DETERMINANTS OF IMPROVED SOLID WASTE MANAGEMENT: A CASE OF MOMBASA COUNTY, KENYA

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DECLARATION

This research project report is my original work and has not been presented for a Degree Award in any other University or Learning Institution.

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This research project report is being submitted for examination with my approval as the university supervisor.

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DEDICATION

I devote this work to my children Natasha; Nael and Nadia to aim for higher excellence. Education is Key to success and I will be a happy mom seeing them go beyond this level. I hereby pray give them the power to read and read now!

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

DWG	-	Domestic Waste Generation
SWM	-	Solid Waste Management
NEMA	-	National Environment Management Authority
VAT	-	Value Added Tax
SPSS	-	Statistical Package of Social Science
RC	-	Recycling
GP	-	Government Policies
PP	-	Public Participation
EA	-	Education and Awareness

ABSTRACT

Solid waste management is meant to ensure that the processing of solid waste materials is done in a way that best addresses the range of public health, aesthetics, conservation and other environmental considerations. Counties are spending significant resources to address this problem, but the overall situation is far from satisfactory and rapid and haphazard urban growth is making the problem worse. The purpose of this study was to establish the determinants of effective Solid Waste Management in Mombasa County. The study was guided by four objectives which were: to Examine the extent to which recycling materials contribute towards enhanced solid waste management in Mombasa County; to assess the extent to which government policies contribute towards enhanced solid waste management in Mombasa County; to establish the extent to which education and awareness contribute towards enhanced solid waste management in Mombasa County and to assess the extent to which public participation contributes towards enhanced solid waste management in Mombasa County. The study was guided by three hypotheses; stakeholder hypothesis; behavioral finance hypothesis and institutional hypothesis. The researcher used descriptive survey research design. The researcher used a questionnaire to collect data. The sample size was 240 respondents from a population of 450 solid waste management department employees of Mombasa County. Validity and reliability of the research was conducted and questionnaire was found to be reliable. Illustrative inferential insights which are mean, standard and rate were utilized; tables and figures were used to exhibit information. The coefficient of determination was 0.843 which implied that there was 84.3% variation in solid waste management in view of advancement in recycling. The study found out that the correlation coefficient was 0.918 which indicated that there was a significant relationship between solid waste management and recycling. The study found out that there was 87.5% variation in enhanced solid waste management because of progress in government policy. The study found out that the correlation coefficient was 0.935 which show that there was significant relationship between solid waste management and government policy. The study found out that there was a correlation coefficient of 0.877 which elucidates that there was a positive relationship between improved solid waste management and education and awareness. The study found that education and awareness was 0.729 which meant that there was 72.9% variation in upgraded solid waste organization due to change in public participation. The study found that the association coefficient was 0.854 which illuminates thusly there was a positive relationship between improved solid waste and public participation. From the findings of this study, it can be concluded that public participation contributes influences on improved solid waste management, recycling contributes influences on improved solid waste management, education and awareness contributes influences on improved solid waste management, government policy contributes influences on improved solid waste management. The study recommended that for improved solid waste management public participation has to be practiced at all times, recycling should be embraced, education and awareness is paramount especially in processes, training, and equipment used etc. and government policies need to be passed and implemented in good faith.

Key Words: - Solid Waste Management; Recycling; Government Policies; Education and Awareness & Public Participation

CHAPTER ONE
INTRODUCTION

1.1 Background Information

Rapid urbanization has its consequences, which are mainly driven by entry of migrants from rural areas in search of better source of revenue. The major challenges of Municipal Solid Waste Management (MSWM) in many towns include the development and consumption of products with materials that are less biodegradable (Asase et al 2009). There is increase of environmental problems in both developed and developing countries around the world due to the ever increasing quantities of household or domestic solid wastes. This has led to a complex environmental policy challenges. Rapid urbanization has brought the problem of managing solid waste in urban areas. All the nations worldwide face the challenge of managing the increasing solid waste in an environmentally effective way, technologically feasible, economically affordable and socially acceptable manner. Waste management is also not glamorous; yet without it, every city would cease to exist (Zurbrugg, 2002). Therefore, all the cities in the world have come up with ways of dealing with the problem.

