

**FACTORS THAT INFLUENCE FINANCIAL PERFORMANCE OF PRIVATE  
SOLID WASTE MANAGEMENT COMPANIES IN NAIROBI COUNTY**

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## **DECLARATION**

### **Student Declaration**

This research project is my original work and has never been presented for a Degree in any other University or institution for any academic award.

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## **DEDICATION**

I dedicate this study to my dear family members and friends for all the support they gave me all the time as I prepared and worked on this project.

## ABSTRACT

Company's performance can be evaluated in three dimensions. The first dimension is company's productivity, or processing inputs into outputs efficiently. The second is profitability dimension, or the level of which company's earnings are bigger than its cost. The third dimension is market premium, or the level at which company's market value exceeds its book value. Return on assets (ROA) determines an organisation's efficiency in ability to make use of its assets and return on equity (ROE) reveals the return investors expect to earn for their investments and return on sales (ROS) reveals how much a company earns in reaction to its sales. The advantages of financial measures are the simplicity of calculation and also that their definitions are widely agreed. This was done by answering the question: what are the factors influencing financial performance of Private Solid Waste Management companies in Nairobi County?

A descriptive research design was used to analyze the factors that influence financial performance of Private Solid Waste Management companies in Nairobi County. The population of interest in this study constituted all the 56 private Solid Waste Management operators registered in Nairobi County for the period of three years from 2011 to 2013. Secondary financial data sources was used for the study, where annual financial reports of each firm was used over the three year period where profitability was extracted and used as a measure of financial performance.

The findings showed that leverage is statistically significant at 5% level of significance in explaining the variation in financial performance of private waste management company in Nairobi County. A unit increase in leverage ratio will lead to a unit decrease in financial performance of solid waste management company in Kenya. Liquidity ratio is statistically significant in influencing the variation in the profitability of the solid waste management companies. A unit increase in liquidity ratio will lead to high units increase in financial performance of solid waste management companies in Nairobi County. Regression coefficient of the size of the company is positively and significantly related to the financial performance of solid waste management companies. A unit increase in the company size will lead to positive units increase in the financial performance of the waste management company.

The study concludes that financial performance of private solid waste companies in Nairobi County is influenced by leverage, liquidity, age and size of these companies. The study recommends that since the ratio of debt-equity has implications on the shareholder's dividends and risk hence affecting the cost of capital and leverage position of the company, solid waste management companies should reduce debt financing of the companies since companies that are highly leveraged may be at risk of bankruptcy if they are unable to make payments on their debt; they may also be unable to find lenders in the future. Solid waste management companies should also increase their liquid asset base so as to increase the ability of the business to meet financial obligations on time. Solid waste management companies should use an investment fund as liquid assets to finance its activities. Higher liquidity allows an investment fund to deal with unexpected contingencies and to cope with its obligations during periods of low earnings. Larger and mature solid waste management companies are also known to have better and predictable financial performance.

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## **LIST OF ACRONYMS**

|             |          |   |
|-------------|----------|---|
| <b>CBD</b>  | <b>:</b> | <b>Central Business District</b>                |
| <b>CBO</b>  | <b>:</b> | <b>Community Based organization</b>             |
| <b>GoK</b>  | <b>:</b> | <b>Government of Kenya</b>                      |
| <b>KER</b>  | <b>:</b> | <b>Kenya Economic Review</b>                    |
| <b>LG</b>   | <b>:</b> | <b>Local Government</b>                         |
| <b>NCC</b>  | <b>:</b> | <b>Nairobi City Council</b>                     |
| <b>NEMA</b> | <b>:</b> | <b>National Environment Management Agency</b>   |
| <b>NGO</b>  | <b>:</b> | <b>Non-Governmental Organization</b>            |
| <b>PPP</b>  | <b>:</b> | <b>Public Private Partnership</b>               |
| <b>RAs</b>  | <b>:</b> | <b>Residential Associates</b>                   |
| <b>ROA</b>  | <b>:</b> | <b>Return on Assets</b>                         |
| <b>ROE</b>  | <b>:</b> | <b>Return on Equity</b>                         |
| <b>ROS</b>  | <b>:</b> | <b>Return on Sales</b>                          |
| <b>SPSS</b> | <b>:</b> | <b>Statistical Packages for Social Sciences</b> |
| <b>SWM</b>  | <b>:</b> | <b>Solid Waste Management</b>                   |
| <b>UESP</b> | <b>:</b> | <b>Urban Environmental Sanitation Project</b>   |

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the Study

Almajali et al (2012) argues that there are various measures of financial performance. For instance return on sales reveals how much a company earns in relation to its sales, return on assets explain a firm's ability to make use of its assets and return on equity reveals what return investors take for their investments. Company's performance can be evaluated in three dimensions. The first dimension is company's productivity, or processing inputs into outputs efficiently. The second is profitability dimension, or the level of which company's earnings are bigger than its cost.

The third dimension is market premium, or the level at which company's market value exceeds its book value (Walker, 2001). Return on assets (ROA) determines an organisation's efficiency in ability to make use of its assets and return on equity (ROE) reveals the return investors expect to earn for their investments and return on sales (ROS) reveals how much a company earns in reaction to its sales. The advantages of financial measures are the simplicity of calculation and also that their definitions are widely agreed.

Traditionally, the success of a company has been evaluated by the use of financial measure (Tangen, 20023). Four useful measures of profitability are the rate of return on assets (ROA), the rate of return on equity (ROE) operating profit margin and net income (Hansen and Mowen, 2005).

##### 1.1.1 Leverage

In the quest to optimize their objective, which hinges primarily on quantifiable performance, financial managers have adopted various capital structures as a means to that goal. A firm can finance its investment by debt and/or equity. The use of fixed-charged funds, such as debt and preference capital along with the owner's equity in the capital structure is described as financial leverage or gearing (Dare and Sola, 2010).

Leverage refers to the proportion of debt and equity in the capital structure of a firm. The financing or leverage decision is a significant managerial decision because it influences the shareholder's return and risk and the market value of the firm. The ratio of debt-equity has implications for the shareholder's dividends and risk, this affect the cost of the capital and the market value of the firm (Pandey, 2007).

### **1.1.2 Liquidity**

Liquidity measures the ability of the business to meet financial obligations as they fall due, without disrupting the normal, ongoing operations of the business. Liquidity can be analyzed both structurally and operationally. Structural liquidity refers to balance sheet measures of the relationships between assets and liabilities and operational liquidity refers to cash flow measures. Solvency measures the amount of borrowed capital used by the business relative to the amount of owner's equity capital invested in the business.

In other words, solvency measures provide an indication of the business' ability to repay all indebtedness if all its assets were sold. Solvency measures also provide an indication of the business' ability to withstand risks by providing information about the operation's ability to continue operating after a major financial adversity (Harrington and Wilson, 1989).

### **1.1.3 Company Age**

Several earlier studies (Batra, 1999; Lumpkin and Dess, 1999) argued that firm age has an influence on its performance (Sorensen and Stuart, 2000) argued that organisational inertia operating in old firms tends to make them inflexible and unable to appreciate changes in the environment. Newer and smaller firms, as a result, take away market share in spite of disadvantages like lack of capital, brand names and corporate reputation with older firms (Kakani, Saha and Reddy, 2001).

### **1.1.4 Company Size**

Previous studies in finance have shown that company size can predict the future stock price (Simerly and Li, 2000). For instance, Hvide and These (2007) in their study concluded that larger firms have better financial performance. Flamini et al (2009) suggested that bigger firms are more competitive than smaller firms in harnessing economies of scale in transactions and enjoy a higher level of profits. Athanasoglou et al (2005) assert that increase in company size increases

the performance of the bank. Almajali et al (2012) argued that the size of the firm can affect its financial performance. However, for firms that become exceptionally large, the effect of size could be negative due to bureaucratic and other reasons (Yuqi, 2007).

### **1.1.5 Financial Performance**

Literature usually distinguishes between two types of firm performance, financial or economic performance and innovative performance. Financial or economic performance is often expressed in terms of growth of sales, turnover, employment or stock prices (Havnes and Senneseth, 2001), whereas innovative performance is generally expressed in terms of expenditures, patents, percentages of innovative sales, or self – reported (results of) innovations (Oerlemans et al, 2001; Hagedoorn and Cloudt, 2003). Although both types of performance are often inter-related (Damanpou and Evan, 1984), the literature often uses both types of performance as separate concepts or only focuses on one or two (Knoben and Oerlemans, 2006).

