ORGANIZATIONAL CONSTRAINTS AND PERFORMANCE OF SOLID WASTE MANAGEMENT PROJECTS IN NAIROBI CITY COUNTY, KENYA

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NOVEMBER 2018
DECLARATION

This research project is my original work and has not been presented for a degree or other award in any other university.

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Signature ............................. Date .........................................

Mary Wanjiku Gathong’a
D53/28323/2014

This research project has been submitted to the university with my approval as the university supervisor.

Signature ............................. Date .........................................

DR. SAMUEL MAINA,
Department of Business Administration
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DEDICATION

I would like to dedicate this research project to my parents and siblings. Thank you for your support.
ACKNOWLEDGEMENT

I would like to acknowledge my supervisor Dr. Samuel Maina for his the support and insight throughout this research process. My sincere gratitude goes to my good friend Joseph Ndung’u, for being true a source of inspiration without forgetting fellow scholars ahead of me from whom I got great information.
OPERATIONAL DEFINITION OF TERMS

Solid waste: They are objects or substances made of solid matter disposed off, because the initial user has no further use for them.

Waste management: These are activities that include generation, storage, control, transport selection and disposal of waste.

Performance: Refers to the accomplishment of a given task measured against preset known standards of accuracy, completeness, cost, and speed.

Organizational constraints: Implies to the scope of impediments encompassed in planning, organizing and management of waste generation and waste handling processes.

Solid waste management projects: Are systems that are constituted by teams within or across organizations to accomplish activities and actions required to manage waste from its inception to its final disposal i.e. collection, transport, treatment and disposal of waste together with monitoring and regulation.
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<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>APA</td>
<td>American Psychological Association</td>
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<tr>
<td>ANOVA</td>
<td>Analysis of Variance</td>
</tr>
<tr>
<td>KRA</td>
<td>Kenya Revenue Authority</td>
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<tr>
<td>NACOSTI</td>
<td>National Commission for science, Technology and innovation</td>
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<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
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<tr>
<td>CBD</td>
<td>Central Business District</td>
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<td>CBO</td>
<td>Community Based Organization</td>
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<tr>
<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
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<td>CSIRO</td>
<td>Commonwealth Scientific and Industrial Research Organization</td>
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<tr>
<td>EMCA</td>
<td>Environmental Management and Co-ordination Act</td>
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<tr>
<td>EMCR</td>
<td>Environmental Management and Co-ordination Regulations</td>
</tr>
<tr>
<td>JICA</td>
<td>Japan International Cooperation Agency</td>
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<tr>
<td>KNBS</td>
<td>Kenya National Bureau of Statistics</td>
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<tr>
<td>NEMA</td>
<td>National Environmental Organization</td>
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<tr>
<td>MENR</td>
<td>Ministry of Environments and Natural Resources</td>
</tr>
<tr>
<td>NCC</td>
<td>Nairobi City County</td>
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<tr>
<td>PAHO</td>
<td>Pan American Health Organization</td>
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<tr>
<td>SWM</td>
<td>Solid Waste Management</td>
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<tr>
<td>UNEP</td>
<td>United Nations Environmental Program</td>
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<td>UNDP</td>
<td>United Nations Development Program</td>
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<tr>
<td>UN- OCHA</td>
<td>United Nations Office for the Coordination of Humanitarian Affairs</td>
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<td>UNSD</td>
<td>United Nations Statistics Division</td>
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ABSTRACT

The purpose of this study was to evaluate the organizational constraints and performance of solid waste management projects in Nairobi City County. The study had the following objectives; to determine how project funding affects the performance of solid waste management projects in NCC, to determine the effect of project planning on performance of solid waste management projects in NCC, to establish the influence of personnel skills on performance of solid waste management projects in NCC and to assess the influence of the role of households on performance of solid waste management projects in NCC. The findings of this study would help in revealing the organizational constraints in performance of SWM projects in NCC, which can be used to come up with viable solutions to improve on SWM. The conceptual frame work used project funding, project planning, personnel skills and the role of households as independent variables. The dependent variable was performance of solid waste management projects. This research applied descriptive survey design. It considered 5 categories of solid waste projects as follows; organic solid waste management projects, paper SWM projects, plastic SWM projects, glass SWM companies and metal SWM projects. The sample size was 10 managers and 189 employees. The researcher used purposive sampling, systematic sampling and simple random sampling techniques. Questionnaires and interviews schedules were used for data collection. The information was displayed on tables. Analysis of Variance was used in determining the independent variables effect on the dependent variables. From the findings, a majority indicated that the amount of funds for the projects is insufficient; project funds undergo different stages before they are approved. Majority revealed that SWM employees are not carried along in project planning decisions. The findings also revealed that there are no effective control systems in their organizations as well as lacking feedback on project progress as was indicated by the majority. Majority revealed that the project execution team does not consist of qualified employees and division of labor is not observed in the organizations. A good number of the targeted population indicated that the community is not informed on proper waste handling. In connection to that the set goals and objectives of the projects are not met at the end of the project as indicated by majority. In conclusion, the amount of funds for the projects is insufficient. The project execution team does not consist of qualified employees and the community is not informed on proper solid waste handling. The researcher recommended that, there is need for financial provision, may be the county government could provide funds to facilitate solid waste management projects. Employees need to be carried along in project planning decisions. There is also need to give out feedback on project progress to enable quality review of the projects. The SWM project should consist of qualified employees who are knowledgeable enough to help in effective solid waste management. Civic education ought to be involved so as to train the society to reduce the amount of waste produced. Finally, projects should be carried out within the set time frame, and this will lead to accomplishment of set goals at the end of the project period.
CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Organizational constraints and performance of solid waste management implies the scope of impediments encompassed in planning, organizing and management of waste generation and waste handling processes (UNSD, 2007). Solid waste management according to Carton (2009), revolves around utilizing the available assets, for example physical, human and capital resources to tackle waste generation from the point of inception to disposal.

Wastes are unusable items or materials disposed off since the original user has no further use for them (Bilitewski et al., 1997; Williams, 2005). Any unwanted materials from industrial, commercial, agricultural, mining, household wastes and sludge can be referred to as solid waste (Cheeseman et al., 2006). Solid waste- made of solid matter- has been a matter of concern since man started living in settled societies and communities (Anand, 2010; Kumar, 2009).

As the capital city of Kenya, Nairobi County’s population is of more than five million people. It is a center of any industrial activities, education and also the culture that occupy an area of about 696.1 km², that is 0.1 % of Kenya’s total surface area) and hosting about 25 % of urban population in Kenya’s (UNCHS, 2001). From a simple calculation equating an average of 0.5 kg of solid waste per person, the current rate at which garbage in Nairobi is generated is over 2000 tons daily (KNBS Survey, 2009). The increased number of people means a greater turn over in rubbish and roadside litters, attributed by the ageless culture of indiscreet waste disposal embedded in many people
The rampant increase of solid waste is fueled by changing income, increasing population, change in consumption patterns, and industrialization and urbanization.

With many and huge disposal of diverse solid waste in wrong places, Kenya is faced with a big challenge in tackling management of solid waste in amicable ways (Kombo, 2006). According to Schnitzer and Ngoc (2009), the challenges in management of solid waste projects arise after failure to establish a rationale to articulate organizational constraints issues in funding, personnel skills, legislation and demographic factors among others in this industry.

1.1.1 Organizational Constraints and Performance of Solid Waste Management Projects

According to Adepoju (2000) there are various organizational constraints in performance of solid waste management projects that greatly affect their success, for example; legislation and governance, solution of financial constrictions, awareness creation, planning, and controlled urbanization, inculcating technical skills and stakeholders’ involvement (Kazungu, 2010).

Kenya’s vision 2030 stipulates cohesion of these organizational constraints as lee ways to attainment of effective solid waste management initiatives which will provide secure, clean and sustainable environment. The government is trying to realize its mandate by encouraging startup of a wide ray of solid waste management projects to ensure waste is disposed properly and good environment is maintained for all citizens regardless of their social status (Kenya Constitution, 2010). If the stated constraints are well upheld, this can
pave way for the ability of the solid waste management projects to keep up with the ever increasing serious and adverse consequences that otherwise will be experienced by the population health and the urban environment (Mihelcic, 2009; Caplan et al., 2012).

1.1.2 Projects Performance

The concept of project performance in solid waste management is based upon value creation to the incoming bulk refuse to achieve the set standards of the intended outputs (Diaz et. al., 1985). Regular monitoring and evaluation of project performance enable the aligning of business undertakings to the vision and approach of the involved companies by refining both internal and external communication, and surveillance against the strategic goals (Omuterema, 2013). Monitoring and evaluation is a weighing tool that puts into consideration economic viability, consumer satisfaction and project progress. Organizations can use these standards to balance the implementation of their strategy and account for the recommended provision of enough resources especially funding.

In 2014/2015 financial year the NCC listed about 60 SWM projects that are underway to help solve the major challenge of SWM, which is the main concern in the city following urban migration (Njoroge et al., 2014). These projects were initiated with the aim of equating the increasing population to enough and reliable means of disposing their turnover waste. However, to date the NCC is still puzzled by policy enforcement difficulties around its authorities on one hand, and a combination of variations in ways of life and attitudes of the city dwellers on the other (Towett, 2015). With failing cohesion and harmonious flow of these two drivers that influence perpetuation of economic radar, the heat of the challenge is felt as each factor abnegates from the responsibilities

1.1.3 Overview of Nairobi City County

Nairobi City County was created after the inauguration of the Kenyan constitution of 2010 and it is a replacement of the now obsolete City Council of Nairobi. This county functions under the provisions of the Devolved Government Act, Cities and Urban Areas Act among others. Nairobi has a population of 3, 138, 369 according to the 2009 census (Kenya National Bureau Statistics (KNBS), 2010). A steady increase in the population growth rate in Kenya has been observed. The current trend in population growth in Kenya depicts that there will be a hike in population growth, with Nairobi’s population estimated to reach 5 million people by 2025 (Wayback Machine, 2013).