Solid waste generated by developing countries in the world which comprises of one to two third is not collected (Zerbock, 2003). The uncollected waste is dumped indiscriminately in the streets and in drains, which result to water flooding, insect breeding and rodent vectors and the spread of diseases. This problem is more severe in African countries especially in the capital cities. In many countries the government is not able to deliver waste management services effectively, with very minimal regulation of private sector which has led to illegal dumping of domestic and industrial waste. Generally, in these countries management of solid waste is given very low priority. Due to rapid rate of the urbanization process, a growing number of cities in African countries still face challenges to provide their populations with adequate solid waste management services, adequate water supply and sanitation. Most of urban solid waste in Ghana is deposited either on roadsides, waterways, unapproved dump sites, drainage system, open places or on roads. Solid waste poses many threats to public health, and when it is not properly and appropriately managed it adversely affects flora and fauna as well as the environment (Geraldu, 1995).

United Nations projections estimate that with more than 20 million Tanzanians living in urban areas the urbanization rate with increase from 24% in 2005 to 38% by 2030 (Barr, 2007). The ever - increasing solid waste have to be processed and managed whereas in African countries the waste management capacity available is often poor and insufficient, especially in areas with low income. The developing countries city authorities do not provide adequate solid waste management services, water and sanitation to their increasing population (Abduli, 2007).Urban solid waste management poses very serious environmental problem in East African countries capital cities. The increased domestic solid waste quantities constitute a huge challenge for the local authorities. A good understanding in terms of technological and managerial aspects is needed in order to improve domestic solid waste management strategies. The role of households as main producers of solid waste is overlooked despite availability of solid waste management policy documents, reports and projects. Domestic actors as the main waste handlers, stakeholders and potential contributors are normally not involved in decision making and solving solid waste challenges which led to insufficient assessment of the role of households in urban areas solid waste management.

It is estimated that over 60% of Dar es Salaam population lives in informal settlements,(Mwakalinga et al, 2009). The informal settlements is characterized by lack of good infrastructure, densely populated, social services and amenities which make them vulnerable because of lack of proper waste management. Only about 40% in average of the solid waste generated is collected and deposited off (Chinamo, 2003); while a considerate number of households do not have access to proper waste management. Lack of proper household waste management has led to dumping of waste in streets, open pits, near houses and in storm drainage channels. This poses various hazards such as health risk, existence of rubbish piles, and lack of resident aesthetic appearance. In most parts of Dar es Salaam solid waste management is outsourced from solid waste management services contractors which include community based organization (CBO) and private companies. These solid waste contractors lack expertise and resources in terms of finance, waste management equipment and technical expertise in the area of waste management.

People have always found ways of disposing their waste from their households since the beginning of time (Bassis, 2000). To ensure people safety from possible risks such a health hazards proper waste and garbage disposal is very important. Inappropriate waste and garbage disposal is a major sociological challenge due to its ability to contaminate the surroundings and living things. The effects of health in both animals and humans causes damage to eco-systems and destruction of our environment. The more solid waste we produce, the more we have to collect and dispose. Many countries including Kenya experience challenges in waste management (Gakungu, Gitau, Njoroge and Kimani, 2012). Most of the waste management practices challenges experienced by developed and developing countries include collection,transport, treatment, generation of waste, reuse and disposal of waste. In Kenya urban areas between 30 and 40 percent of waste is uncollected, with 50 percent of Kenyan population lacking proper waste disposal mechanisms of the waste they generate and collect (Otieno, 2010).

The 80% percent of waste collection transport in the country is still grounded, therefore, if urgent and effective measures are not taken, in future the country will have unmanageable vast waste generation. The country will in coming days be engulfed in waste because of rise in waste generation, if urgent measures are not taken with 80 percent of transport collection being grounded (Otieno, 2010).Issues affecting waste management in Kenya are same from one town to another. Therefore, general problems undermining efficient waste management practices in Nairobi County can be extended to a town in Kiambu County. Ikiara et al., (2004) state that the City Council of Nairobi (CCN) lacks adequate and properly trained staff to handle city's waste management processes, and as a result the vision and goals of the waste management department within the CCN cannot be realized. The authors continue to highlight that the department within the CCN charged with waste management has yet to develop a policy formulation and standardize operational guidelines for the city waste management practices, and as a result, the staff members in the department are ever embroiled in daily crisis management. According to Magutu et al., (2010), the unprofessional manner through which the CCN handles water management is evident in the collection methods and dumping methods they use, which is mainly door-to-door type. The city council load their waste collection trucks using a manual method that is time consuming and unprofessional. The collected waste is then transported using open trucks to dumpsites located adjacent to residential areas, posing huge health and

environmental risks to the citizens. In addition, the city council has not established formal structures to prevent dumping of hazardous and toxic waste into these dumpsites.