Performance is the outcome of all of the organisation's operations and strategies (Wheelen and Hunger, 2002). Measuring performance accurately is critical for the accounting purposes and remains a central concern for most organisations. Performance measurement systems provide the foundation to develop strategic plans, assess an organisation's completion objectives; and remunerate manager (Ittner and Larcker, 1998).

Although assessment of performance is the past literature is still very important, it is also complicated (Pont and Shaw, 2003). While consensual measurement of performance promotes scholarly investigations and can clarify managerial decisions, managers have not been able to find clear, current and reliable measures of performance on which marketing merit could be judged. Two approaches have been adopted in the literature to measure financial performance. The first subject measures the performance of forms based on their own evaluation and expectations or comparison with their competitors, the second is objective, based on the absolute measure of performance such as financial ratios (Appiah- Adu, 1998).

Finance is always being disregarded in financial decision making since it involves investment and financing in the short-term period. Further, it also acts as a restraint in financial performance, since it does not contribute to return on equity (Refuse, 1996). A well designed and implemented

financial management is expected to contribute positively to the creation of a firm's value (Padachi, 2006).

Dilemma in financial management is to achieve desired trade-off between liquidity, solvency and profitability (Lazaridis et al, 2007). Management of working capital in terms of liquidity and profitability management is essential for sound financial recital as it has a direct impact on profitability of the company (Rajesh Ramana and Reddy, 2011). The crucial part in managing working capital is maintaining its liquidity in day to day operation to ensure its smooth running and meets its obligations (Eljelly, 2004). Ultimately goal of profitability can be achieved by efficient use of resources. Financial performance is concerned with maximisation of shareholders or owners wealth (Panwala, 2009). It can be attained through financial performance analysis. Financial performance is a measure of a firm's overall financial health over a given period of time.

#### **1.1.6 Relationship between Selected Factors and Financial Performance**

Liquidity refers to the degree to which debt obligations coming due in the next twelve months can be paid from cash or assets that was turned into cash. It is usually measured by the current assets to current liabilities (current ratio). It shows the ability to convert an asset to cash quickly and reflects the ability of the firm to manage working capital when kept at normal levels. An investment fund can use liquid assets to finance its activities and investments when external finance is not available or it is too costly. On the other hand, higher liquidity would allow an investment fund to deal with unexpected contingencies and to cope with its obligations during periods of low earnings (Liargovas and Skandalis, 2008).

An unlevered firm is an all-equity firm, whereas a levered firm is made up of ownership equity and debt. Financial leverage takes the form of a loan or other borrowing (debt), the proceeds of which are (re)invested with the intent to earn a greater rate of return than the cost of interest. If the firm's marginal rate of return on asset (ROA) is higher than the rate of interest payable on the loan, then its overall return on equity (ROE) was higher than if it did not borrow (Laurent, 2005). On the other hand, if the firm's return on assets (ROA) is lower than the interest rate, then its return on equity (ROE) was lower than if it did not borrow. Leverage allows a greater potential returns to the investor than otherwise would have been available, but the potential loss is also

greater: if the investment becomes worthless, the loan principal and all accrued interest on the loan still need to be repaid (Andy et al, 2002). This constitutes financial risk (Pandey, 2005).

Debt leverage is measured by the ratio of total debt to equity (debt/equity ratio). It shows the degree to which a business is utilising borrowed money. Companies that are highly leveraged may be at risk of bankruptcy if they are unable to make payments on their debt; they may also be unable to find lenders in the future. Leverage is not always bad; however, it can increase the shareholder's return on their investments and make good use of the tax advantages associated with borrowing.

The size of the firm affects its financial performance in many ways. Large firms can exploit economies of scale and scope and thus being more efficient compared to small firms. In addition, small firms may have less power than large firms; hence they may find it difficult to compete with the large firms particularly in the highly competitive markets. On the other hand, as firms become larger, they might suffer from inefficiencies, leading to inferior financial performance. Theory, therefore, is equivocal on the precise relationship between size and performance (Majumdar, 1997).

Firm age influencing financial performance in that older firms are more experienced, have enjoyed the benefits of learning, are not prone to the liabilities of newness, and can, therefore, enjoy superior performance. Older firms may also benefit from reputation effects, which allow them earn higher margin on sales. On the other hand, older firms are prone to inertia, and the bureaucratic ossification that goes along with age; they might have developed routines, which are out of touch with changes in market conditions, in which case an inverse relationship between age and profitability or growth can be observed (Liargovas and Skandalis, 2008).

### **1.1.7 Solid Waste Management Companies in Kenya**

Kenya's capital city, Nairobi, currently has a population of 3.3 million people according to a recent population census (GoK Census, 2010). Located along the equator at 6000 feet above sea level, it covers an area of 696 km<sup>2</sup>, thus practically it is the smallest county in Kenya but the most populated. There is a general disparity of incomes as well as population densities in Nairobi

with the people living in the western suburbs being generally wealthier while the lower and middle-income elements of society dominate the eastern suburbs. The poor economic growth of 1.1 percent in 1993 and less than 2 percent in 2001 resulted in an increase in the level of poverty that stood at 56 percent in 2001 (Rotich, 2005), the economic growth rate has gone up recently to 4.7 percent in 2013 (KER, 2013). Rural urban migrations resulted in unplanned settlements in the peri-urban areas accommodating about 60 percent of the urban population on only 5 percent urban land area.

Consequently, urban centres have experienced comparatively high growth rates with little infrastructure expansion to match it. This urbanization and accompanying industrialization in a state of overstretched infrastructure is one of the major challenges facing the Kenyan government. Urbanization in Kenya has led to social, economic and environmental problems, some in overwhelming proportions. These include but not limited to lack of access to clean drinking water, illegal waste dumping and improper disposal of solid and hazardous wastes (Mutai & Njoroge, 2012).

The current practice of collecting, processing and disposing solid wastes is also considered to be least efficient in most developing countries. The typical problems are - low collection coverage and irregular collection services, crude open dumping and burning without air and water pollution controls, the breeding of flies and pests in the open dumpsites, and the handling and control of informal waste picking or scavenging activities (Bartone, 1995). Although some cities do spend significant portions of their revenues on waste management, they are often unable to keep pace with the scope of the problem (Bartone, 2000). Senkoro (2003) indicated that for many African countries, only less than 30% of the urban population has access to proper and regular garbage collection.

Solid waste management can only be ranked among the non-excludable goods as it is difficult to be protected by the general market forces. One way of managing non-excludable goods or services is either by the internalization of costs (by levying charges for the use of the services) or by following a command and control policy or a combination of both. Government intervention is necessary for this. The rationality of the government's intervention can be judged when the costs of producing the good or service decline as more of the good or service is produced and



when production or use of the good or service results in “externalities” such as environmental pollution (Macauley and Walls, 1995; Jenkins, 1993). Thus, the major problem for solid waste management is the internalization of costs of waste disposal.

As far as solid waste collection is concerned, most local governments do not have official policies towards the privatisation of these services and actual support to the idea is largely confined to an occasional experiment (UNCHS, 1998). Nevertheless, numerous small and large firms have sprung up trying to fill the gap left by the dismal performance of most public cleansing departments. They are attending to the needs of the upper and middle-income groups who can afford to pay commercial prices (Werna, 1998). However, this spontaneous privatisation takes place without any institutional or legal regulation. Similarly, waste disposal in low-income areas, especially slums and squatter areas, largely depends on voluntary efforts to burn it or bring it to the nearest formal collection point.

There are over 120 private companies licensed by NCC and more than 140 informal private companies that are estimated to be participating in waste management in Kenya (Ngau & Kahiu, 2009). An analysis of total costs incurred by various actors and amount of waste collected per month showed CBOs with the least cost of operation (at zero waste collection) at Kshs 7,355 as compared to private companies which showed over 5 times this amount Kshs 40,608 and NCC over 200 times Kshs 1,617,462. Further, the CBOs had the lowest cost per tonne of waste collected as Kshs. 865 compared to other operators who charged almost twice this amount. These figures suggest that solid waste management is very expensive and CBOs are the cheapest operators of solid waste (Mwangi, 2007). Therefore, CBOs should be left as the waste operators especially in the low-income areas where the residents are unable to pay a lot of money for waste management due to their low operating costs. Due to their relatively high operation costs, the private companies are more suited to operate in the high-income areas and CBD where the residents or the owners of buildings are able to pay for the services.