This calls for implementation of effective measures and projects to manage solid waste as it tends to increase with the growth in population. The Nairobi County government is mandated with the obligation of providing diverse services to its residents. The new Nairobi Water and Environmental Services Authority, regulates the water, energy, forestry, environment and natural resources sectors of the county charged with policy formulation and offers guidance in solid waste management areas especially in the county (Nairobi City County Waste Management Bill, 2015; National Environmental Management Authority (NEMA), 2014).

1.2 Statement of the problem

Solid waste management projects are so diverse in Nairobi City County because they are being implemented aiming at aiding in meliorating the adverse effects of improper
handling of solid waste. Most of these SWM projects in Kenya are faced with many challenges which negatively affect their performance, and so their intended objectives are not effectively met (NEMA, 2014). Out of all SWM projects licensed by the City Hall between 2011 and 2014, 60% of them have been implemented with about 30% showing progressive results (Nairobi County Integrated Development Plan, 2014).

A wide ray of SWM projects in Nairobi City County uses traditional oriental procedures like open dumping, so; they rarely meet the set goals and objectives (City of Nairobi Environmental Outlook, 2007). The inability of these projects to keep up with the ever increasing waste has got very serious adverse consequences on population health and the urban environment (Ogola, 2013).

Many and huge disposal of diverse solid waste is always found in wrong places and Kenya is faced with this challenge and also in tackling the management of solid waste in proper ways (Kombo, 2006). According to Muniafu and Otiato (2010), industrialization and globalization have resulted into a huge increase of solid waste in cities such as Nairobi, thus, there should be a proper SWM system in many of urban centers for a healthy and habitable environment. The SWM challenges emanates from flaws in implementation of effective solid waste management projects policies and corresponding expansion in waste management services and facilities (NCCSWM Bill, 2015). In her (Kenya) drive to achieve a conducive environment for the vision 2030 and the posterity of all humanities, upright measures of waste processing must be devised and brought to book.
With the rapid advent of newer and increasingly complex technologies, the solid waste management sector should be fused with modern approaches that would ensure effective and successful performance of the projects (UNEP, 2012). This is achievable through research in areas of inter-relation with incremental and cumulative nature of technological dynamic and the limits of the projects’ ability to learn and manage their growth. In response to negative effects caused by improper solid waste disposal, several researches have been carried out in Kenya. Ng’era (2014) studied on the problems and openings in non-biodegradable solid waste reduce, reuse and recycle in Thika Town. The researcher found out that Thika Sub County has limited information on policies and by laws of non-biodegradable solid waste reuse and recycling.

The region rarely involves the residents and private sector. Likewise, Diana (2015), investigated on management of solid waste impacts in Embu County. The findings indicated that there is need to employ more workers, acquire more vehicles, equipment and come up with a payment system for solid waste management. In addition Ochieng (2015), did a study on nexus between environmental safety and solid waste management in Kenya Defense Forces (KDF) and concluded that there are gaps in sector regulations which make it hard for execution of laws to institutions like the KDF.

Little capacity within the lead agencies and financial implications also influence greatly on the ability of the responsible bodies to enforce the regulations even where applicable. From the above mentioned studies and others, there is no study that has been conducted on organizational constraints and performance of solid waste management projects. Therefore, this study aimed at filling this gap.
1.3 Objective of the Study

1.3.1 General Objectives

To evaluate the organizational constraints and performance of solid waste management projects in Nairobi City County.

1.3.2 Specific Objectives

The study research had the following specific objective

1. To determine the effect of project funding on performance of solid waste management projects in NCC.

2. To determine the effect of project planning on performance of solid waste management projects in NCC.

3. To establish the effect of personnel skills on performance of solid waste management projects in NCC.

4. To assess the effect of role of households on performance of solid waste management projects in NCC.

1.4 Study hypotheses

H₀₁. There is no effect of project funding on performance of solid waste management projects in NCC.

H₀₂. There are no effects of project planning on performance of solid waste management projects in NCC.

H₀₃. There is no effect of personnel skills on performance of solid waste management projects in NCC.

H₀₄. There is no effect of role of households on performance of solid waste management projects in NCC.
1.5 Significant of the Study

This research is important as its findings will help in determining the organizational constraints in performance of solid waste management projects in NCC, which can be used to come up with viable solutions to improve on solid waste management. This study will help project officers in identifying effective means of ensuring solid waste management projects implemented achieve great performance. The study will also give possible remedies and recommendations to help county governments come up with effective solid waste management projects. Furthermore, the study will provide a baseline for further research on other constraints affecting SWM projects in urban areas.

1.6 Scope of the Study

The study focused on organizational constraints and performance of solid waste management projects in Nairobi City County. The researcher conducted the research within the month of January 2018. The study was carried out in each category of solid waste projects within Nairobi County licensed by the KRA as listed below; organic waste SWM projects, paper SWM projects, plastic SWM projects, glass and metal SWM projects. Due to similarity of the services offered by these organizations two projects were selected for the study for each category. Different solid waste management managers from each category of solid waste projects participated in the study.

1.7 Limitations of the Study

The study faced challenges such as; a number of the respondents were reluctant to disclose some budgetary information, some of them were not ready to be interviewed may be due to the fear of reprimand by the higher authority. Some of the respondents were unwilling to cooperate due to their busy schedules. However, the researchers
overcame these by reassuring confidentiality to the respondents of any information given by them. For those with busy schedules, considerable amount of time for filling in the questionnaires was given.

1.8 Organization of the Study

This project was organized in five chapters. Chapter one covered background of the study, statement of the problem, objectives of the study, significance of the study, scope of the study and limitations of the study. Chapter two dealt with the literature review on organizational constraints and performance of solid waste management projects. This chapter has the following sub-topics; theoretical review, empirical Review, summary and research Gaps, and conceptual framework.

In chapter three, the study covered the research methodology, that is, research design, target population, sample and sampling technique, data collection procedures, validity of research instruments, reliability of study research instruments, techniques for data analysis and ethical consideration. Chapter four covered the data analyses and discussion. It also included chapter five which covered the summary of the study, conclusions and recommendations.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter is a survey of literature on performance of solid waste management within Nairobi City County in reference to other urban centers previously studied. It highlights; the theoretical review with the view of bringing forth the various theories of solid waste management, empirical review and organizational constraints and performance of solid waste management.

2.2 Theoretical Review

2.2.1 Zero Waste Theory

Modern examples of the zero waste concept were reported as early as 1893, (Farrel, 2002) with Paul Palmer being the first scientist to use the term officially in 1973, - Zero Waste Systems- insinuating that waste must be eliminated ‘upstream’ at the source. In the study it is argued that, the rational beginning point for managing solid waste effectively is to minimize or limit the amounts of waste, by managing it informally within the generation site or formally by an external entity after waste is disposed.

Zero waste is an essential design principle that offers guidelines on waste handling and management to prevent environmental hazards such as pollution and climate change. In a study carried out by Omollo (2000), on the Role of Public and Municipal Council in the discarding of domestic solid waste in Mombasa Kenya, zero waste theory was used as a tool for collectively analyzing the coordination of the waste management activities in a sectorial breakdown from the point of input of refuse materials to that of termination of
end products. The study found out that the Municipality has to an extent withdrawn its waste collection services from that area leaving it to private collectors who only serve individuals willing and able to pay for the services. Most previous in-roads had focus on diversification of skill and the deal has been to alter and repackage the products through innovations prompted by need and essentiality of solving an existing problem, for example plastics insalubrious headache (Magutu et al., 2010).

There are myriads of industries existing along this field. Ironically, they are lamed by deeply rooted challenges revolving around their performance. These include; underfunding, rudimental project planning, vaguely shaped and unprofessional personnel skills, unsettled demographic issues, unclear roles of households and finally, conflicting legislation policies (Mazzanti, 2008).

In the solid waste management sector, the theory of zero waste can be a frame of reference when designing and implementing new waste management systems and for analyzing and optimizing the existing ones. On the other hand, the interrelation of zero waste theory with the concept of evaluating the constraints in performance in this industry will help to keep check of all the aspects (technical and non-technical) and promote their efficiency. A phase of redistribution of responsibility more equitably from the national level, trickling down to counties and to households should be expertly tailored (Diaz et al., 1985).

2.2.2 Integrated Waste Management Theory

Integrated Waste Management theory was built under the model of Industrial Ecology by Randonelli (1988) and later Eva Pongrácz (2004). It explains that practical waste
management is a cyclical, goal-oriented process that tries to seek efficiency in solid waste management. It comprises of four different phases; waste collection, recycling, treatment and disposal. Waste management ought to be tackled from a holistic perspective where the complete cycle of material use is considered, that is different from the isolated, sectorial approaches. This approach advocated for an amplified urgency and effort to fast track implementation of generic methods to manage solid waste for sustainable development. SWM comprises waste generation and waste handling processes (UNSD, 2007).

The work of Kariuki (2014) on elements influencing SWM in Thika Sub County, used the integrated waste management theory to show that the inspecting and implementation of the collection, movement and disposal activities of waste companies are not adequate since there is weak enforcement of Thika Council bylaws. Solid waste services are not urgently attended to by the City Council which leads to illegal dumping hence unnecessary pilling. If Thika sub county Government were to mend on their solid waste services, the customers of those services may be willing to pay to ensure continued service provision. This will enable the County Government to have more funds to improve on SWM.

In solid waste management sector, integrated management theory helps in developing a workable framework where tasks in collection, recycling, treatment and disposal of waste are assigned accordingly. This can be done by encouraging public and private sectors, community leaders and the entire household members to partake in joint livelihood planning and effectively share the accrued benefits associated with working collectively.
2.3 Empirical Review

2.3.1 Project Funding and Performance of Solid Waste Management Projects

Implementation of SWM projects requires huge amount of funds for them to be successful. In developing countries, there is a major challenge of insufficient funds being allocated to management of wastes. The study carried out by Liyala (2011) argues that, waste management in developing countries is rarely budgeted for since it is not considered a priority by urban authorities. This has adverse effect on SWM projects that are implemented in the urban areas. Mainly, funds for management of wastes are from diverse external sources such as central government and donors who give funds as grants (Odhiambo, 2007). Very few projects are financially self-reliant thus, when the external funding is not forthcoming, the projects fail to kick off or come to a sudden halt (Liyala, 2011).