1.2 Statement of the Problem

Developments from lifestyle changes and subsequent changes in family utilities have made issues in current social condition complex. Disposal of waste into road side, unpaved streets, and undeveloped land led to breeding of various insects, rodents and diseases. Lack of proper SWM, that is increased waste, improper waste disposure and misuse is one of the new issues in the world, which have resulted to plague epidemic, the Black Death disease that killed half of 14thCentury Europeans. This led to the start of public health control measures in the 19th century which include disposal of food waste collected in a sanitary manner in order to control rodents and flies, the vectors of disease in connection with public health and inappropriate storage of solid wastes. Industrialized nations have argued, which to date generates vast amount of solid waste per consumer making the danger of disposed wastes to be twofold, directly from home and indirectly from goods manufacturing factories not only directly in the home. In response, many cities in the developed nations have set up garbage collections bodies, from men, who buy useful garbage materials and products and collect the waste recycle the same to produce better materials and dispose unusable waste.

In Mombasa County and Kenya at large, waste collection and transportation is very much informal. Open dumping is the major waste disposal method being employed with very minimal recovery techniques. As a result of the informal dumping recyclables are mixed with other waste both at the household level, industrial level and at the dumpsite. Currently, Mombasa County has developed waste management programs, legislation and policies which have brought a number of positive impacts to the local people. For example, putting up of LED lights and dustbins outside all shops, offices and buildings in town and shopping centers, embracing and emphasizing on waste management lessons and training in school and institutions respectively. Most solid waste pickers in the world are known to die in an alarming rate due to solid waste pollution related diseases and the enticing demand in solid waste picking is still on the increase. Waste in general continues to increase daily along with the related risks, however, as it stands to date not much has been done, in terms of research study, to unveil what contributes to all these,

human solid waste related risks among the society. Nevertheless, researches so far done, have concentrated on solid waste management and practices, focusing on re-use, recycle and reduce (3R), a concept adopted by the Japanese industries, that does not take care of risks involved in the whole venture. However, serious research study on solid waste projects, collection, dumping, recycling and reuse habits to investigate their related effects are so far lacking, the results of which is the witnessed related risks and consequent death to most of the project's workers. Hence the essence of this study was to investigate the determinants of risk in solid waste management projects in Kenya, in relation to legal framework, technology, personnel skills and policy, assumed to influence risk in solid waste management projects, with particular interest in Mombasa County, and hence bridge the gaps.

1.3 Purpose of the Study

The main purpose of this research was to examine determinants of improved solid waste management (SWM): A case of Mombasa County, Kenya.

1.4 Objectives of the Study

This research study was guided by the following four objectives:

i) To examine the extent to which recycling contributes towards improved solid waste management in Mombasa town.
ii) To assess the extent to which county government policies contributes towards improved solid waste management in Mombasa town.
iii) To establish the extent to which education and awareness contributes towards improved solid waste management in Mombasa town.
iv) To assess the extent to which public participation contributes towards improved solid waste management in Mombasa town.

1.5 Research Questions

The study answered the following research questions:

i) To what extent does recycling contribute towards improved solid waste management in Mombasa town?
ii) To what extent do government policies contribute towards improved solid waste management in Mombasa town?

iii) To what extent does education and awareness contribute towards improved solid waste management in Mombasa town?
iv) To what extent does public participation contribute towards improved solid waste management in Mombasa town?

1.6 Research Hypotheses

The following hypotheses were tested with significance level of 95%:

i) H_a: There is a significant relationship between recycling and improved solid waste management.
ii) H_a: There is a significant relationship between government policies and improved solid waste management.
iii) H_a: There is a significant relationship between education and awareness and improved solid waste management.
iv) H_a: There is a significant relationship between public participation and improved solid waste management.