However, private enterprises are primarily interested in earning a return on their investment and may not be efficient due to the complexity of their operations outlay especially when proper coordination and SWM models are lacking. Despite the sprouting of private companies, CBOs, residential associates (RAs) and other actors currently involved in solid waste management in

Nairobi, the models of operations of these actors are not well understood. Effective coordination among these actors is absent and regulation of the private companies by the County government is only beginning to emerge.

## **1.2 Research Problem**

Waste management has been a persistent headache for city planners and environmentalists globally for the last four decades. The situation has been observed to be worse off in the developing countries with burgeon overpopulations, such as that in Nairobi where average population per square kilometre is 4,742, and gets far worse in the slums where the population density is 36,253.8/km<sup>2</sup>. The waste produced is therefore in very large quantities and management and handling of the same is quite a hard task bestowed upon the newly created county government. This is expected to get worse since the 3.3 million population density in Nairobi as at 2010 is estimated to be growing at the rate of 7% per annum.

Mwangi (2007) observes that the sheer volume of waste does not actually constitute the problem but rather the inability of governments and waste-disposal firms to keep up with it. The situation in Nairobi pertinently illustrates this. Although between 1977 and 1983 the population of this city was increasing at an estimated annual rate of at least 6%, the amount of refuse collected fell from 202,229 tonnes in 1977 to 159,974 tonnes in 1983 — a decline of 21% over 6 years.

Thus, over the late 1970s and early 1980s, the municipal authority in charge of waste was collecting, on average, almost 10% less refuse per capita every year (Stren and White, 1989). A similar situation was observed in Malindi (a secondary town in Kenya), where increasing population is a major constraint. In 1991, in Malindi, an estimated 36,000 tonnes of solid waste was produced, but only 7,300 tonnes was transported to dumping sites by the municipal collection service (Otieno, 1992). This situation has persisted to date with more problems cropping up where dumpsites are used beyond their capacity.

Arnold and Inge (2010) posit that this inability to manage urban solid waste consists of failures in the following areas: inadequate services; inadequate financing; inadequate environmental controls; poor institutional structure; inadequate understanding of complex systems; and, inadequate sanitation. These are issues that PPPs are meant to be solving in their integration in

the governance system. However, even though there has been adoption of public private partnerships in the handling of solid waste, most of the private actors are informally involved and very little has been done by Nairobi County and NEMA to formalize their engagement. Monyoncho (2013) observes that entrepreneurs think the SWM ventures are highly profitable and many would like a chance to venture into it, but the current restrictions by the County governments has been a huge barrier to entry. Despite these setbacks, there has been however several entrants who are highly successful in the sector.

Waste management has enjoyed rich interests from the research community both locally and globally since waste became a global nightmare in the 80s. Many researchers such as: Bartone, (1995); Schübeler, Karl and Jurg, (1996); Pierre, (1998); Werna, (1998); Devas, (1999); Baud and Post, (2003); Senkoro (2003); Ikiara, et al. (2004); and, Chan (2008) among others have deeply looked at solid waste management.

Locally, a myriad of studies have been done on the SWM issue such as those done by Otieno (1992), Mwangi (2007), Ngau & Kahiu, (2009), Afullo and Odhiambo, (2009), Muniafu & Otiato 2010), and Monyoncho (2013) among others. However, all these studies have been directed in the operational side of the waste management discourse and very little have been done on the involvement of the private actors in the waste management jig.

This study hopes to fill this research gap by analysing these private solid waste management companies in Nairobi County and more so their financial performance so as to evaluate the managerial performance, corporate efficiency, financial strength and weakness and credit worthiness of the companies, given the environment they operate in. This was done by answering the question: What are the factors influencing private Solid Waste management companies in Nairobi County?

### **1.3 Objective of the Study**

The objective of this study is to analyse the relationship of the selected factors influencing financial performance and the Solid Waste Management companies in Nairobi County.

#### **1.4 Value of the Study**

The study findings will be important to: investors and owners of Solid Waste Management companies, government policy makers in the Nairobi County and National Environmental Management Authority, and academicians in many ways. Commerce and industry operate within a legal framework. Companies, the drivers of commerce and industry, formulate their own policies (within the legal framework), to ensure their corporate success yet problems are experienced from time to time. Bankruptcies occur and it may be a mystery why some of them are so sudden.

Honsberger (1979) as quoted by Naidoo (2006:2) comes to mind: “We tend to forget that bankruptcy does not strike a bolt of lightning and that there are, in fact, many indicators or predictors of its approach”. Despite the legal framework, as well as the continuous steps that are taken by authorities to tighten the financial reporting mechanisms, the problem persists. The research will help policymakers to assess the factors that influence financial soundness of SWM companies in Nairobi and know which policies to formulate. It also informs them when making future plans in the SWM industry.

It will assist shareholders, investors and SWM company owners in exploring the factors influencing performance of the companies, identifying any gaps, and making recommendations, it may assist in opening avenues for creativity towards maintaining and sustaining the business activity which will inform them when making future project plans. The study will measure the firm’s liquidity, profitability and other indicators that the business is conducted in a rational and normal way; ensuring enough returns to the shareholder to maintain at least its market value hence assessing investment viability.

The study findings will assist NEMA to formulate guidelines that will ensure efficiency of the Solid Waste Management in the industry. Academicians on the other hand will be provided with information on the financial performance of SWM companies in Nairobi. It will also provide an insight into and act as a base for further research in SWM.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

This chapter contains the literature review of the study. The chapter discusses the theoretical review that covers theories related to financial performance. The study covers an empirical review on the factors influencing financial performance of firms; a summary of literature review culminates the chapter for the study.

#### 2.2 Theoretical Review

Advances in theory and methodology on financial performance have been noted over the years with more and more improved theories coming up. Various theoretical backings have influenced decision makers in the analysis of factors influencing financial performance of companies. This study has looked at some of these theories and has come up with the following views.

##### 2.2.1 Open Systems Theory

Open systems theory provides a framework to study partnership as a social system with sub-systems that interact with each other and with the environment (Katz and Kahn 1978). The existing partnership models are open systems model that describes a system as a set of interacting elements or sub-systems that make up an integrated completely, forming part of larger systems. Because open systems theory deals with organizations in general and across all sectors, it is applicable to stakeholders in solid waste management and other involved organizations.

The historical roots of open systems theory lie with Bartalanffy's (1976) general systems theory that describes dynamic, recurring patterns in biological systems. Open systems theory adapted this to the study of organizations, proposing that systems maintain themselves through contact with the environment. An open system is defined as a coalition of shifting interest groups, strongly influenced by environmental factors that develop goals by negotiating its structure, activities, and outcomes.

Open systems theory argues that organizations are social systems made up of a structuring of events or processes. Social systems are anchored in attitudes, beliefs, and motivations of humans, representing patterns of relationships characterized by variability in objectives that change over time and by control mechanisms to decrease variability of human behaviour in the interest of stability (Katz and Kahn, 1978). The theory stresses complexity and variability of parts, looseness of connections, amorphous system boundaries, and attention to process, not structure (Scott, 2004). Properties of open systems include inputs, transformation processes, and outputs (Katz and Kahn, 1978). Inputs represent importation of energy and the influence of the environment on the system. These inputs are transformed into outputs that are returned to and influence the environment.

This import and export process represents a cycle of events that decreases the natural tendency of a system toward entropy. Positive and negative feedback loops lead to dynamic homeostasis, where positive feedback allows an organization to respond to changes in the environment and negative feedback serves to correct deviations, opposing change and maintaining stability (Ashmos and Huber, 2006). The concept of equifinality allows that a final state can be reached from different initial conditions and by multiple paths. Organizations are controlled through rules, regulations and norms in their environment.

Therefore, organizational functioning cannot be understood in isolation since any system is a sub-system of a larger system. Open systems analysis seeks to define the boundaries of a system and the elements making up the system, their interactions, and the connections between them. Starting with the system of interest, analysis must identify the larger system in which the system of interest is embedded, as well as the sub-systems (Katz and Kahn, 1978).

This framework is useful in describing the component sub-systems of partnership that are required for effective functioning. The utility of the open systems approach is that importance placed on the environment calls for scanning for changes and bridging boundaries and interdependencies. The open systems approach allows identification and elimination of potential dysfunctions (Morgan, 2008). The explanatory power of open systems theory is however limited, given that it provides a framework to describe and classify organizations within their environments (Ashmos and Huber, 2006).