According to a study by Ogola (2013), low priority is attached to SWM in developing countries. Consequently, limited funds are budgeted for the sector by authorities, and the standards required for protection of public health and the environmental interests are not achieved. Extra financing of the sector should be evaluated and County Government Act and By-Laws should be modernized to conform to Kenya Waste Management Regulations 2006 to ensure its sustainability.

In NCC, the estimated budget for SWM in 2015-2016 fiscal years was about 100 million (equivalent to roughly Ksh 600 per capita or US$ 6). These resources can not suffice to provide for comprehensive SWM (Nation Daily, September 5 2016). There is little hope of raising the remainder by the county government following the acute problem with the
local taxation system which weakens the funding for activities offered by public institutions. This fragile financial basis of Kenyan governments can be complemented by gathering of user service charges. Nevertheless, users in city suburbs are unable to pay for the amenities, their willingness to cater for services which are inconsistent and ineffective is very low too. An effective approach that is used to raise money should be looked at in any collective project in order to make sure that it is sustainable (Odipo, 2015).

2.3.2 Project Planning and Performance of Solid Waste Management Projects

Inadequate planning often has a big influence on managing waste in developing nations. Improper planning in implementation of SWM projects affects their execution and performance. Moreover, as the study of Oberlin (2011) postulates, non-transparent legislation and unclear policies are major causes of poor performance of SWM projects. Interfered articulation of objectives, by political based agendas and self-interests weakens the institutions mandated with implementing SWM projects and creates a difficult community which does not acknowledge waste management initiatives (Okot-Okumu & Nyenje, 2011).

From The National Climate Change Action Plan, 2013-2017, SWM is a vital entry point for integrated urban administration and main obligation of local government. This complex work needs proper structural capacity besides collaboration among many stakeholders in both reserved and public sectors. The set objectives by the county solid managers, should measurably integrate city-level SWM projects and demonstration projects plus other identified deliverables. Process-oriented advisory services at national
government level on specific modules of the SWM system, e.g. communication methods and risk management should also be integrated (Kaloki, 2014).

The set policies should encourage documentation of integrated, city-level SWM projects and demonstration projects and process-oriented advisory services at national level on specific modules of the SWM system (Muhani, 2014). Njagi, (2015) concludes that the project planners should establish programs and materials for researches on human resources development. This is to breed comprehensive manuals and guiding principles for propagation of knowledge and skills through literature, case studies, project documents and articles in support exchange experiences. The ministry of planning and devolved county functions should establish more comprehensive policies and follow their articulation of the existent bills of law.

Strict execution of municipal plans were applied in developed nations like the USA and Sweden (Caplan et al., 2002) in providing solutions to serious waste management problems. Kenya has made progress in execution of such county regulations but there is still ground to cover in harmonizing and coordinating county government regulations and waste management laws (Kazungu, 2010). For example, households and traders should carry out waste separation where recyclable wastes can be put in a distinct container given by County or the waste handlers (Nairobi County by laws, Section 8(9). However, there has been broad abscond of such seemingly simple rules by domestic tenants and trade premises as County and waste handlers fail to provide separate containers for wastes that can be recycled hence mixing wastes of all kind together (Nation Daily, January 1, 2016).
Nairobi County Government Act and by extension most of the County by-laws are outdated in nature hence there is no consistence with Waste Management regulations 2006. A majority of the regulations are focused on disposal, while the former focuses on prevention. These discrepancies toughens the process of laying a strong foundation and building on sustainable institutional frameworks i.e. formal regulations’ systems, laws and guidelines; and informal agreements, customary laws and traditions, which educates social and economic interactions and behavior (Kaiganaine, 2012).

The County by-laws should be harmonized such that the established rule of law self-regulates, as permitted for by relevant authority such as the national government or the constitution. The relevant authority, mostly legislative arm or other government sector, should establish the control measures to ensure the regulations are executed. It should ensure such policies are embracing the dynamism of the society and are in cohesion with other closely related and even unrelated industries (Agboje et al., 2014).

2.3.3 Personnel skills and performance of solid waste management projects

The set-up and running of effective SWM projects requires adequate skills which pose a big challenge to many developing countries (Wando, 2014). Due to the fact that, the waste management skills level in the developing countries is wanting, majority of the project initiated fail to meet their full potential. A study by Liyala (2011) argues that little investments have been made into human capacity development. Moreover, the attitude of the community towards waste management is generally poor and urban communities do not engage in waste management (Scheinberg et al., 2011). Attitudes and perceptions affect the involvement of residents and authorities concerning management of solid waste. The publics’ attitude towards responsibilities of maintaining hygienic
surroundings, domestic sensitization to uphold healthy environments, domestic waste disposal, and children’s inculcation of expected participations in solid waste management and care for the Mother Nature is missing (Towett, 2015).

Public awareness on safe SWM practices seems relatively low in Nairobi. From earlier surveys and reports respondents do not display much concern regarding solid waste management (Nation Daily, September 5 2016). Considering the degradation of the physical environment and the negative health impacts associated, this low level of concern is striking. Yet, the negative environmental and health impacts, for instance pollution of air caused by waste when it is burnt, affect everybody in the community similarly, regardless of income level or regional boundary (Omuterema, 2013).

A large percentage of the populations assume that the county government is solely responsible for ensuring clean habitats. With this notion, majority of the citizens may fail to join hands in campaigns for cleaning up the surrounding. This hence can explain the reason as to why Nairobi city is enclosed in filth and yet residents seem to be unconcerned (Kariuki, 2015). Civic education is crucial in imparting general environmental care awareness, education and skills to public so as to face problem which is a shared responsibility of the County government and the communities (Liyala, 2011).

Assessment of Solid Waste Management as an Entrepreneurial Venture in Nairobi-2012 by Kaiganaine, Edith and Gathoni cites that literature should be supplied in trial to establish a predictive and illustrative order, among other domain challenges in designing and adopting appropriate SWM systems and actualizing their scientific systematization. Thus, incorporation of environmental concerns into industrial process and product design,
beyfitting social aspects principles such as sufficient morals and responsibilities, remains unclear and should be tailored to meet the set out needs and expectations. Establishing programs and materials for research on human resource development to breed elaborate manuals and guidelines for dissemination of know-how and skills is paramount. This can be done through case studies and documentation of resourceful literature.

2.3.5 Role of households and the performances of solid waste management projects

Effective SWM policies can only be coupled to a sensitized society. African urban areas like Nairobi (Kenya), Dar-es-salaam in Tanzania and Kinshasa in D.R.C. are characterized by aspects of waste management problems. These includes; uncontrolled dumping of solid waste on roadsides, drainage channels and recreational parks, thus posing health hazards to adjacent residential areas (Kazungu, 2010). For years, solid waste has been burned, re-used, or dumped with a qualitative level of processing which depends on the economic, cultural, social and political developments of communities (Bagchi, 1994). Unbalanced public training and low citizen participation adversely affects waste management processes.

Citizens should have knowledge on SWM and be more involved in the routine waste collection activities as they should know their responsibility in waste generation, collection timetable and the standard measures of waste management (Nkwocha and Emeribe, 2008). In the NCC public domain, diverse cultures are not fused with harmonious principles concerning waste.

There is limited focus on teachings, whether through tradition, in the existing curricula or in general skills acquisition on SWM, leaving it an enormous impediment (CSIRO,
2008). Primarily, civic education should train the society to minimize the level of waste they produce. Besides, society awareness creation on domestic waste separation at the source to have it ready for collection should be encouraged (Nation Daily, January 11, 2016).

The private sector controls about 70% in development schemes of a country (Rondinelli and Cheema, 1988). Considering the current changes in the entire waste sector, Nairobi City County government as well as private entities has come up with specific project proposals seeking implementation of initiatives to reduce carbon emissions and solid waste as a basic requirement for ecologically sustainable development (The National Climate Change Action Plan, 2013-2017).

However, the county offices provide inadequate assistance to private companies to enable them to operate in informal settlements (Kenya National Water Development Report, 2006). The non-cohesive nature of the task forces makes the event overwhelming, with the waste collection agencies that include the NCC and private projects only managing to gather approximately 20% to 30% of the produced waste material (Njoroge et al., 2014). The approximated remains of about 1200 tons of daily solid waste material is left unattended to, disposed in environmental unfriendly ways or in control of ad hoc community-based groups or voluntary groups in the city (JICA, 2015).

The research by Kariuki (2015) posits that inefficiency in physical capacity by government authority and other stakeholders engaged in handling of waste results to deplorable conditions in cities. Proactive community based organizations (CBOs) promises more fruition in building public awareness, and mobilizing the community in
general in participating the services and provision the necessary facilities to households and waste workers (Kazungu, 2010). The avenue through which the county government should involve both private and public organizations to boost their garbage management should be paved e.g. through public training and waste management campaigns (Liyala, 2011).

The three major stakeholders; public, NCC and the private sector, should be involved in all SWM phases that is waste collection, waste separation, waste transportation all the way to waste treatment and discarding. This will push for better reduction of waste that has to be disposed. They should be charged with proper handling, storage and disposing of the waste they generate to facilitate proper disposal and promote a clean environment for their activities (Kinyanjui, 2014).

2.4 Summary and Research Gaps

The literature review climaxes at a call for further researches in the area of organizational constraints in performance of the SWM projects. From the literature, it is clear that planning, skills and personnel, project funding and stakeholders have great influence on accomplishment of the goals of the SWM projects. The NCC advocates for effort to hasten the implementation of generic methods to manage solid waste and realize sustainable development (UNSD, 2007).

As demonstrated by the prerogatives, SWM should be first virtualized as a sensitive concern by all and then as an income earning activity. It is based on this concept that all aspects of a waste management system (technical and non-technical) should be analyzed together, since they are in fact interrelated and developments in one area frequently affect
practices or activities in another area (Morwood, 1994). Thus, action oriented learning system and methodology aimed at promoting efficiency, should be evaluated and deployed to reduce difficult and inefficient tasks (Cal Recovery Inc., 1993).