1.7 Significance of the Study

To the region legislature of Mombasa and devolution service specifically, the examination was relied upon to add certainty to approach and chiefs on the methods for strong waste administration. The examination was additionally to contribute learning to the field of academicians as reference material and as beginning stage for further research of a similar sort in the comparative climatic ecological conditions. It would likewise give crucial data to imminent speculators in the urban waste administration adventure.

1.8 Assumptions of the Study

Obtaining of data is foreseen to be troublesome on account of the high privacy that people and organizations append to such data. Most authorities won't deliberately give interviews until the point that they have looked for consent from higher specialist. The examination additionally expect that the legislatures are focused on practical enhancements in strong waste administration, the legislatures pass empowering strategies and guidelines in help of SWM and that administration official get and read the information item, and apply new ideas learned.

1.9 Limitations of the Study

The study was expected to cover waste emanating from production, operations and household and will be targeting the devolution and public service administration department employees of Mombasa County as respondents. This is an opportunity area that may assist in ensuring more sustainability from an environmental perspective in Mombasa County. The research was carried out within a period of not more than one year to its final report submission.

1.10 Delimitations of the Study

The study was specifically limited to the influence of recycling; government policies; education and awareness and public and private involvement on solid waste management (SWM) in Mombasa County, Kenya.

1.11 Definition of Significant Terms

Solid Waste Management (SWM) - the procedure of age, stockpiling, source detachment, accumulation, transportation, preparing, reusing and transfer of both natural and inorganic waste in an efficient way

Recycling - This include gathering waste materials, which could be productively recovered and used for making new materials and products

Government Policies - any course of action by those in authority which intends to change a certain situation.

Education and Awareness - enlightening the general public through vital information dissemination on what is supposed to be done, its benefits, how it is supposed to be done and how it can be done

Public Participation - an activity or a progression of moves a man makes to include themselves in issues of government or network. These exercises incorporate casting a ballot, going to gatherings, taking an interest out in the open or private political discourse or discussion on issues, marking a request of on a coveted government activity or approach, volunteering in

network exercises and contributing cash to a political gathering or hopeful of one's decision among other comparable exercises

1.12 Organization of the Study

The research study comprises of five chapters. The first chapter provides background information, problem statement and research study objectives. Chapter two of the study consists of the literature review. Chapter three includes research methodology. Chapter four presents the analysis of data based on study objectives. Finally the last chapter presents the research study findings, discussions, conclusions and recommendation.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviews exact writing composed by authorized researchers and analysts with reference to the components that impact strong waste administration and management in the local, urban regions and globally. Theoretical and a conceptual framework are also developed to show the relationship between the study variables.

2.2 Solid Waste Management Industry in Kenya

As demonstrated by the National Environment Management Authority, (2015), Kenya has a creating human mass and development in urbanization. The urban centers have pulled in gigantic masses of easygoing settlements tenants and the cubicle class. This urbanization and extended riches has prompted vast volume of waste in terms of waste streams. These intensify by making industrialization of the Kenyan economy. Poor waste management services occur in major towns despite the proximity of laws and approaches of controlling waste. Urban locals are overwhelmed by the own waste generated, along these lines influencing general success and nature. Amid the time waste organization has been the direction of the adjacent specialists. In any case, most neighborhood pros did not sort out the establishment of authentic waste organization systems and therefore allotted little resources for its organization.

Urban networks have inefficient waste gathering and exchange systems. For instance, an examination enhanced the circumstance Nairobi exhibits that around 30 - 40% of the waste delivered isn't assembled and under portion of the people is served. 45% of the waste made is collected and disposed at Giotto Dumpsite in Nakuru County. 18% is recovered and the rest total in the normal. Waste transportation is done using open trucks, ass trucks and handcarts. These types of waste transportation have led to waste littering, making flaw waste, in particular plastics waste. Regardless, a number of locals have gotten legitimate transportation trucks as stipulated by the Waste Management Regulations (WMR). The County have also privatized waste transportation through Private Public Partnership courses of action. Move of waste in the country remains a significant test as a vast segment of the regions require genuine and adequate exchange regions.