Open systems theory views organizations only as physical entities, ignoring the importance of meaning in any human system (Flood, 2008). However, it offers attention to interactions among interest groups or stakeholders also limits its usefulness (Harrison and Shiron, 2005). Thus, the theory informs the study in relation to external factors which affect the firm hence influencing its financial performance. In the SWM industry, the county government offers rules, regulations and norms in the environment while the private sector players offer the requisite services at a cost.

### **2.2.2 Institutional Theory**

Institutional theory builds on the open systems perspective by adding that the environment is not only a stock of resources and technical information, but also a supplier of legitimacy and meaning (Thompson, 1967). Early institutional theory argued that organizations reflect rules and structures in their external environments, rather than result from internal, rational decision making processes. Organizations take on patterns of functioning and of meaning systems from those organizations in their environment that influence them, providing them legitimacy and stability where they accommodate the requirements of these influences. Organizations are thus more about the process of organizing than about the structure of organization (Weick, 2002). The environment is a source of information and a stock of resources. Most institutional research focuses on why organizations are structured as they are and on the isomorphism between organizations that this process produces.

Additionally, the theory provides some understanding of why organizations are interested in collaboration because it can help organizations adjust more efficiently and effectively to increasing complexity (Hatch, 2006). An organization's structural complexity increases as the environment becomes more complex. With increases in uncertainty, organizations increase their formalization and control processes. Increasing complexity and uncertainty leads organizations to become more interdependent, looking for ways to coordinate (Scott, 2004).

The institutional model consists of four elements: 1) macro processes within power and social structures (the nation-state, professions, culture, and the economy) affect or control development of the environment of organizing; 2) the institutional environment is made up of a set of organizations with identities, structures, and activities that influence a particular organization; 3) causal connections (or types of pressure) between institutional elements and organizational

identity, structure, and activities; 4) sources of influence on organizations (e.g., public regulation by nation state, scientific or professional norms and guidelines) (Meyer, 2007). Within institutional theory, two types of organization exist—technical and institutional. In technical organizations, success depends on outputs and profit. In institutional organizations, on the other hand, success depends on acceptance of society’s norms and values (Powell and DiMaggio, 2003). Understanding an organization’s ability to participate in a community through an examination of these elements is an important part of this research.

### **2.2.3 Stakeholder Theory**

Stakeholder theory is managerial in that it reflects and directs how managers operate rather than primarily addressing management theorists and economists. The focus of stakeholder theory is articulated in two core questions (Freeman, 1994). First, it asks, what is the purpose of the firm? This encourages managers to articulate the shared sense of the value they create, and what brings its core stakeholders together. This propels the firm forward and allows it to generate outstanding performance, determined both in terms of its purpose and marketplace financial metrics. Second, stakeholder theory asks, what responsibility does management have to stakeholders?

This pushes managers to articulate how they want to do business—specifically, what kinds of relationships they want and need to create with their stakeholders to deliver on their purpose. Today’s economic realities underscore the fundamental reality we suggest is at the core of stakeholder theory: Economic value is created by people who voluntarily come together and cooperate to improve everyone’s circumstance. Managers must develop relationships, inspire their stakeholders, and create communities where everyone strives to give their best to deliver the value the firm promises. Certainly shareholders are an important constituent and profits are a critical feature of this activity, but concern for profits is the result rather than the driver in the process of value creation.

Many firms have developed and run their businesses in terms highly consistent with stakeholder theory. Firms such as J&J, eBay, Google, Lincoln Electric, AES, and the companies featured in *Built to Last* and *Good to Great* (Collins, 2001) provide compelling examples of how managers understand the core insights of stakeholder theory and use them to create outstanding businesses. Whereas all these firms value their shareholders and profitability, none of them make



profitability the fundamental driver of what they do. These firms also see the import of values and relationships with stakeholders as a critical part of their ongoing success. They have found compelling answers to the two core questions posed by stakeholder theory, which underscore the moral presuppositions of managing they are about purpose and human relationships. Stakeholder theory begins with the assumption that values are necessarily and explicitly a part of doing business, and rejects the separation thesis (Freeman, 1994).

The separation thesis begins by assuming that ethics and economics can be neatly and sharply separated. In this context, the challenge of doing business ethics or improving the moral performance of business becomes a Sisyphean task because business ethics is, by definition, an oxymoron. Many proponents of a shareholder, single objective view of the firm distinguish the economic from the ethical consequences and values. The resulting theory is a narrow view that cannot possibly do justice to the panoply of human activity that is value creation and trade, i.e., business.

In our view, Sundaram and Inkpen (2004) exhibit their commitment to such a narrow interpretation of the shareholder ideology in their paper “The Corporate Objective Revisited.” They begin, “Governing the corporation requires purposeful activity. All purposeful activity, in turn, requires goals.” They conclude that the goal of “maximizing shareholder value” is the only appropriate goal for managers in the modern corporation. More subtly, according to McCloskey (1998), the “maximizing shareholder value” view is put forward as a “scientific” theory that is modelled and verified appropriately by ideologists called “economists.” Unfortunately, in an attempt to be accepted by their “scientific brethren,” several management theorists have adopted the fashion of accepting the economic view of business activity as the most useful one available and have fallen into the trap of the separation thesis.

“Maximizing shareholder value” is not a value-neutral theory and contains vast ideological content. At its worst, it involves using the prima facie rights claims of one group shareholders to excuse violating the rights of others. Shareholder rights are far from absolute, regardless of how much economists talk about the corporation as being the private property of the shareholders.

The rights of shareholders are prima facie at best, and cannot be used to justify limiting the freedom of others without their consent.

## **2.3 Other Factors Influencing Financial Performance**

### **2.3.1 Management Competence Index**

Is a multidimensional concept and a number of well documented attempts have been made in the literature to define it. More specifically, the popularity of the term competence can be attributed to (Boyatzis, 1982). In “The Competent Manager” (Boyatzis, 1982) defines competence as “an underlying characteristic of a person”, stating it could be, “motive, trait, skill, aspect of one’s self-image or social role, or a body of knowledge which he or she uses” (Woodruffe, 1993) points out, that this definition leaves the term open to a multitude of interpretations and argues that the term ‘competence’ can be used to refer to a ‘set of behaviors, skills, knowledge and understanding which are crucial to the effective performance of a position’. (Nordhaug and Gronhaug, 1994) interpret competence as “work-related knowledge, skills and abilities” while (Rees, 2003) argues that there has been an enormous diversity of interpretation of the term, ‘competence’, and no agreed definition (Hamel and Prahalad, 1994) define competence as a bundle of skills and technologies that enable company to provide benefits for customers rather than a single skill or technology.

Management efficiency is one of the key internal factors that determine the profitability of a firm. It is represented by different financial ratios like for in a bank they are total asset growth, loan growth rate and earnings growth rate. Yet it is one of the complex subjects to be captured by financial ratios. Moreover, operational efficiency in managing the operating expenses is another dimension for management quality. The performance of management is often expressed qualitatively through subjective evaluation of management systems, organizational discipline, control systems, quality of staff, and others.

Yet some financial ratios of the financial statements act as a proxy for management efficiency. The capability of the management to deploy its resources efficiently, income maximization, reducing operating costs can be measured by financial ratios. One of the ratios used to measure management quality is operating profit to income ratio (Rahman et al, Iihomovich, 2009; Sangmi

and Nazri, 2010). The higher the operating profit to total income (revenue) the more efficient management is in terms of operational efficiency and income generation. The other important ratio is that proxy management quality is expense to asset ratio.

The ratio of operating expenses to total asset is expected to be negatively associated with profitability. Management quality in this regard, determines the level of operating expenses and in turn affects profitability (Athanasolgo et al, 2005).

### **2.3.2 Ownership Structure**

Firm performance is supposed to be independent from the ownership structure in the absence of agency cost. However, in the real world, the agency cost generated from principal-agent problems exists widely. Equity ownership structure as an important mechanism in corporate governance (Denis & McConnell 2003), influence the quality of corporate governance and its ability to reduce agency costs (Berk & DeMarzo, 2007). The path dependent argument (Dyck, 2004) state that the ownership structures are path dependent, and are determined by the stakes. Therefore, the current ownership structure may not be the most efficient one. Thus, testing the relationship between ownership structure and financial performance could help the investors to gain value by optimizing the firm's ownership structure.