Table 2.1: Summary of the Knowledge Gaps

<table>
<thead>
<tr>
<th>Author</th>
<th>Focus</th>
<th>Findings</th>
<th>Knowledge Gaps</th>
<th>Focus of the current study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ng’era (2014)</td>
<td>Challenges and Prospects of Solid Waste Reuse and Recycling in Thika Town.</td>
<td>Thika Sub County has limited information on policies and by laws of ISW reuse and recycling.</td>
<td>Effect on the health of the workers handling hazardous materials for recycling and sustainable methods for disposal of e-waste are yet to be evaluated.</td>
<td>Determinants of Performance of Solid Waste Management Projects in Nairobi City County.</td>
</tr>
<tr>
<td>Muhani (2014)</td>
<td>An Outline for Viable E-Waste Management in Manufacturing and Processing Industries, Nairobi County, Kenya</td>
<td>There is pressing need for restructuring of the sector; Establishment of policies, Institutional framework and infrastructures, reinforcing the existing ones and improve the waste collection, transportation, treatment, storage, recovery and</td>
<td>There are prospects and chances in e-waste recycling activities in the country, which calls for analysis of approaches to environmental protection applicable to Nairobi County e-waste management.</td>
<td>Determinants of Performance of Solid Waste Management Projects in Nairobi City County.</td>
</tr>
<tr>
<td>Author</td>
<td>Title</td>
<td>Findings</td>
<td>Determinants of Performance of Solid Waste Management Projects in Nairobi City County.</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Kariuki (2015)</td>
<td>Dynamics affecting Solid Waste Management in Urban Centers: A Case study of Kiambu County, Kenya</td>
<td>Ineffective budgeting and physical capacity by government authorities and other players involved in waste collection results to deplorable conditions in cities.</td>
<td>The avenue through which the county government should involve the public and more private organizations to boost their garbage management is not well paved e.g. through public training and waste management campaigns.</td>
<td></td>
</tr>
<tr>
<td>Nyakio (2015)</td>
<td>Effects of Solid Waste Management in Embu Town, Embu County, Kenya.</td>
<td>There is need to develop a payment system so that the money collected can directly go to waste management.</td>
<td>Free public private partnership implementation to advocate for transparency and accountability.</td>
<td></td>
</tr>
<tr>
<td>Wando (2015)</td>
<td>Nexus between Environmental Safety and Solid Waste Management in Kenya Defense Forces.</td>
<td>There are gaps in sector regulations which make it hard for execution of laws to institutions like the KDF. Little capacity within the lead agencies and financial implications also influence greatly on the responsible bodies’ ability to enforce the regulations even where applicable.</td>
<td>To explore the potential investment opportunities and projections concerning SWM within the KDF.</td>
<td></td>
</tr>
</tbody>
</table>
2.5 Conceptual Framework

The conceptual framework depicted in Figure 2.1 shows the interrelationship between variables. The independent variables include; Project funding, project planning, skills and personnel and the role of households in SWM projects. The dependent variable is the performance of SWM projects. Therefore, the independent variables that is, organizational constraints are proposed to have an influence of the dependent variable as it is the performance of solid waste management projects.
Figure 2.1: Conceptual Framework

Source: Author, 2018
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design, target population, sampling procedure and sample size, research instrument, pilot study, data collection techniques, data analyses methods and ethical issues.

3.2 Research Design

The study used descriptive design. This involves explaining the elements of a particular distinct or of a group of items. According to Kothari (2005), the design helps the researcher to obtain clear information about the targeted group. Descriptive design provided a chance for the researcher to determine and understand various organizational constraints in performance of solid waste management projects in Nairobi City County, Kenya.

3.3 Target Population

The total number of representation of solid waste management projects categories was 5 (that is, metal, plastic, paper, glass and organic solid waste management projects). From these, 2 projects from each categories were selected since they offer similar services and also due to the fact that they are registered and licensed by Kenya Revenue Authority (KRA, 2016).

This translates to 10 solid SWM projects in total. This was the target project population from all SWM projects in the area of study. Among all projects selected, there were 629
employees (Institute for Social Accountability, 2017). The target population of all selected employees from the ten projects was 189 employees and 10 projects managers as illustrated in Table 3.1.

Table 3.1: Target Population

<table>
<thead>
<tr>
<th>Target population</th>
<th>Total Population</th>
<th>Sample</th>
<th>Total</th>
<th>Sampling Technique</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWM Employees</td>
<td>629</td>
<td>189</td>
<td>30%</td>
<td>Random Sampling</td>
</tr>
<tr>
<td>SWM Managers</td>
<td>10</td>
<td>10</td>
<td>100%</td>
<td>Purposive sampling</td>
</tr>
</tbody>
</table>

Source: KRA (2016)

3.4 Sampling Design

3.4.1 Sampling Procedure for Employees

In this research, the employees were the respondents. This is because the researcher was interested in the organizational constraints in solid waste management services and they were in a better position to give out information regarding solid waste management. There were 629 employees in all the ten selected projects for the study in the area. Thirty % of the employees which translate to 189 employees were sampled proportionally from every project. The employees were then stratified into male and female, this greatly narrows down the margin of selecting one gender. They were then randomly selected according to the number of employees in each project during data collection.

Stratified sampling was used to include both male and female thus clearing any gender imbalances. This, according to Gay et al (2009), is a process that allows researchers to verify methods that allows researchers to specify the possibility that each member of the targeted group will be picked for the sample. In order to give equal opportunities for
participation, simple random sampling was used for selecting employees. Stratified sampling aided the researcher in generalizations thus seeking representativeness of the wider population (Cohen et al., 2007).

Since the sample size rests solemnly on the nature of the inhabitants under study and purpose of the research, there is no fixed size for the sample (Cohen et al., 2007; Mugenda & Mugenda, 2009). A sample of 10% to 30% of population is acceptable for a survey research (Gay et al., 2009). For this study, the researcher chose to use 30% as the percentage of sampling in order to increase the reliability of results obtained.

3.4.2 Sampling Procedure for Managers

The SWM managers were automatically selected from the ten projects as respondents for this research and this was applied to the managers of the same projects. The sample size for managers was the same with that of projects which was 30% of the population in the study area.

3.5 Data Collection Instruments

The researcher used triangulation method of data collection, which according to Ogula (2008) involves the use of two or more research instruments to collect the necessary data. This also contributes to the trustworthiness of the data. The instruments were then developed based on the research questions, conceptual framework and related literature. The study used questionnaires for employees and interview schedules for managers as follows;
3.5.1 Questionnaires for Employees
The research employed questionnaires to elicit the desired information (Ogula, 2002). It was self-administered and took the respondents around 15 minutes to fill in.

3.5.2 Interview Guide for Managers
The researcher requested the managers to participate in an interview. They possessed more detailed and firsthand information about solid waste management services. An interview guide is a verbal questionnaire which entails data collection through direct verbal communications between the interviewer and the interviewee(s) Budhal (2000).

Thematic concerns on research questions guided on the division of the interview schedule into sections with probed as it were required. For all the managers selected, interviews were conducted in their projects and the expected time to fill in was between 25-35 minutes. This was purposed to help the researcher understand the managers’ perceptions in regard to organizational constraints in performance of SWM projects in the county.

3.6 Pilot Study
A pilot study is very crucial as it aids in disclosing any shortages that may be in the questionnaire so that they are addressed on time. In this study, the research instruments were piloted to 10 managers of Solid Waste Management projects and 189 employees of the same projects In Nairobi County. This was to test the reliability and validity of questionnaires which were used.

3.6.1 Validity of the Instruments
Validity is the accuracy and the meaningfulness of data collection instruments in measuring the intended objective (Mugenda and Mugenda, 2003). Orodho (2009), states
that validity involves three dimensions that is; construct, content and criterion validity. In this research study, validity was ensured through face validity, whereby the researcher had questionnaire reviewed by a statistician and a lecturer from the department of the business administration in the school of business at Kenyatta University both of whom are experts in research.

Construct validity was maintained through restricting the set questions to the conceptualizations of the variables thereby ensuring that the indicators of a particular variables fall within the same construct. Content validity, whereby the instrument was designed according to the study variables and their respective indicators of measurement. A coefficient of 0.80 or more simply shows that there is high validity of data (Mugenda and Mugenda, 2003).

3.6.2 Reliability of the Instruments

According to Orodho (2009), reliability refers to the consistency of an instrument to produce similar results at different times. In this research, the pilot study comprised of 10 project managers from solid waste management projects in Nairobi County, Kenya. The respondents’ questionnaires were tested using split-half techniques after the pilot study. Split –half techniques refers to the type of reliability testing based on the co-efficient of internal consistency of a research instrument.

The examination of internal consistency reliability was done by use of Cronbach’s Alpha coefficient since it is the most widely used measure of the reliability of instruments in social sciences. The Cronbach Alpha coefficient has got an advantage of producing a reliability estimate with only one administration. According to Kothari (2006), it is
revealed that acceptance value for Cronbach’s Alpha is between 0.7 and 0.9 but, an alpha coefficient of 0.5 or greater is enough to accept presence of internal consistency (Cooper, 2004). A loading of 0.7 indicates that about one half of the items variance was attributed to the construct. The researcher adopted Cronbach’s formula as follows;

\[ \alpha = \frac{N \bar{c}}{\bar{v} + (N-1)\bar{c}} \]

Where:

\( N \) is equal to the number of items,

\( \bar{c} \) is the average inter-item covariance among the items and

\( \bar{v} \) is equal to the average variance.

