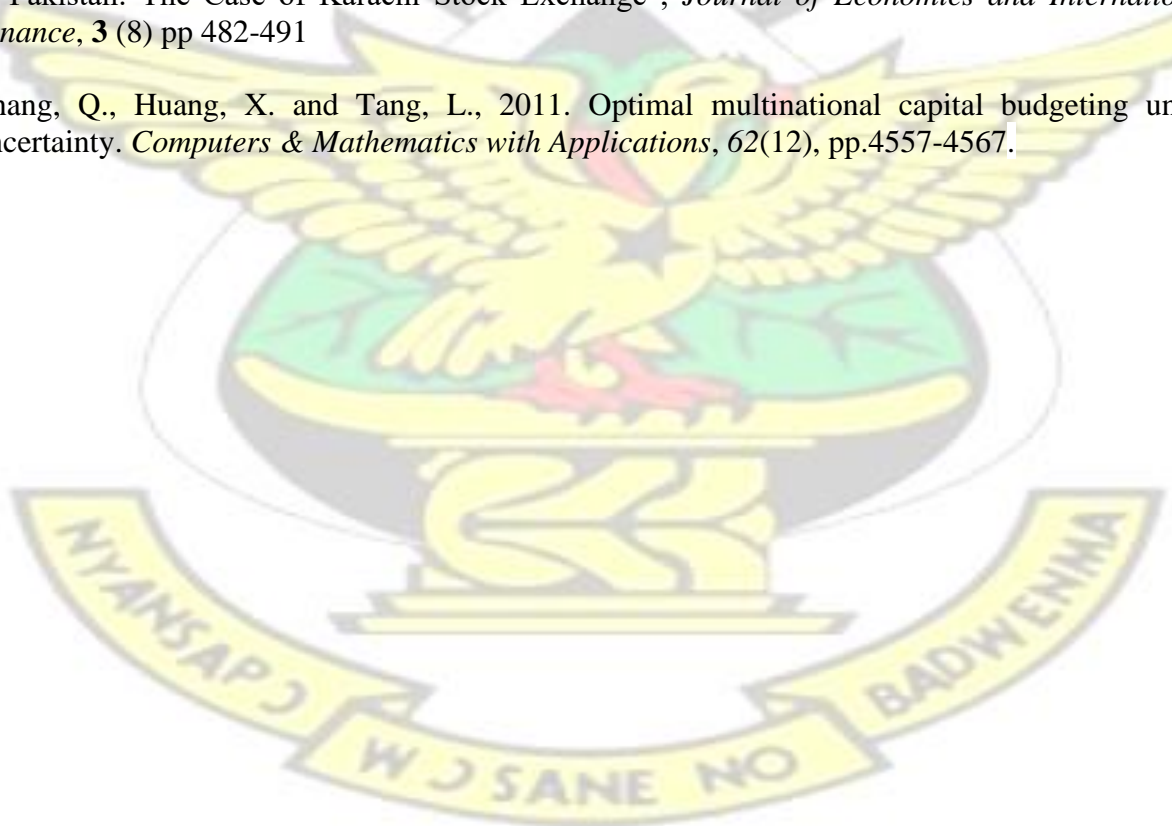
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## APPENDIX: SURVEY QUESTIONNAIRE

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY (KNUST)**  
**INSTITUTE OF DISTANCE LEARNING (IDL)**  
**FACULTY OF BUSINESS**  
**QUESTIONNAIRE**

Dear Respondent,

I am a student from the Kwame Nkrumah University of Science and Technology (KNUST), and as a partial fulfilment of my Master of Science Degree in Accounting and Finance; I am undertaking a Research on “financial performance implication of capital budgeting practices in private waste management companies. A case study of Zoomlion Ghana Limited”. Please be assured that any information provided shall be kept confidential. Thank you for taking time to help with this research.

Kindly answer the following questions. Please tick (X) the box(es) where applicable.

1. How long have you been working with Zoomlion Ghana Ltd?  
☐ Less than 1 year  
☐ 1 – 5 years  
☐ 6 – 10 years  
☐ Over 10 years
2. Does your organisation have a formal capital budgeting department?  
☐ Yes  
☐ No
3. If the answer is NO, which department is involved with capital budgeting?  
-----
4. Kindly select your firm’s average capital project investment (such as recycling plant, vehicles, software etc.) value (GH¢).  
☐ 0 – 100,000  
☐ 100,001 – 500,000  
☐ 500,001 – 1,000,000  
☐ 1,000,001 – 5,000,000  
☐ Above 5,000,000
5. Is there a formal idea proposal submission process?  
☐ Yes  
☐ No
6. Does your organisation utilise a formal project screening process e.g. check for strategic fit?  
☐ Yes  
☐ No
7. Are cash flow forecasts generated using historical data or project specific estimates?



- ☐ ] Historical data
- ☐ ] Project specific estimates
- ☐ ] Both

8. Which non-discounted cash flow methods are used?

- ☐ ] Payback period
- ☐ ] Accounting rate of return
- ☐ ] Other (specify).....

9. Which discounted valuation methods are used?

- ☐ ] Net present value
- ☐ ] Internal rate of return
- ☐ ] Modified internal rate of return
- ☐ ] Profitability index
- ☐ ] Other (specify).....

10. Apart from the discounted and non-discounted valuation methods, which of the following advanced valuation techniques are used?

- ☐ ] Monte Carlo simulation
- ☐ ] Real options
- ☐ ] Project portfolio management to value investment roadmap options

11. Is there computer software that enable the analysis of all capital projects?

- ☐ ] Yes
- ☐ ] No

12. Kindly list capital projects that are likely to improve financial performance in your firm.

- A) -----
- B) -----
- C) -----
- D) -----
- E) -----

13. By how much have profits gone up percentagewise because of capital budgeting?

- ☐ ] 0 – 20
- ☐ ] 21 – 40
- ☐ ] 41 – 60
- ☐ ] 61 – 80
- ☐ ] 81 – 100

14. What difficulties does your organisation face in its capital budgeting process?

- ☐ ] Estimating cash flows
- ☐ ] Determining discount rate
- ☐ ] Incorporating risk
- ☐ ] Adjusting for inflation

[       ] Others (specify).....

15. Which one of the difficulties selected do you consider most challenging?.....

16. What capital budgeting process is suitable to the waste management sector? Kindly list them.

A) -----

B) -----

C) -----

D) -----

E) -----

**Thank you for your cooperation.**