The effect of ownership structure on firm performance may be looked at according to two dimensions, ownership concentration and owner identities. Ownership concentration provides quantitative information about the capital right of the largest shareholder(s). Owner identity information provides qualitative information about the character of the controlling shareholder(s). One issue to pay attention to is the divergence of capital right and voting (control) right. Normally the two kinds of right are the same; however, when the voting right is different from the capital right due to control mechanisms, the incentives of the principals and agents would get influenced (Gross, 2007).

Various forms of ownership structure exist that affects performance. In Kenya, key reforms have encouraged foreign companies to venture into the Kenyan market. Kamau (2009) affirm that foreign banks are more efficient than local banks. She attributes this to the fact that foreign banks concentrate mainly in major towns and target corporate customers, whereas large local banks spread their activities more widely across the country. Foreign banks therefore refrain from retail

banking to specialise in corporate products, while large domestic banks are less discriminatory in their business strategy. These different operational modalities affect efficiency and profitability she affirms, which is dependent on the institutional owners decisions.

## **2.4 Tools of Financial Analysis**

Financial analysis tools are one of the most efficient ways that can be used for ensuring good profit from organisations in their financial performance. These financial analysis tools are highly helpful in evaluating the market and investing in a way so as to maximize the profit from the investments made (Bangs and David, 1992). These financial analysis tools are useful for deciphering both internal and external information related to a specific business organization. Mainly, the financial analysis tools can be used for SWOT analysis to determine the strengths, weaknesses, opportunities and threats of the organisation. According to (Casteuble and Tracy, 1997), the economic conditions in the present day market are analysed by management professionals with assistance from SWOT analysis performed by the various financial analysis tools. Each section of the evaluation process contains specific information which is helpful in gauging the general performance of a company. Moreover, financial analysis tools are really important for any investor for the company's performance shows direct impact on the price of a company's stock.

For private solid waste management companies, there are two financial analysis tools available in the financial field. These tools are designed especially for carrying out specific functions. A Balanced Scorecard is one tool which can be of good assistance to gauge the financial position of a company. This financial analysis tool is helpful in subjective as well as objective measurement of special processes. Moreover, this financial tool is also helpful in evaluation of a company's overall return, the operating income, and the capital financing processes (Donnahoe, 1999).

The other financial analysis tool available is benchmarking which is used for assessing the intrinsic strengths and weaknesses of a company. Besides, this also sways the stock price of the company. Also, there are some professional agencies which use this type of financial analysis tools to generate advices for their clients (Gill, 1994).

In addition to the aforementioned financial analysis tools, other important financial analysis tools include ratio analysis, trend analysis, comparative financial statement analysis or horizontal

analysis, and common size statement analysis or vertical analysis that could also be applied by the company (Kristy et al., 1999).

The finance function in companies involves evaluating economic trends, setting financial policy, and creating long-range plans for business activities. It also involves applying a system of internal controls for the handling of cash, the recognition of sales, the disbursement of expenses, the valuation of inventory, and the approval of capital expenditures. In addition, the finance function reports on these internal control systems through the preparation of financial statements, such as income statements, balance sheets, and cash flow statements (Larkin and Howard, 1996).

According to Financial Analysis Review (1999) financial analysis can be an important tool for small business owners and managers to measure their progress toward reaching company goals, as well as toward competing with larger companies within an industry. When performed regularly over time, financial analysis can also help small businesses recognize and adapt to trends affecting their operations. It is also important for small business owners to understand and use financial analysis because it provides one of the main measures of a company's success from the perspective of bankers, investors, and outside analysts.

## **2.5 Empirical Review**

According to Atrill (2003) financial management is the process of managing the financial resources, including accounting and financial reporting, budgeting, collecting accounts receivable, risk management, and insurance for a business.

Financial management system needs to address risk. Any good system should minimize the risks in the business. Even in businesses that have a well set up system, cash flow can be a problem. There are some tried and true methods for managing cash shortages that can help prevent cash flow problems and deal with them if they come up. In the worst case one may have difficulties meeting all the debt obligations. One may even be at the point where he/she wants to sell the business or simply close it and liquidate assets. There are financial issues involved for these circumstances too. So, be certain that you know what steps you need to take in order to protect yourself financially in the long run. Clearly, financial management encompasses a number of crucial areas of the business, Wangombe, J.G. (2003).

To evaluate the financial condition and performance of a company, the financial analyst needs certain yardsticks. The yardstick frequently used is a ratio, or index, relating two pieces of financial data to each other. The analysis of financial ratios involves two types of comparison; first, the analyst can compare a present ratio with past and expected future ratios for the same company (Atrill, 2003). Also financial ratios can be computed for projected statements and compared with present and past ratios. In the comparisons over time, it is best to compare not only financial ratios but also the raw figures. Comparisons with others, it involves comparing ratios of one firm with those of similar firms or with industry averages at the same point in time.

The urban solid waste management in developing countries is faced with challenges of sustainability. A sustainable solid waste collection and management system encompasses a system that is environmentally, financially and socially appropriate and acceptable, and meets the criteria of sustainable development that meets the needs of the present generation without compromising the ability of future generations to meet their needs (Callan and Thomas, 2001). The three important interrelated aspects (environmental, financial, and social) of sustainability when met ensure that solid waste does not cause environmental pollution and public health hazards (Baud et al., 2004; Baud and Post, 2003).

The private sector-led developments in the developed countries and the structural adjustment programme in the 1980s in Ghana made critics to question the service delivery role of Local Governments. In 1990 the LGs of Accra and Tema took the initiative and subsequently started contracting out franchising of solid waste and sanitation services to the private sector. However, there was no provision in the legislation that allowed other actors than the LG to provide these services until 1992.

Private sector involvement in urban solid waste management was an integral part of Urban Environmental Sanitation Project (UESP) which was funded with World Bank loan and implemented in Tema, Takoradi, Kumasi, and Tamale from 1995. In the plans to involve the private sector, it was envisaged that in the short to medium term, LGs would provide about 60% of the basic services, with 40% being in the hands of the private sector. LGs were also required to set tariffs at realistic and economically viable levels, with due allowance for recurrent cost recovery and depreciation of capital investments, and to build private sector capacity through access to investment funds. The move from direct provision to contracting out implied that LGs

had to completely re-organize, reorient their management and regulatory apparatus and strengthen their human capabilities (Awortwi, 2003), in order to facilitate, regulate, and monitor the private sector provision of solid waste management services.

Robbins (2003) discussed ways many of those factors are related to one another and therefore affect leverage. A complex leverage has a greater need for communication across many departments horizontally or between many levels vertically. The more complex an organization is, the greater the need for effective communication, coordination, and control (Robbins, 2003).

Locally, scholar literature divides formalization as high versus low, where a high level of formalization is related to a mechanistic structure and a low level of formalization is related to a flexible organic structure. The fourth variable is the level of process-based.

Onyango (2000) undertook a study on the relationship between ownership structure value of firms listed at the Nairobi Stock Exchange and arrived at a conclusion on the relationship between the value of the firm and insider. From the analysis he concluded that the value of the firm increased when insider ownership ranged between 0% and 37% while firm value again increased when the ownership level is more than 50%.

Barako et al (2007) study provides longitudinal examination of voluntary disclosure practices in the annual reports of listed companies in Kenya from 1992 to 2001. Their study investigated the extent to which organizational structure attributes, ownership structure and company characteristics influence voluntary disclosure of various types of information. Due to the panel nature of their data, to estimate the determinants of voluntary disclosure of various types of information, they used pooled Ordinary Least Square (OLS) with Panel-Corrected Standard Errors (PCSEs). The results indicated that, disclosures of all types of information are influenced by organizational structure attributes, ownership structure and corporate characteristics. In particular, the results also suggested that size and companies in the agricultural sector are significantly associated with the voluntary disclosure of all four types of information disclosures.

Ngumi (2008) looked at the survey of the age in the Housing Finance Company (HFCK) as affecting good corporate governance practices. He came to the clear conclusion that the age bank

and level of commitment will ensure that its business and operations are conducted with high integrity and compliance with the law and the accepted practices in accounting.

Kiamba (2008) studied the effects of size on the financial performance of local authorities in Kenya. The study found that financial performance of the local authorities was influenced by political composition in the respective councils and the manner in which internal audits are conducted and the managerial approaches applied by the council's chiefs.