<table>
<thead>
<tr>
<th>Variables</th>
<th>No. of Items</th>
<th>Cronbach Alpha</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Planning</td>
<td>7</td>
<td>0.831</td>
<td>Reliable</td>
</tr>
<tr>
<td>Project funding,</td>
<td>7</td>
<td>0.712</td>
<td>Reliable</td>
</tr>
<tr>
<td>Personnel skills</td>
<td>8</td>
<td>0.796</td>
<td>Reliable</td>
</tr>
<tr>
<td>Roles of households</td>
<td>8</td>
<td>0.814</td>
<td>Reliable</td>
</tr>
<tr>
<td>Performance of Solid waste management projects</td>
<td>9</td>
<td>0.782</td>
<td>Reliable</td>
</tr>
</tbody>
</table>

Source: Researcher’s data (2018)

### 3.7 Data Collection Procedure

The project managers were contacted to seek permission to collect information from them and the purpose of the study was also explained. This was followed by questionnaires administration. The sample of the Questionnaires that was used is shown in appendix II.
3.8 Data Analyses and Presentation

The data collected through questionnaires used qualitative analysis. The data collected were first coded and then quantitatively analyzed according to statistical information derived from the research objectives and research questions. The data analyses made use of SPSS (Statistical Package for the Social Sciences) software program version 20. The raw data were examined and analyzed to establish accuracy. The process of analyses involved arranging, organizing into manageable units, synthesizing and looking for patterns among variables. Regression analyses were used to determine the effect that independent variables had on dependent variable. The information was displayed on tables, in order to give a clear understanding on the findings.

3.9 Ethical Considerations

Approval to conduct the research was sought from graduate school of Kenyatta University. Ethical clearance was obtained from Kenyatta University Ethical Review Committee (KUERC). The researcher sought informed consent from respondents prior to administering the questionnaires. The respondents were asked not to indicate their names and the questionnaires bore no identification linked to individual respondents. The respondents’ participation in the study was voluntary. The findings were only used for academic purposes and the data were stored in password protected computer system, where only the researcher and data analyst had access to.
CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the analyses of the findings pertaining the organizational constraints and performance of SWM projects in Nairobi City County. Descriptive statistics were used to analyze the information collected and summarized using tables. The study had the general objective as evaluating the organizational constraints and performance of solid waste management projects in Nairobi City County.

The specific objectives were; to determine how project funding affect the performance of solid waste management projects in NCC, to determine the effect of project planning on performance of solid waste management projects in NCC, to establish the effect of personnel skills on performance of solid waste management projects in NCC and to assess the effect of the role of households on performance of solid waste management projects in NCC.

The data collected was analyzed using SPSS version 20. The data analyses started with respondents rate, followed by respondents demographic information and finally by analyses and discussion of each of the objectives.

4.2 Respondent’s Rate

The primary data was collected using semi-structured questionnaires both for managers and the employees. A total of 189 questionnaires were administered for employees and 10 for project managers (Table 4.1).
Table 4.1: Respondents’ rates

<table>
<thead>
<tr>
<th>Category</th>
<th>Administered</th>
<th>Responded</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees</td>
<td>189</td>
<td>176</td>
<td>95</td>
</tr>
<tr>
<td>Managers</td>
<td>10</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>199</strong></td>
<td><strong>186</strong></td>
<td><strong>93.5</strong></td>
</tr>
</tbody>
</table>

**Source:** Author, 2018

From the findings, it was revealed that almost all administered questioners to the employees and the project managers were returned, that is 95% for the employees and 100% for the project managers. It showed that all the respondents were well represented in the study research hence reliability lifted. From the study done by Orodho (2004) that a response rate of 30% on a large sample of more than 30 items is representative enough. This is therefore satisfactory for the data analyses. The percentages shown in Table 4.1 (95% for the employees and 100% for the project managers), were adequate for the study.
4.3 Respondents’ Demographic Characteristics

Table 4.2: Demographic Information

<table>
<thead>
<tr>
<th>Respondent's Characteristics</th>
<th>Employees</th>
<th></th>
<th>Employers</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>51</td>
<td>29.6</td>
<td>4</td>
<td>40</td>
</tr>
<tr>
<td>Male</td>
<td>125</td>
<td>70.1</td>
<td>6</td>
<td>60</td>
</tr>
<tr>
<td>Non response</td>
<td>13</td>
<td>0.3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>189</td>
<td>100</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 25 years</td>
<td>82</td>
<td>39%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>25 to 35 years</td>
<td>54</td>
<td>17.10%</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>36 to 45 years</td>
<td>27</td>
<td>8.30%</td>
<td>4</td>
<td>40</td>
</tr>
<tr>
<td>46 to 55 years</td>
<td>11</td>
<td>4.20%</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>Above 55 years</td>
<td>2</td>
<td>1%</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>No response</td>
<td>13</td>
<td>0.3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>189</td>
<td>100%</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Level of Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary level</td>
<td>83</td>
<td>46.1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>O’Level</td>
<td>62</td>
<td>27</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Certificate/diploma,</td>
<td>29</td>
<td>18.3</td>
<td>6</td>
<td>60</td>
</tr>
<tr>
<td>Graduate</td>
<td>2</td>
<td>7.1</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>Post graduate</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>No response</td>
<td>13</td>
<td>0.3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>189</td>
<td>100</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Number of years spent working in the organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 to 5 years</td>
<td>87</td>
<td>51.6</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>6 to 10 years</td>
<td>61</td>
<td>32</td>
<td>6</td>
<td>60</td>
</tr>
<tr>
<td>11 to 15 years</td>
<td>19</td>
<td>10.1</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>16 to 20 years</td>
<td>9</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Above 20 years</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No response</td>
<td>13</td>
<td>0.3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>189</td>
<td>100</td>
<td>10</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Author, 2018
Table 4.2 showed that a majority of the employees were male with a frequency of 125 (70.1%) while a minority was female with a frequency of 51 (29.1%). Besides this, non-response had the frequency of 13 (0.3%). On the other hand as the Table indicates, majority of the project managers were male with a frequency of 6 (60%) while the minority were female with a frequency of 4 (40%), while non-response had the frequency of zero with 0 %. However, the percentage rate for the male employees and project managers were much higher than that of female employees and project managers. Never the less, the study showed that all the gender was well represented.

From Table 4.2, 39 % of the employees were below 25 years, while 17.1 % were between ages 25 to 35 years. The rest were between the ages of 36 to 45 years with 8.3 %, and 46 to 55 years with 4.2 % and others were above 55 years with 1 %. On the side of project managers, it was shown that none (zero %) were below 25 years, only 20 % of the project managers were between ages of 25 to 35 years. The rest were between the ages of 36 to 45 years with 40 %, 46 to 55 years with 30 % and others were above 55 years with 10 %. The data showed that age is an important factor for one to conduct a certain responsibility in any given task as well as to be assigned any leadership position. In addition, the study showed that all the ages within the most productive age gap were well represented in the research study.

Information on the employees’ level of education indicated that 46.1 % of them were primary level, 27 % with O’Level, and 18.3 % with certificate/diploma. The rest of the employees, were graduates with 7.1 %. None (0 %) of them were post graduate. The study revealed that all of the employees had attained at least the basic level of education and therefore could read and write. The project managers were then asked to mention
their highest education level and responded as represented in Table 4.2. The information showed that 60 % of project managers were certificate/diploma holders, 30 % were graduates, and 10 % of them were post graduate. However, none of them had O’Level and primary levels as their highest level of education. The information showed that most of the project managers are qualified to manage solid waste management projects in the county and therefore are capable of leading and coordinating well in various solid waste projects.

Information on the respondents’ number of years spent working in the organization; the data presented showed that 51.6 % of employees had worked in the projects for between 0 to 5 years, while 32 % had worked there for between 6 to 10 years. Only 10.1 % had worked in the project for 11 to 15 years while the rest had worked for between 16 to 20 years with 6 % and none (0 %) having worked for duration of above 20 years.

On the side of projects managers, 30 % of the projects’ managers had worked in the projects for between 0 to 5 years, while 60 % had worked there for between 6 to 10 years. Only 10 % had worked in the project for 11 to 15 years while none of them had worked for between 16 to 20 years and for duration of above 20 years both with 0 %. This clearly indicates that most of the projects managers had managed the projects for a considerably long period of time and therefore possessed good leadership qualities.
4.4 The Effect of Project Funding on Performance of Solid Waste Management Projects in NCC.

Participants were required to show the extent to which they agreed on how project funding influences performance of solid waste management projects and the outcome was as indicated in Table 4.3.

**Table 4.3: Project Funding**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean Score</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>The amount of funding for the projects is sufficient</td>
<td>2.94</td>
<td>1.86</td>
</tr>
<tr>
<td>Project funds undergo different stages before approval</td>
<td>3.11</td>
<td>1.04</td>
</tr>
<tr>
<td>Funds are adequately allocated to each project</td>
<td>3.21</td>
<td>1.97</td>
</tr>
<tr>
<td>There are provisions for additional funds in case of any shortage</td>
<td>2.80</td>
<td>1.82</td>
</tr>
<tr>
<td>There is no cases of funds being diverted for some other use other than the intended purpose</td>
<td>3.14</td>
<td>1.89</td>
</tr>
<tr>
<td><strong>Aggregate Mean Score</strong></td>
<td><strong>15.2</strong></td>
<td><strong>8.58</strong></td>
</tr>
</tbody>
</table>

*Source: Author, 2018*

From the findings (Table 4.3), on whether the amount of funds for the projects is sufficient, majority of the respondents strongly disagreed with an aggregate mean score of 2.94 and standard deviation of 1.86. As to whether the project funds undergo different stages before approval, majority of the respondents indicated they strongly agree with an aggregate mean score of 3.11 and standard deviation of 1.04. On whether funds are adequately allocated to each project majority indicated that they strongly disagree with an
aggregate mean score of 3.21 and standard deviation of 1.97. On the statement that there are provisions for additional funds in the case of any shortage, majority indicated that they strongly disagree with an aggregate mean score of 2.80 and standard deviation of 1.82. On the statement that ‘there are no cases of funds being diverted for some other use other than the intended’ majority of the respondents indicated that they strongly disagree with an aggregate mean score of 3.14 and standard deviation of 1.89.

From the findings, the amount of funds for the projects is insufficient and this could be the main reason as to why project funds undergo different stages before they are approved as indicated by the majority. It was revealed that funds are not adequately allocated to each project probably because of it being inadequate. The findings revealed further that there are no provisions for additional funds in case of a shortage as majority of the participants illustrated. This could be due to insufficiency of funds in solid waste management programs.