2.3 Challenges Posed By Solid Waste

Initially individuals have expected to discover a method for discarding their garbage, Basis (2016). An appropriate way of waste transfer is vital to guarantee everybody's wellbeing. The ill-advised way of waste transfer of refuse is a noteworthy sociological issue today because of its capacity of harming our surrounding and its capability to be deadly to every single living thing. Its effects increase the danger of antagonistic wellbeing of people and creatures; makes harm eco-frameworks and quicken the obliteration of our condition. The more waste we create, the more we need to discard. Mankind keeps on creating and delivers waste that describes contemporary society, dating from the modern upset with the end goal to satisfy its most central needs of life. Be that as it may, the subsequent creation and utilization of assets wind up with conspicuous issues in regard to strong waste age and administration in assorted parts of the world, Ojewale (2014).

Garbage is more successfully seen than portrayed. Something can be named waste when it is not any more obliging to the owner or it is utilized and fail to meet its need, Gourlay (1992). As exhibited by Miller (1988), waste is any purposeless, appalling or disposed of material that isn't fluid or gas. An unusual blend of substances which include metals, cardboard, vegetable materials, fine development and plastic depict waste, Sengupta and Sengupta (2014). The problem of poor environmental sanitation affects all community members especially children who suffer most in the event of disease outbreak. Children are found playing and defecating onto the garbage dump sites bare-footed. This may cause disease infection in the children. For example, the outbreak of cholera in Bauleni claimed the lives of at least three children, in Bauleni Township alone more than 30 cases of Cholera were reported during the 2015-2016 rain seasons, Idlibi (2017). Disease connected with poor sanitation, such as malaria and diarrhea are very common. Waste in Bauleni Township is regularly discarded in open zones, canals, and at the back of or in the middle of structures, most likely because of the deficient waste administration hardware or the long separations to the clean destinations. The specialists particularly advertise sellers additionally leave their losses in heaps for quite a long time before they are at last gathered and taken to clean locales for transfer.

2.4 Improved Solid Waste Management Determinants

This section reflected on some of the main determinants of improved solid waste management from a literature point of view as follows;

2.4.1 The Extent Recycling Influences Improved Solid Waste Management

Recycling is the process whereby unnecessary materials and products are recovered and reprocessed and converted into new different products or materials. Situations where the waste can't be avoided, Recycling is the best option, Zhu et al., (2007).Reusing is more than developing the life of landfills. It is tied in with affecting the best usage of the advantages we to have open and directing those benefits for who and what is to come. It is tied in with directing water, essentialness, land and unrefined materials. Reusing joins dealing with utilized materials into new things to dismiss maltreatment of possibly pleasing materials, lessen the utilization of crisp unpleasant materials, diminish centrality use, decrease air polluting and water contamination by diminishing the need for "conventional" squander trade, and lower ozone depleting substance radiations when wandered. Manufacturing factories can change their current waste management to decrease the amount of waste made by putting into place new structure, make, purchase, or use of things or materials. As an example, operators can simply print and set printer default settings to two sided to save paper. Recycle of things and packaging draws out the critical closeness of these materials in that limit yielding reusing. Reuse is the fix, reestablishing, washing, or just fundamental recovery of worn or used things, furniture, building materials and Machines.

Reusing is a key territory of present-day waste decreasing and is the third piece of Recyclable materials join distinctive sorts of glass, paper, metal, plastic, materials, and equipment. Anyway, treating the earth or other reuse of biodegradable waste, for instance, sustenance or garden misuse isn't expectedly seen as reusing. Materials to be reused are either passed on to a get-together concentration or got from the curbside, by then orchestrated, cleaned, and reprocessed into new materials bound for social affair. Reusing Saves money, vitality, trees the planet Earth. When we observe the environment, we determine that almost all kinds of waste can be recycled however the difference then comes in the value that is generated from the recycled material, the value of the materials recycled also majorly vary depending on the demand for such recycled

material, materials that have high demand levels often have a higher sale value compared to materials with low resale value. Material recycling mostly depends on the policies that a government has enforced on recycling and also the availability of buyers, Zhu et al., (2007). There are several advantages of recycling. For waste managers, recycling helps in the overall reduction of the waste volume, there is a lot of cost saved from handling, collecting, transporting such waste and disposal of the waste in general. The economy will also benefit from recycling through reduction of cost of fertilizers since organic waste can easily be transformed into fertilizers, in addition the economy benefits since more people will get employment. The environment is the overall beneficiary of recycling since there will be an overall sustainability of environment and waste going into storage sites will be reduced resulting to a more manageable system, Zhu et al, (2009).