Muriithi (2008) documented organizational structure and financial performance of state corporations, the case of the New KCC and drew a conclusion that better organizational structure will improve financial performance. In that respect he identified the following organizational structure practices; appointment and leadership of the board structure of the organization, purpose and values, balance of power in the board ,corporate communication and the assessment of performance of board and its responsibilities.

Ongore (2008) carried out a research on the effects of ownership structure, board effectiveness and managerial discretion on performance of listed companies in Kenya where the following conclusion was drawn from this study that; ownership concentration is inimical to a manager creativity and innovation and curtains firm performance, also increase in government shareholding of a firm results in negative performance.

## **2.6 Summary of Literature Review and Research Gap**

A number of studies have sought to investigate the relationship between various factors and financial performance with most studies focusing on companies listed on stock exchange and the banking industry. Hardly do these studies clearly demonstrate the relationship between various factors and financial performance of waste management organisations in Kenya and the accruing benefits. This research therefore aims to find out the factors that influence financial performance of private solid waste management companies in Nairobi County.



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter described the research methodology in a systematic manner by explaining the research design, the population from which the data was obtained, the sample selection and techniques, procedure used in collection and analysing the data.

#### **3.2 Research Design**

Copper and Schindler (2003) define research design as ‘the blueprint for fulfilling objectives and answering questions’. Research design brings out the plan of what the researcher intends to do and how to carry out the research. A research design can summarily be defined as the plan for the collection, measurement and analysis of data (Copper & Schindler, 2003). This study adopted a descriptive research design. Descriptive research fits the research at hand since it gave a description of the factors influencing financial performance of private solid waste management companies in Nairobi County.

#### **3.3 Population**

Population is defined as “an entire group of individuals, events, or objects having a common observable characteristic” (Mugenda and Mugenda, 2003). It consists of all elements of study in a research. The target population of the study was composed of all the private solid waste management operators found in Nairobi County. The sample population comprised all the 56 registered solid waste management companies in Nairobi County. The study conducted a census survey owing to the number of the solid waste management companies registered by NCC (as provided in appendix i), being manageable. Therefore, the study targets the whole population of the study.

#### **3.4 Data Collection Techniques**

The study required secondary data in meeting its obligation. Therefore, secondary data collection techniques were employed. The study collected audited financial statements and reports from the

targeted companies within the study period 2011-2013. This data was analysed to facilitate meeting the study objective.

### 3.5 Data Analysis and Presentation

Data analysis involves reducing accumulated data to a manageable size, developing summaries, looking for patterns and finally applying statistical techniques. It refers to converting raw data into meaningful information. The collected data was examined for completeness and comprehensibility. The data will then be coded and keyed into the Statistical Package for Social Sciences (SPSS Version 17) for analysis.

This is a computer aided tool for the analysis that helps to generate descriptive statistics such as means, standard deviations and percentages. It was used in analyzing the data. The study also employed inferential statistics such as regression and correlation to test the relationship between the selected factors influencing financial performance in solid waste management companies in Nairobi County.

### 3.6 The Study Model

The study used a multiple linear regression model. The multiple linear regression models sought to analyze the factors influencing financial performance of private solid waste management through regressing factors such as leverage, liquidity, age and size of the companies within the period of interest. The study used the following regression model;

$$FP_t = \alpha + b_i L_t + b_{ii} Q_t + b_{iii} A_t + b_{iv} S_t + \epsilon_t$$

Where  $FP_t$  = Firm Performance (ROE)

$\alpha$  = Constant term - defines value of return on equity without inclusion of predictor variables

$b_n$  = Coefficients of the variable - rate of change of dependent variable (financial performance) as a function of changes in the independent variables

$L$  = Leverage position of the firm – measured by the ratio of debt by equity

$Q$  = Liquidity position of the firm - measured by the ratio of current assets by current liabilities

**A** = Age of the company – given by the years the company has been in operation

**S** = Size of the company – measured by the company's total assets

$\epsilon_t$  = Standard error

This model was created using insights and success from Kabajeh, AL-Nu'aimat, and Dahmash, (2012), study findings on “The Relationship between the ROA, ROE and ROI ratios with Jordanian Insurance Public Companies Market Share Prices”, which was modified to fit the case of the analysis. They found the model to be very useful in determining performance of the insurance sector in their country.

Correlation was used to test the relationship of the ROE, current and quick ratios, debt and equity ratios, total assets and the years the company has been in operation.

The study also used ANOVA (model goodness of fit) to test the statistical significance of the variables in satisfying the set objectives.

## **CHAPTER FOUR**

### **DATA ANALYSIS, RESULTS AND DISCUSSION**

#### **4.1 Introduction**

This chapter presents the data analysis, results, interpretation, and discussion of the research findings. To achieve the objective of the study, SPSS Version 17 statistical software was used to analyse the data. Linear regression was used to analyse the relationship of the selected factors influencing financial performance and the Solid Waste Management companies in Nairobi County.

#### **4.2 Response Rate**

The sample population comprised all the 56 registered solid waste management companies in Nairobi County. The study conducted a census survey owing to the number of the solid waste management companies registered by NCC being manageable. Therefore, the study targets the whole population of the study and collected audited financial statements and reports from the targeted companies within the study period 2011-2013. This data was analysed to facilitate meeting the study objective.

#### **4.2 Descriptive Statistics**

The study seeks to determine the relationship of the selected factors influencing financial performance and the Solid Waste Management companies in Nairobi County. The references included audited financial statements and reports from the targeted companies within the study period 2011-2013.

**Table 4.1: Descriptive Statistics**

| <b>Variable</b> | <b>Mean</b> | <b>Standard<br/>Deviation</b> | <b>Minimum<br/>Value</b> | <b>Maximum<br/>Value</b> | <b>Observations</b> |
|-----------------|-------------|-------------------------------|--------------------------|--------------------------|---------------------|
| FP              | 0.2115      | 0.02501                       | 0.01025                  | 0.36510                  | 56                  |
| LV              | 0.3684      | 0.11890                       | 0.23541                  | 0.48940                  | 56                  |
| LQD             | 0.3577      | 0.25118                       | 0.29897                  | 0.58501                  | 56                  |
| SIZE(Million)   | 23.3514     | 2.65818                       | 17                       | 31.0778                  | 56                  |
| Age             | 19          | 1.78024                       | 12                       | 52                       | 56                  |

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**Source: Research Findings**

Table 4.1 presents the descriptive statistics for the data set. Four variables namely financial performance, leverage ratio, liquidity ratio and size of the company with 40 observations each were used in the analysis. Financial performance had a mean of 0.2115 and a standard deviation of 0.02501. Its minimum value was 0.01025 and maximum value was 0.36510.

This implies that on the average, the private solid waste management companies in Nairobi registered a profit of 21.15% during the study period. Leverage ratio had a mean of 0.3684 and a standard deviation of 0.11890. Its minimum and maximum values are 0.23541 and 0.48940 respectively. Liquidity ratio had a mean of 0.3577 and standard deviation of 0.25118 and finally on average the private solid waste management company size had a mean value of 23 million Kenya Shillings.

### 4.3 Correlation Matrix

**Table 4.2: Correlation Matrix**

|      | FP      | LV     | LQD    | SIZE    | AGE    |
|------|---------|--------|--------|---------|--------|
| FP   | 1.0000  |        |        |         |        |
| LV   | -0.7358 | 1.0000 |        |         |        |
| LQD  | 0.8339  | 0.2385 | 1.0000 |         |        |
| SIZE | 0.6875  | 0.5781 | 0.4358 | 1.0000  |        |
| AGE  | 0.354   | 0.2877 | 0.2310 | -0.4337 | 1.0000 |

**Source: Research Findings**

Table 4.2 shows the correlation between independent variables leverage, liquidity, size and age of company as presented in the correlation variance above. Each variable is perfectly correlated with itself as indicated by the coefficient of 1. Leverage ratio has a negative correlation with financial performance (R=-0.7358). Liquidity ratio has a positive correlation with financial performance (R=0.8339). Size of the company is positively correlated with financial performance of the private companies (R=0.6875) and age of the company is positively correlated with financial performance of the companies (R=0.354).

This implies that liquidity, size and age may positively influence financial performance of the private solid waste management companies but leverage has a negative influence on financial performance of the companies. This means that mature companies which have a considerable liquidity base and a strong asset base perform better than younger and illiquid companies with a weak asset base. However, highly leveraged companies are at risk of bankruptcy hence affecting the financial performance of the companies.