Nevertheless, cases of funds being diverted for other uses other than the intended ones were revealed. This could probably be because managerial have other activities besides solid waste management probably because they no longer consider Solid Waste Management activities a priority. This would therefore negatively affect the outcome of SWM. The issue of findings agrees with the study carried out by Liyala (2011) which argues that, solid waste management in developing countries is poorly financed mainly because it is not considered a priority by urban authorities. In addition, Ogola (2013) argues that low priority is attached to SWM in developing countries. The findings concur with those of Odhiambo (2007) and Liyala (2011) that very few projects are financially
self-reliant and so when the external funding is not available, solid waste management projects fail or come to an end.

4.5 The Effect of Project Planning on Performance of Solid Waste Management Projects in NCC.

Respondents were asked to indicate the extent to which they agreed on how project planning influences performance of solid waste management projects and the findings were as indicated in Table 4.4.

Table 4.4: Project Planning

<table>
<thead>
<tr>
<th>Statement</th>
<th>Aggregate Mean Score</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees are carried along in project planning decisions</td>
<td>1.98</td>
<td>1.69</td>
</tr>
<tr>
<td>The goals and objectives of the projects are realistic</td>
<td>2.51</td>
<td>1.44</td>
</tr>
<tr>
<td>There is effective monitoring of projects in your organization</td>
<td>2.47</td>
<td>1.49</td>
</tr>
<tr>
<td>There is an effective control system in your organization</td>
<td>2.46</td>
<td>1.48</td>
</tr>
<tr>
<td>There is feedback on project progress</td>
<td>2.30</td>
<td>1.61</td>
</tr>
<tr>
<td>There is quality review of projects</td>
<td>1.93</td>
<td>2.01</td>
</tr>
</tbody>
</table>

Source: Author, 2018

From Table 4.4, on the statement that employees are carried along in project planning decisions, majority of the respondents indicated that they strongly disagree with an aggregate mean score of 1.98 and standard deviation of 1.69. On whether the goals and objectives of the projects are realistic, majority of the respondents indicated that they strongly disagree with an aggregate mean score of 2.51 and standard deviation of 1.44. On the statement that there is effective monitoring of projects in your organization,
majority of the respondents indicated that they strongly disagree with an aggregate mean score of 2.47 and standard deviation of 1.49. On whether there is an effective control system in your organization, majority of the respondents indicated that they strongly disagree with an aggregate mean score of 2.46 and standard deviation of 1.48.

On whether there is feedback on project progress, majority of the respondents indicated that they strongly disagree with an aggregate mean score of 2.30 and standard deviation of 1.61. On the statement that ‘There is quality review of projects’ majority of the respondents indicated that they strongly disagree with an aggregate mean score of 1.93 and standard deviation of 2.01.

From the findings, it was revealed that employees are not carried along in project planning decisions. This probably could be due to the fact that, the management does not take the activity so serious and hence fails to involve the employees. This has contributed to lack of transparency and can easily lead to production of negative results.

It was also observed that the goals and objectives of the projects are not realistic, and there is no effective monitoring of projects in their organization. This could be due to the issue of insufficient funds hence difficulties in carrying out monitoring activities. The results showed that there are no effective control systems in their organization and in addition, there is no feedback on project progress. This could be due to the fact that the management lack transparency amongst themselves and hence unable to give out feedback. The study revealed further that there is no quality review of projects.

The findings coincide with that of Oberlin (2011) who postulates that non-transparent legislation and unclear policies are major causes of poor performance of SWM projects.
He further explains that interfered articulation of objectives, by political based agendas and self-interests weakens the institution mandated with implementing SWM projects and creates a difficult community which does not acknowledge waste management initiatives.

Kaloki (2014) stresses the importance of human resourcing, communication methods and risk management for good results in solid waste management. He adds that the set objectives by the county solid waste managers, should measurably integrate city-level SWM projects and demonstration projects plus other identified deliverables like process-oriented advisory services at central government level on specific elements of SWM systems.

Similarly, Muhani (2014) states that the set policies should encourage documentation of integrated, city-level SWM projects and demonstration projects and process-oriented advisory services at central government level on specific components of the SWM system. This therefore makes it easy for the solid waste management activity to perform better. Giving feedback is crucial, as in the study carried out by Njagi (2015) that the project planners should establish programs and materials for researches on human resources development and have manuals and guidelines for dissemination of important information, know-how and skills throughout the projects.

4.6 The Effect of Personnel Skills on Performance of Solid Waste Management Projects in NCC.

Respondents were asked to indicate the extent to which they agreed on how project planning influences performance of solid waste management projects and the findings were as indicated in Table 4.5.
Table 4.5: Personnel Skills

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean Score</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>The project execution team consists of qualified employees.</td>
<td>2.67</td>
<td>1.69</td>
</tr>
<tr>
<td>Division of labor is observed in the organization</td>
<td>1.95</td>
<td>1.98</td>
</tr>
<tr>
<td>There are job refresher courses for employees from time to time</td>
<td>2.17</td>
<td>1.90</td>
</tr>
<tr>
<td>The job refresher courses lead to value addition in the organization</td>
<td>1.99</td>
<td>1.95</td>
</tr>
<tr>
<td>Employees are evaluated after every job refresher course</td>
<td>2.41</td>
<td>1.87</td>
</tr>
</tbody>
</table>

**Aggregate Mean Score**  
**11.19**  **9.39**

**Source:** Author, 2018

On whether the project execution team consists of qualified employees, majority of the respondents indicated that they strongly disagree with an aggregate mean score of 2.67 and standard deviation of 1.69. Majority of the respondents strongly disagreed that division of labor is not observed in the organization with an aggregate mean score of 1.95 and standard deviation of 1.98. On the statement that there are job refresher courses for employees from time to time, majority of the respondents indicated that they strongly disagree with an aggregate mean score of 2.17 and standard deviation of 1.90. Majority of the respondents strongly disagreed that the job refresher courses lead to value addition in the organization with an aggregate mean score of 1.99 and standard deviation of 1.95. On the statement that employees are evaluated after every job refresher course majority
of the respondents indicated that they strongly disagree, with an aggregate mean score of 2.41 and standard deviation of 1.87.

From the findings, it was revealed that the project execution team does not consist of qualified employees. This could be probably because majority of the respondents had attained O’levels and very few had done SWM related courses. In this study, adequate skills are lacking and these would probably adversely affect the effectiveness in solid waste management. It was observed that division of labor is not observed in the organization and hence this limits the effectiveness of the work in projects.

It was also revealed that there are no job refresher courses for employees from time to time and this could be probably due to lack of funds. It was found out that the few present job refresher courses do not lead to value addition in the organization. At the same time, employees are not evaluated after every job refresher course and this could be due to insufficiency of funds.

These findings relates to that of Wando (2014) which states that waste management skills level in the developing countries is wanting, majority of the project initiated fail to meet their full potential. Another study by Liyala (2011) argues that, little investments have been made in human capacity development but not in activities of solid waste management. The findings are supported by that of Wando (2014), who notes that the set-up and running of effective SWM projects requires adequate skills which pose a big challenge to many developing countries. According to the study by Liyala (2011) he argues that little investments have been made in human capacity development and hence poor solid waste management.
4.7 The Effect of Role of Households on Performance of Solid Waste Management Projects in NCC.

Respondents were asked to indicate the extent to which they agreed on how the role of households influences performance of solid waste management projects and the findings were as indicated in Table 4.6.

Table 4.6: Role of Households

<table>
<thead>
<tr>
<th>Statement</th>
<th>Aggregate Mean Score</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>The community is informed on proper waste handling</td>
<td>2.31</td>
<td>1.79</td>
</tr>
<tr>
<td>The community is briefed on the importance of proper waste disposal</td>
<td>3.06</td>
<td>1.48</td>
</tr>
<tr>
<td>The community has a positive attitude towards waste disposal</td>
<td>2.09</td>
<td>1.92</td>
</tr>
<tr>
<td>Members of the community are employed as a form of Corporate Social Responsibility (CSR)</td>
<td>2.04</td>
<td>1.95</td>
</tr>
<tr>
<td>The community is involved in decision making regarding waste handling</td>
<td>2.61</td>
<td>1.74</td>
</tr>
<tr>
<td><strong>Aggregate Mean Score</strong></td>
<td><strong>12.11</strong></td>
<td><strong>8.88</strong></td>
</tr>
</tbody>
</table>

**Source:** Author, 2018

From Table 4.6, on whether the community is informed on proper solid waste handling, majority of the respondents indicated that they strongly disagree. This had an aggregate mean score of 2.31 and standard deviation of 1.79 that they strongly agree. On the statement that ‘The community is briefed on the importance of proper waste disposal’, majority of the respondents indicated that they strongly disagree with an aggregate mean score of 3.06 and standard deviation of 1.48.

On the statement that ‘The community has a positive attitude towards waste disposal’ majority of the respondents indicated that they strongly disagree, with an aggregate mean score of 2.09 and standard deviation of 1.92. On the statement that ‘Members of the
community are employed as a form of Corporate Social Responsibility (CSR)’ Majority of the respondents indicated that they strongly disagree with an aggregate mean score of 2.04 and standard deviation of 1.95. On the statement that ‘the community is involved in decision making regarding waste handling’ majority of the respondents indicated that they strongly agree with an aggregate mean score of 2.61 and standard deviation of 1.74.

From the findings, it was observed that the community is not informed on proper waste handling and probably that is why they have little knowledge on solid waste management since they don’t consider it as of any importance. It was also found out that the community is not briefed on the importance of proper waste disposal. Insufficiency of funds may be the reason as to why there are no such services as going to the field to sensitize the community.

It was also revealed that, the community does not have a positive attitude towards waste disposal. This could be due to the fact that they are not informed on proper waste handling, not involved in decision making regarding waste handling nor briefed on the importance of proper waste disposal. In addition, members of the community are not employed as a form of Corporate Social Responsibility (CSR) and this would hence make them lack interest in solid waste management.

These findings are in line with that of Scheinberg et al., (2011) who found out that the attitude of the community towards waste management is generally poor and urban communities do not engage in waste management. The study also explains that attitudes and perceptions affect the involvement of both inhabitants and authorities regarding solid waste management.
The findings also concur with those of Towett (2015) who argues that people’s opinion on responsibilities for maintaining clean surroundings, sensitization of household to uphold health environments, disposal of household waste, and children’s inculcation of expected participations in solid waste management and care for the Mother Nature. The level of public awareness about safe solid waste management practices seems to be relatively low in Nairobi. From earlier surveys and reports respondents do not display much concern regarding solid waste management (Nation Daily, September 5 2016).

Every community should be informed on the essence of solid waste management since it affect everyone, as it is explained by Omuterema (2013) that the negative environmental and health impacts, for instance air pollution caused by the burning of waste, affect everybody in the community similarly, regardless of income level or regional boundary. This is also supported by Liyala (2011) who states that civic education is crucial in imparting general environmental care awareness, education and skills to public to face problem as a shared responsibility of both the individual in the respective communities and the county government.

The findings agree with those of Kazungu (2010) who states that effective solid waste management policies can only be coupled to a sensitized society. The lack of sensitization is characterized by mostly African cities such as Nairobi (Kenya), Dar-es-salaam (Tanzania) and Kinshasa (D.R.C.) for instance, evidence of waste management problems such as uncontrolled dumping of solid waste on roadsides, drainage channels and recreational parks. Other studies such as that of Nkwocha and Emeribe (2008) suggest that citizens ought to have knowledge on SWM and routinely participate in waste
collection activities since they should be aware of their responsibility in waste generation, collection timetable and the standard procedures of waste management.

It is revealed from other studies that there is limited focus on teachings, whether through traditions, in the existing curricula or in general skills acquisition on SWM, leaving it an enormous impediment (CSIRO, 2008).

Primarily, civil educators should train the society on minimization of solid waste produced, this is in line with this study’s findings. In addition, the research by Kariuki (2015) explains that inefficiency in actual abilities by government agencies and other stakeholders tasked in waste management results to deplorable conditions in cities. The findings are also supported by those of Liyala (2011) who suggests that the part of the revenue that the county government collects should be used to involve the public and more private organizations to boost their garbage management as well as for public training and waste management campaigns.

4.8 Performance of Solid Waste Management

Regarding the performance of SWM, participants were asked to indicate the extent to which they agreed or disagree with the statement and the findings were as indicated in Table 4.7.
Table 4.7: Performance of Solid Waste Management

<table>
<thead>
<tr>
<th>Statement</th>
<th>Aggregate Mean Score</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projects are carried out within the set time frame</td>
<td>2.41</td>
<td>1.59</td>
</tr>
<tr>
<td>The set goals and objectives of the projects are met at the end of the project</td>
<td>2.19</td>
<td>1.93</td>
</tr>
<tr>
<td>Projects are carried out in line with budgets</td>
<td>2.07</td>
<td>1.98</td>
</tr>
<tr>
<td>There is consistency in the performance of projects</td>
<td>2.64</td>
<td>1.35</td>
</tr>
</tbody>
</table>

Source: Author, 2018

From Table 4.7, on whether the projects are carried out within the set time frame, majority of the respondents indicated that they strongly disagree, with an aggregate mean score of 2.41 and standard deviation of 1.59. On the statement that ‘The set goals and objectives of the projects are met at the end of the project’ majority of the respondents indicated that they disagree, with an aggregate mean score of 2.19 and standard deviation of 1.93. On the statement that ‘Projects are carried out in line with budgets’ majority of the respondents indicated that they strongly disagree, with an aggregate mean score of 2.07 and standard deviation of 1.98. On the statement that ‘There is consistency in the performance of projects’ majority of the respondents indicated that they strongly disagree with an aggregate mean score of 2.64 and standard deviation of 1.35.

From Table 4.6, it was observed that projects are not carried out within the set time frame, and this could be as a result of many factors such as financial problems, lack of qualified personals, improper planning among others. In connection to that the set goals and objectives of the projects are not met at the end of the project as indicated by majority of the respondents. Besides projects are not carried out in line with budgets probably because funds are not adequately allocated to each project and also due to the fact that there are cases of funds being diverted for some other uses other than the
intended ones. Therefore as a results of all these, there is no consistency in the performance of projects.

These findings corresponds with those of Magutu et al., (2010) and Mazzanti (2008) who explain that there are myriads of industries existing along the field of solid waste management, which are lamed by deeply rooted challenges revolving around their performance in underfunding, rudimental project planning, vaguely shaped and unprofessional personnel skills, unsettled demographic issues, unclear roles of households and finally, confronting legislation policies. Additionally, these findings are in line with the study of Oberlin (2011) who postulates that, non-transparent legislation and unclear policies are major causes of poor performance of SWM projects as is it observed in the study research.

4.9 Regression Analysis

Multiple regression analysis to test the statistical relationship among variables (independent) on organizational constraints and performance of solid waste management projects in Nairobi city county, Kenya were conducted. The researcher applied the statistical package for social sciences (SPSS version 20) to code, enter and compute the measurements of the multiple regressions for the study. Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (Performance of Solid waste management projects in Nairobi County) that is explained by all the four independent variables (project planning, project funding, personnel skills and roles of households).
From the finding in Table 4.8, the established regression equation was organizational constraints and performance of solid waste management projects in Nairobi County = 0.128 + 0.679X₁ + 0.692X₂ + 0.634X₃ + 0.245X₄.

From the above regression model, project planning, project funding, personnel skills and roles of households to a constant zero, performance of solid waste management projects would be at 0.128. It was established that a unit increase in project planning would cause an increase in performance of solid waste management projects by a factor of 0.679. This study concur with the one carried out by Aduda and Kingoo (2012) on the relationship between electronic banking and financial performance among Commercial Banks in Kenya whereby it was revealed that investment in e-banking has a positive relationship with bank performance. A unit increase in project funding would cause an increase in performance of solid waste management projects by a factor of 0.692, a unit increase in personnel skills would cause an increase in Performance of Solid waste management projects by a factor of 0.634 and finally, a unit increase in roles of households would cause an increase in performance of solid waste management projects.
by a factor of 0.245. Therefore, it can be concluded that at 5% level of significance and 95% level of confidence, all the significance values were found to be less than 0.05, an indication that all the values were statistically significant to make conclusions of the study. Similarly the study by Taylor (2008) argues that the needs of sustainability that are incorporated into every stage throughout the life cycle of the projects is normally very important and ensures that project runs very well.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
The chapter provides the summary of findings, gives the conclusions, recommendations and suggestions for further study research based on the objectives of the study.

5.2 Summary of the Findings

5.2.1 The Effect of Project Funding on Performance of Solid Waste Management Projects in NCC.
Majority of the respondents strongly disagreed that the amount of funds for the projects is sufficient with an aggregate mean score of 2.94 and standard deviation of 1.86. It was revealed that majority of the respondents strongly agree that project funds undergo different stages before approval with an aggregate mean score of 3.11 and standard deviation of 1.04. On whether funds are adequately allocated to each project majority indicated that they strongly disagree with an aggregate mean score of 3.21 and standard deviation of 1.97.

There are no provisions for additional funds in the case of any shortage as majority indicated that they strongly disagree with an aggregate mean score of 2.80 and standard deviation of 1.82. Majority of the respondents indicated that they strongly disagree that there are no cases of funds being diverted for some other use other than the intended with an aggregate mean score of 3.14 and standard deviation of 1.89.
5.2.2 The Effect of Project Planning on Performance of Solid Waste Management Projects in NCC.

Employees are not carried along in project planning decisions as majority of the respondents indicated that they strongly disagree with an aggregate mean score of 1.98 and standard deviation of 1.69. On whether the goals and objectives of the projects are realistic, majority of the respondents indicated that they strongly disagree with an aggregate mean score of 2.51 and standard deviation of 1.44. On the statement that there is effective monitoring of projects in your organization, majority of the respondents indicated that they strongly disagree with an aggregate mean score of 2.47 and standard deviation of 1.49.

On whether there is an effective control system in your organization, a good number of participants indicated that they strongly disagree with an aggregate mean score of 2.46 and standard deviation of 1.48. On whether there is feedback on project progress, majority of the respondents indicated that they strongly disagree with an aggregate mean score of 2.30 and standard deviation of 1.61. On the statement that ‘There is quality review of projects’ majority of the respondents indicated that they strongly disagree with an aggregate mean score of 1.93 and standard deviation of 2.01.

5.2.3 The Influence of Personnel Skills on Performance of Solid Waste Management Projects in NCC.

On whether the project execution team consists of qualified employees, majority of the respondents indicated that they strongly disagree with an aggregate mean score of 2.67 and standard deviation of 1.69. Majority of the respondents strongly disagreed that division of labor is not observed in the organization with an aggregate mean score of 1.95
and standard deviation of 1.98. On the statement that there are job refresher courses for employees from time to time, majority of the respondents indicated that they strongly disagree with an aggregate mean score of 2.17 and standard deviation of 1.90. Majority of the respondents strongly disagreed that the job refresher courses lead to value addition in the organization with an aggregate mean score of 1.99 and standard deviation of 1.95. On the statement that employees are evaluated after every job refresher course majority of the respondents indicated that they strongly disagree, with an aggregate mean score of 2.41 and standard deviation of 1.87.

5.2.4 The Influence of Role of Households on Performance of Solid Waste Management Projects in NCC.

From the result community is not informed on proper solid waste handling, as majority of the respondents indicated that they strongly disagree with an aggregate mean score of 2.31 and standard deviation of 1.79. On the statement that ‘The community is briefed on the importance of proper waste disposal’, majority of the respondents indicated that they strongly disagree with an aggregate mean score of 3.06 and standard deviation of 1.48. On the statement that ‘The community has a positive attitude towards waste disposal’ majority of the respondents indicated that they strongly disagree, with an aggregate mean score of 2.09 and standard deviation of 1.92.

On the statement that ‘members of the community are employed as a form of Corporate Social Responsibility (CSR)’ majority of the respondents indicated that they strongly disagree with an aggregate mean score of 2.04 and standard deviation of 1.95. On the statement that ‘the community is involved in decision making regarding waste handling’
Majority of the respondents indicated that they strongly agree with an aggregate mean score of 2.61 and standard deviation of 1.74.