## 4.4 Pooled OLS Regression Model

### 4.4.1 ANOVA table

The study used ANOVA statistics to establish the significance of the relationship between financial performance and the explanatory variables. The regression model is significant given the level of significance 0.033 ( $p = 0.025$ ) which is below 0.05, therefore there is statistical significant difference between the means of the dependent and explanatory variables.

**Table 4.3: Analysis of Variance (ANOVA)**

| Model |            | Sum of Squares | df | Mean Square | F       | Sig.  |
|-------|------------|----------------|----|-------------|---------|-------|
| 1     | Regression | 43.6611        | 4  | 20.5042     | 21.6770 | 0.033 |
|       | Residual   | 0.28511        | 53 | 0.945899    |         |       |
|       | Total      | 43.96621       | 56 |             |         |       |

a. Dependent Variable: FP

b. Predictors: (Constant), LV, LQD, SIZE

### Source: Research Findings

#### 4.4.2 Model Fit

Determination coefficients ( $R^2$ ) were also carried out to determine the strength of the relationship between independent and dependent variables. The study established  $R^2$  of 0.8368.  $R^2$  of 0.8368 indicates that 83.68% of the variation in financial performance of private solid waste management company in Nairobi County is attributed to changes in the explanatory variables. The Durbin-Watson test statistic tests the null hypothesis that the residuals from an ordinary least-squares regression are not auto correlated. The Durbin-Watson statistic ranges in value from 0 to 4. A value near 2 indicates non-autocorrelation; a value toward 0 indicates positive autocorrelation; a value toward 4 indicates negative autocorrelation. Since the DW value of 1.8992 was close to 2, then it can be concluded that there was no autocorrelation among the model residual.

**Table 4.4: Goodness of fit statistic**

| Model | R     | R Square | Adjusted Square | R Std. Error of the Estimate | Durbin-Watson<br>Sig. F Change |
|-------|-------|----------|-----------------|------------------------------|--------------------------------|
| 1     | 0.914 | 0.8368   | 0.7925          | 1.336741                     | 1.8992                         |

**Source: Research Findings**

#### 4.4.3 Coefficients of the Model

Multiple regression analysis was used to determine the significance of the relationship between the dependent variable and all the independent variables pooled together. The results are given in the model summary in Table 5 below.

**Table 4.5: Regression Result**

| Variab | Coef   | Std.Err | t      | P> t   |
|--------|--------|---------|--------|--------|
| LV     | -0.297 | 0.12877 | 2.64   | 0.0337 |
| LQD    | 10.584 | 0.28871 | 4.195  | 0.0177 |
| SIZE   | 0.0037 | 0.03677 | 4.1974 | 0.0011 |
| AGE    | 0.1581 | 0.11789 | 4.633  | 0.0408 |
| _cons  | 2.3548 | 0.55101 | 3.772  | 0.0037 |

**Source: Research Findings**

From the regression result, the estimated model is given below:

$$FP = 2.3548 - 0.297LV + 10.584LQD + 0.0037SIZE + 0.1581AGE$$

At 5% level of significance all the variables are statistically significant in explaining the variation in financial performance of the private solid waste management company in Nairobi County.

#### 4.5 Summary and Interpretation of Findings

The objective of the study was to establish the relationship of the selected factors influencing financial performance and the Solid Waste Management companies in Nairobi County. To



achieve this objective, all the 56 registered solid waste management companies in Nairobi County for the period 2011-2013. On average, the financial performance during the study period was 21.15% with a minimum and maximum value of 1.025% and 36.510% respectively. Leverage ratio Leverage ratio had a mean of 0.3684 and a standard deviation of 0.11890. Its minimum and maximum values are 0.23541 and 0.48940 respectively. Liquidity ratio had a mean of 0.3577 and standard deviation of 0.25118 and finally on average the private solid waste management company size had a mean value of 23 million Kenya Shillings with the largest company having a monetary value of 31 million Kenya Shillings.

The regression coefficient of leverage ratio is negatively correlated with the profitability of the companies. A unit increase in leverage ratio will lead to 0.297 units decrease in financial performance of solid waste management company in Kenya. Company's liquidity is positively related with the financial performance of the. A unit increase in liquidity ratio will lead to 10.584 units increase in financial performance of waste management company in Nairobi County. A unit increase in the company size will lead to 0.0037 units increase in the financial performance of the waste management company.

Leverage was statistically significant at 5% level of significance in explaining the variation in financial performance of private waste management company in Nairobi County. A unit increase in leverage ratio will lead to 0.297 units decrease in financial performance of solid waste management company in Kenya. The findings show that liquidity ratio is statistically significant in influencing the variation in the profitability of the waste management company. A unit increase in liquidity ratio will lead to 10.584 units increase in financial performance of waste management company in Nairobi County.

The above findings are in line with Wangombe, (2003) who contended that financial management system needs to address risk. Any good system should minimize the risks in the business. Even in businesses that have a well set up system, cash flow can be a problem since there are some tried and true methods for managing cash shortages that can help prevent cash flow problems and deal with them if they come up. His study also established that the worst case one may have difficulties meeting all the debt obligations. One may even be at the point where he/she wants to sell the business or simply close it and liquidate assets. There are financial issues involved for these circumstances too. So, be certain that you know what steps you need to take in

order to protect yourself financially in the long run. Clearly, financial management encompasses a number of crucial areas of the business,

The result is in line with (Liargovas and Skandalis, 2008) who argues that liquidity would allow an investment fund to deal with unexpected contingencies and to cope with its obligations during periods of low earnings which positively influence profitability of the company. Regression coefficient of the size of the company is positively and significantly related to the financial performance of waste management company. A unit increase in the company size will lead to 0.0037 units increase in the financial performance of the waste management company. The finding is consistent with Hvide and These (2007) who contends that larger firms have better financial performance. Flamini et al (2009) also postulate that bigger firms are more competitive than smaller firms in harnessing economies of scale in transactions and enjoy a higher level of profits.

The study findings established that the age of the company is positively related with the financial performance of the solid waste companies with a unit increase in the duration of the operation of the company resulting to 0.1581 units increase in the profitability of the solid waste management companies. This findings are in line Barako (2007) study provides longitudinal examination of voluntary disclosure practices in the annual reports of listed companies in Kenya from 1992 to 2001. Their study investigated the extent to which organizational structure attributes, ownership structure and company characteristics influence voluntary disclosure of various types of information. Due to the panel nature of their data, to estimate the determinants of voluntary disclosure of various types of information, they use pooled Ordinary Least Square (OLS) with Panel-Corrected Standard Errors (PCSEs). The results indicate that, disclosures of all types of information are influenced by organizational structure attributes, ownership structure and corporate characteristics. In particular, the results also suggest that size and companies in the agricultural sector are significantly associated with the voluntary disclosure of all four types of information disclosures. Moreover the study findings were also in line with Mwangi (2007) who observes that the sheer volume of waste does not actually constitute the problem but rather the inability of governments and waste-disposal firms to keep up with it and also asserts that he situation in Nairobi pertinently illustrates this.

## CHAPTER FIVE

### SUMMARY, CONCLUSION, AND RECOMMENDATIONS

#### 5.1 Summary

This chapter presents the summary of finds, conclusion, recommendations and suggestions for further research derived from the findings. The chapter also presents the limitations that were encountered with suggestions for further research.

The objective of the study was to establish the relationship of the selected factors influencing financial performance and the Solid Waste Management companies in Nairobi County. Various factor including Leverage, Liquidity, Age of the company and the Size of the company. The study established that the financing or leverage decision is a significant managerial decision because it influences the shareholder's return and risk and the market value of the firm. The ratio of debt-equity has implications for the shareholder's dividends and risk, this affect the cost of the capital and the market value of the firm.

The study established that liquidity established both structurally and operationally capacity of the firms. Solvency results provided an indication of the business' ability to withstand risks by providing information about the operation's ability to continue operating after a major financial adversity. Moreover, the study found out that firm age has an influence on its performance in that organizational inertia operating in old firms tends to make them inflexible and unable to appreciate changes in the environment. Newer and smaller firms, as a result, take away market share in spite of disadvantages like lack of capital, brand names and corporate reputation with older firms.