5.2.5 Performance of Solid Waste Management

From Table 4.7, on whether the projects are carried out within the set time frame, majority of the respondents indicated that they strongly disagree, with an aggregate mean score of 2.41 and standard deviation of 1.59. On the statement that ‘The set goals and objectives of the projects are met at the end of the project’ majority of the respondents indicated that they disagree, with an aggregate mean score of 2.19 and standard deviation of 1.93. On the statement that ‘projects are carried out in line with budgets’ majority of the respondents indicated that they strongly disagree, with an aggregate mean score of 2.07 and standard deviation of 1.98. On the statement that ‘there is consistency in the performance of projects’ majority of the respondents indicated that they strongly disagree with an aggregate mean score of 2.64 and standard deviation of 1.35.

5.3 Conclusions

The amount of funds for the projects is insufficient and this could be the main reason as to why project funds undergo different stages before they are approved probably for prioritization. The results also showed that funds are not adequately allocated to each projects. The findings also revealed that there are no provisions for additional funds in the case of shortage. The results showed that there are cases of funds being diverted for some other uses other than the intended ones.

Employees are not carried along in project planning decisions. This probably could be because; the management does not take the activity so serious. It was also observed that
the goals and objectives of the projects are not realistic, and there is no effective monitoring of projects in their organizations. The findings also revealed that there are no effective control systems in their organizations as well as feedback on project progress. Therefore, the projects have no quality review. It was found out that projects are not carried out within the set time frame and in connection to this the set goals and objectives of the projects are not met at the end of the project.

The project execution team does not consist of qualified employees and division of labor is not observed in their projects and this limits the effectiveness of the work in projects at large. It was also revealed that there are no job refresher courses for employees from time to time and the few that are there, it was revealed that they do not lead to value addition in the organization. At the same time employees are not evaluated after every job refresher course.

The households are not informed on proper solid waste handling. It was also found that, the community is not briefed on necessity of proper solid waste disposal. Moreover, it was revealed that, the households do not have a positive attitude towards waste disposal. In addition, members of the community are not employed as a form of Corporate Social Responsibility (CSR), also the community is not involved in decision making regarding waste handling.

5.4 Recommendations

The following recommendations were made:

There is need for financial provision to enable the services of solid waste management to be carried out effectively. The county government could provide funds to solid waste
management projects to enable them work effectively. In addition, solid waste management projects should put their services as the first priority so that even the national government as well as the county government may be able to provide them with financial resources.

Employees need to be carried along in project planning decisions, suggestively through active participation. There is also a need to have control systems in the organization, give out feedback on project progress to enable quality review of the projects. Finally, projects should be carried out within the set time frame, and this will lead to accomplishment of set goals and objectives at the end of the project period.

The SWM projects should consist of qualified employees who are knowledgeable enough to help in effective solid waste management. Job refresher courses for employees from time to time ought to be implemented in projects so that employees could get motivated in many other ways. This can be observed upon evaluation refresher courses. The SWM projects should hire highly qualified personnel, to sensitize citizens on proper solid waste management and involve them on routinely waste collection activities, as they should be made aware of their role in waste generation, collection timetable and standard procedures of waste management.

Moreover, there is a need for awareness creation to households for separation of waste at the source, to make it ready for collection thus leading to effective solid waste management. The government agencies and other stakeholder in solid waste management need to be efficient in physical capacity building in waste collection so as to have a deplorable condition in urban areas such as in Nairobi. It was also recommended that, the
community ought to be briefed on the importance of proper solid waste disposal. Furthermore, the households need to have a positive attitude towards waste disposal. Finally, members of the community are supposed to be employed as a form of Corporate Social Responsibility (CSR), as well as community getting involved in decision making regarding waste handling.

5.5 Areas for further studies

Based on the findings, further studies should be carried out on the effective measures to solve the organizational constraints in performance of solid waste management projects in other counties in Kenya.
REFERENCES


City of Nairobi Environmental Outlook (2007).


Kariuki C. W., (2010). Factors Influencing Solid Waste Management in Urban Centers: A Case of Thika Sub County, Kiambu County, Kenya


APPENDICES

Appendix I: LETTER OF INTRODUCTION

Mary Gathong’a,

Kenyatta University,

P. O. Box 43844 – 00100,

Nairobi.

Cell phone: 0721767895.
To whom it may concern,
Dear Respondent,

RE: REQUEST TO COLLECT DATA

I am a post graduate student pursing Masters in Business Administration (Project Management option) at Kenyatta University. I am currently conducting a research on organizational constrains in performance of solid waste management projects in Nairobi City County. Your organization has been selected by random sampling to participate in this study. The, purpose of this letter is to kindly request your permission to engage in the research for data collection.

The information gathered from you will be highly confidential and will only be used for research purposes only.

Your cooperation will be highly appreciated and thank you in advance.

Yours faithfully,
Mary Gathong’a,
MBA Student,
Kenyatta University.
Appendix II: QUESTIONNAIRE GUIDE

SECTION 1: PERSONAL INFORMATION

1 Gender

Male [ ]

Female [ ]

2. Age of the respondent (tick)

Below 25 years [ ]

25 to 35 years [ ]

36 years to 45 years [ ]

46 years to 55 years [ ]

Above 55 years [ ]

3. Level of Education (Tick as Appropriate)

Primary Level [ ]

‘O’ Level [ ]

Certificate/Diploma [ ]

Graduate [ ]

Postgraduate [ ]
4. Position in the organization

Senior staff [ ]

Middle staff

Junior staff [ ]

5. Number of years you have spent working in your organization

0 to 5 years [ ]

6 to 10 years [ ]

11 to 15 years [ ]

16 to 20 years [ ]

21 years and above [ ]

SECTION II: PROJECT FUNDING

Key: 5 – Strongly Agree, 4 – Agree, 3 – Don’t Know, 2 – Disagree and 1 – Strongly Disagree

a) Please respond to the following statements by indicating the extent to which you agree or disagree as per the given choices.

<table>
<thead>
<tr>
<th>Statement</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 The amount of funds for the projects are sufficient</td>
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</tbody>
</table>
Project funds undergo different stages before approval

Funds are adequately allocated to each project

There are provisions for additional funds in the case of shortage of funds

There is no cases of funds being diverted for some other use other than the intended

### SECTION III: PROJECT PLANNING

b) Please respond to the following statements by indicating the extent to which you agree or disagree as per the given choices.

<table>
<thead>
<tr>
<th>Statements</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Employees are carried along in project planning decisions</td>
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<tr>
<td>2 The goals and objectives of the projects are realistic</td>
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<tr>
<td>3 There is effective monitoring of projects in your organization</td>
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</tr>
<tr>
<td>4 There is an effective control system in your organization</td>
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</tr>
<tr>
<td>5 There is feedback on project progress</td>
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<td></td>
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<tr>
<td>6 There is quality review of projects</td>
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</tbody>
</table>
SECTION IV: PERSONNEL SKILLS

c) Please respond to the following statements by indicating the extent to which you agree or disagree as per the given choices.

<table>
<thead>
<tr>
<th>Statement</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  The project execution team consists of qualified employees.</td>
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</tr>
<tr>
<td>2  Division of labour is observed in the organization</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>3  There are job refresher courses for employees from time to time</td>
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<tr>
<td>4  The job refresher courses lead to value addition in the organization</td>
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</tr>
<tr>
<td>5  Employees are evaluated after every job refresher course</td>
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</table>

SECTION V: ROLE OF HOUSEHOLDS

d) Please respond to the following statements by indicating the extent to which you agree or disagree as per the given choices.

<table>
<thead>
<tr>
<th>Statements</th>
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<th>4</th>
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<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  The community is informed on proper waste handling</td>
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</tr>
<tr>
<td>2  The community is briefed on the importance of proper waste disposal</td>
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</tbody>
</table>
The community has a positive attitude towards waste disposal

Members of the community are employed as a form of Corporate Social Responsibility (CSR)

The community is involved in decision making regarding waste handling

SECTION VI: PERFORMANCE OF SOLID WASTE MANAGEMENT

e) Please respond to the following statements by indicating the extent to which you agree or disagree as per the given choices

<table>
<thead>
<tr>
<th>Statements</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1 Projects are carried out within the set time frame</td>
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<tr>
<td>2 The set goals and objectives of the projects are met at the end of the project</td>
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<tr>
<td>3 Projects are carried out in line with budgets</td>
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<tr>
<td>4 There is consistency in the performance of projects</td>
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</tbody>
</table>

Thanks for your Time and Cooperation.
Appendix III: RESEARCH AUTHORIZATION FOR NACOSTI

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

Our Ref: D53/28323/2014

DATE: 22nd February, 2017

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MARY WANJIKU GATHONG’A – REG. NO.
D53/28323/2014

I write to introduce Ms. Mary Wanjiku Gathong’a who is a Postgraduate Student of this
University. She is registered for MBA degree programme in the Department of Business
Administration.

Ms. Mary intends to conduct research for a MBA Project Proposal entitled, “Organizational
Constraints and Performance of Solid Waste Management Projects in Nairobi City County, Kenya”.

Any assistance given will be highly appreciated.

Yours faithfully,

MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL

GK/inn
Appendix IV: APPROVAL OF RESEARCH PROPOSAL

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

FROM: Dean, Graduate School
TO: Mary Wanjiku Gethong’a
     C/o Business Administration Dept.

DATE: 22nd February, 2017
REF: D53/28323/2014

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

We acknowledge receipt of your revised Research Proposal as per our recommendations raised by the Graduate School Board of 8th February, 2017 entitled “Organizational Constraints and Performance of Solid Waste Management Projects in Nairobi City County, Kenya”.

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University’s Website under Graduate School webpage downloads.

Thank you.

GIDEON KAIMENYI
FOR: DEAN, GRADUATE SCHOOL

C.c. Chairman, Department of Business Administration

Supervisors:

1. Dr. Samuel Maina
C/o Department of Business Administration
Kenya University