#### 5.2 Conclusion

The results obtained from the model shows that size of the company, liquidity position of the firm and age of the firm positively influence the financial performance of private solid waste management companies in Nairobi. However, the study revealed that leverage position of the

firm negatively impacts on the financial performance of the company. Previous studies on the factors affecting financial performance of firms established that company size can predict the future stock price for instance large firms have better financial performance. This finding reveals why bigger firms are more competitive than smaller firms in harnessing economies of scale in transactions and enjoy a higher level of profits. The study asserted that increase in company size increases the performance of the bank. The study finding contends that the size of the firm can affect its financial performance. However, for firms that become exceptionally large, the effect of size could be negative due to bureaucratic and other reasons

The study established that financial performance is the outcome of all of the organisation's operations and strategies measuring performance accurately is critical for the accounting purposes and remains a central concern for most organisations. Performance measurement systems provide the foundation to develop strategic plans, assess an organisation's completion objectives; and remunerate manager. Although assessment of performance in the past literature is still very important, it is also complicated while consensual measurement of performance promotes scholarly investigations and can clarify managerial decisions; managers have not been able to find clear, current and reliable measures of performance on which marketing merit could be judged. Two approaches have been adopted in the literature to measure financial performance. The first subject measures the performance of forms based on their own evaluation and expectations or comparison with their competitors, the second is objective, based on the absolute measure of performance such as financial ratios. Finance is always being disregarded in financial decision making since it involves investment and financing in the short-term period. Further, it also acts as a restraint in financial performance, since it does not contribute to return on equity .A well designed and implemented financial management is expected to contribute positively to the creation of a firm's value.

### **5.3 Recommendations of Policies and Practices**

Based on the study findings, the study recommends that private solid waste companies should avoid operating in debt. Leverage refers to the proportion of debt and equity in the capital structure of a firm. The financing or leverage decision is a significant managerial decision because it influences the shareholder's return and risk and the market value of the firm. The ratio

of debt-equity has implications for the shareholder's dividends and risk, this affect the cost of the capital and this reduces leverage position of the company. Solid waste management companies should reduce debt financing of the companies since companies that are highly leveraged may be at risk of bankruptcy if they are unable to make payments on their debt; they may also be unable to find lenders in the future.

Solid waste companies should increase their liquid asset base which increases the ability of the business to meet financial obligations on time. Solid waste company should use an investment fund as liquid assets to finance its activities. Higher liquidity allows an investment fund to deal with unexpected contingencies and to cope with its obligations during periods of low earnings. This study moreover recommends that Dilemma in financial management is to achieve desired to trade-off between liquidity, solvency and profitability .Management of working capital in terms of liquidity and profitability management is essential for sound financial recital as it has a direct impact on profitability of the company .The crucial part in managing working capital is maintaining its liquidity in day to day operation to ensure its smooth running and meets its obligations. Ultimately goal of profitability can be achieved by efficient use of resources. Financial performance is concerned with maximisation of shareholders or owners' wealth. It can be attained through financial performance analysis. Financial performance is a measure of a firm's overall financial health over a given period of time.

#### **5.4 Limitation of the Study**

In carrying out this study, a limitation relating to the measurement of financial performance was noted. In this regard, ROA was used to measure the financial performance of commercial banks. However, financial performance could be measured using market ratios such as price earnings ratio, market yield ratio among others. It is possible that if any of those ratios were included in the study, the results would probably be different.

In view of the research findings a negative relationship between performance and leverage which was established may have been attributed to the diminishing influence of lack of various mechanisms which are unavoidable.

Performance ratios and opportunity only appear to be inversely related to big firms as their size

appears to subordinate their immediate financial interests to that of the overall goal of the firm which is to maximize profitability. Consequently, there is need to reign in the tendencies in smaller firms to favor bigger firms who double up as resources.

### **5.5 Suggestions for Further Study**

Future studies should be conducted to establish the effect of credit access facilities on the profitability of the solid waste management companies in Nairobi County. There is need for further studies to carry out similar tests for a longer time period.

A similar study should also be carried out on solid waste management companies with total income as the proxy for size to try and assess whether the relationship between financial factors and size is drastically altered by the change of variables.

Given that a good chunk of the studies touch on factors affecting financial performance, there is need to ascertain the relationship between the firm value as indicated by the various organisational factors, and performance.

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## APPENDICES

### Appendix i: List of Registered Solid Waste Collection Companies in Nairobi, Kenya

|           | <b>Firm</b>                    | <b>Operation</b> |           | <b>Firm</b>                      | <b>Operation</b> |
|-----------|--------------------------------|------------------|-----------|----------------------------------|------------------|
| <b>1</b>  | Bins (Nairobi) Services Ltd    | Nairobi          | <b>29</b> | Garbage.Dot Com Ltd              | Nairobi          |
| <b>2</b>  | Bins Kleansley Hygiene Plus    | Nairobi          | <b>30</b> | Ombi Garbage Rollers Ltd         | Nairobi          |
| <b>3</b>  | Smart City Cleaners Ltd        | Nairobi          | <b>31</b> | Garbage Industries Ltd           | Nairobi          |
| <b>4</b>  | Bio Bins Services              | Nairobi          | <b>32</b> | Garbage & 3R Masters Ltd         | Nairobi          |
| <b>5</b>  | Boulevard Bins Ltd             | Nairobi          | <b>33</b> | Plastic Electricons              | Nairobi          |
| <b>6</b>  | City Garbage Recyclers         | Nairobi          | <b>34</b> | Plastics & Rubber Industries Ltd | Nairobi          |
| <b>7</b>  | Cosmo Bin-Care Services        | Nairobi          | <b>35</b> | Raffia Bags (K) Ltd              | Nairobi          |
| <b>8</b>  | Cosmo Bins Services            | Mombasa          | <b>36</b> | Poly Propelin Bags Ltd           | Mombasa          |
| <b>9</b>  | Eco Urban Waste Management Ltd | Mombasa          | <b>37</b> | Polyblend Limited                | Nairobi          |
| <b>10</b> | Cosmo Plastics Ltd             | Nairobi          | <b>38</b> | Polyflex Industries Ltd          | Nairobi          |
| <b>11</b> | Garbage Dot Com Ltd            | Nairobi          | <b>39</b> | Polythene Industries Ltd         | Nairobi          |
| <b>12</b> | Doshi Ironmongers Ltd          | Nairobi          | <b>40</b> | Premier Industries Ltd           | Nairobi          |
| <b>13</b> | Greenklean Ltd                 | Nairobi          | <b>41</b> | Prestige Packaging Ltd           | Nairobi          |
| <b>14</b> | Hytech Bins Nairobi            | Nairobi          | <b>42</b> | Prosel Ltd                       | Nairobi          |
| <b>15</b> | Ideal Bins Ltd                 | Nairobi          | <b>43</b> | Pyramid Packaging Ltd            | Nairobi          |
| <b>16</b> | Lee Brothers Ltd               | Nairobi          | <b>44</b> | Qplast Industries Ltd            | Nairobi          |
| <b>17</b> | Five Star Bin industries Ltd   | Nairobi          | <b>45</b> | Safepak Ltd                      | Nairobi          |
| <b>18</b> | Riruta Environmental Group     | Nairobi          | <b>46</b> | Sammer Africa Ltd                | Nairobi          |
| <b>19</b> | Roc Refuse Collectors          | Nairobi          | <b>47</b> | Sanpac Ltd                       | Nairobi          |
| <b>20</b> | Hi-Plast Ltd                   | Nairobi          | <b>48</b> | Shiv Enterprises (EA) Ltd        | Eldoret          |
| <b>21</b> | Jamlam Industries              | Nairobi          | <b>49</b> | Signode Packaging Systems Ltd    | Nairobi          |
| <b>22</b> | Kamba Manufacturing (1986) Ltd | Nairobi          | <b>50</b> | Three Bins Services              | Nairobi          |
| <b>23</b> | Keci Rubber Industries         | Nairobi          | <b>51</b> | Laneeb Garbage Industries Ltd    | Nairobi          |
| <b>24</b> | Kenpoly Manufacturers Ltd      | Nairobi          | <b>52</b> | Malplast Industries              | Nairobi          |
| <b>25</b> | Kentainers Ltd                 | Nairobi          | <b>53</b> | Metro Plastics Kenya Ltd         | Nairobi          |
| <b>26</b> | Rucham Investments Ltd         | Mombasa          | <b>54</b> | Mombasa Polythene Bags Ltd       | Mombasa          |
| <b>27</b> | King Plastics Kenya Ltd        | Nairobi          | <b>55</b> | Zoa Taka Ltd                     | Nairobi          |
| <b>28</b> | Simple Bins Express            | Nairobi          | <b>56</b> | Nav Plastics Limited             | Nairobi          |