Waste segregation at source is a key step towards effective recycling. Segregating plastics from paper at source can enable companies to find better ways of recycling paper and plastic, Festus &Ogoegbunam (2012). One of the most difficult activities in the recycling process is the mixture of the different types of waste these could be mixture of paper, plastic and even food stuff. It is difficult to effectively recycle waste when is not separated or segregated at source, in addition mixing of different types of wastes leads to poor quality of the products being recycled, Hosoda (2014). Isolation of a wide range of waste at source is the first and most vital advance that will prompt sparing of assets, for example, time and work with regards to waste reusing. In a stringent measure, recycle of a material would make a new supply of a relative material and products which include; used office paper to new office paper, or used foamed polystyrene into new polystyrene.

2.4.2 Government Policies and its role on Improved Solid Waste Management

One method to ensure effective waste management is having proper waste management systems which are included in the policies and procedures within a company. The foundation of the National Environment Management Authority (NEMA) in Kenya for instance has seen it having greater command in implementing and guaranteeing consistence with more extensive natural laws, Muniafu and Otiato (2010). NEMA holds fast to protect and enhance the nature of condition through coordination, help and authorization while in the meantime it urges people and

corporate to progress in the direction of maintainability of the earth. A standout amongst the best methods for limiting or lessening waste is through presentation of a tax policy that will ensure that individuals are taxed based on the amount of waste they produce. In addition, higher taxes can be imposed on raw materials that contribute most to waste to encourage manufacturers to produce goods that generate less waste, Hariz and Bahmed (2013). Reduction of VAT on items with environmentally friendly labels could help in reducing the amount of waste from a production and a consumer perspective. Goals for waste prevention and incorporation of such goals in the waste strategies and policies are vital in promoting sustainability. It may be tough to enforce waste prevention measures when dealing with consumption but it is definitely a key measure when it comes to waste legislation and policy making. The major shortcomings in the management of waste is not being able to inform waste generators decrease the amount of waste being generated, since that is the first step to effective waste management. Instilling waste discipline is another loophole, there is no system in place that would ensure people are responsible for the waste they generate and that they are liable for their actions. Putting up effective systems to ensure individuals are held accountable for the amount of waste generated would be a plus. Environmental assessment audits are also not adequately done both within the companies and outside. These assessments would be important in identifying whether individuals and companies comply and that they adhere to the safety standards, Muniafu and Otiato (2010).

As indicated by Kariuki (2015) adherence to made rules and guidelines by policy makers in developed nations energized handling significant litter organization issues in the urban networks. Approval of city by-laws in Kenya is an incredible arrangement and should be done in line with government by-laws and waste association laws. Section 8 (9) of Nairobi county government by-laws requires the occupiers of nuclear family and exchange premises to separate abuse which can be reused and put in another compartment given by County or the waste supervisor. This course of action make sure that each generator of strong waste separates abuses which the ability would then have to be reused and put in discrete holders. A critical issue and enhancement impediment in creating countries is the nonattendance of as a rule prepares for waste administration at the area and national measurements, Ogawa (2001). Developing countries waste management has less thought compared to that paid to urban natural issues from point of methodology designers and scholastics, for example waste water treatment and air pollution. Regardless, the improper

dealing with an exchange of waste includes a noteworthy issue: it adds to the high horridness and passing rates in various Third World urban zones. Neglecting the manner in which that city professional has held the responsibility of directing waste from their beginning once again three centuries back, the issue only all over got the idea it advocated. Picked administrators and furthermore the metropolitan pros by and large consign the commitment of directing city waste to junior specialists, for example, sterile assessors.

2.4.3 Education and Awareness and its influence on Solid Waste Management

Successful industrial waste management is often attributed to many reasons arising from policy implementation; however, the main reason why most companies have succeeded in industrial waste management is due to public waste awareness and support. One of the challenges facing proper waste management in Nigeria is lack of proper public waste awareness. This is also observed by the fact the public has a negative attitude towards waste management; hence the government should carry out campaigns to enlighten the public on waste and waste management, Babalola (2010). In addition, involving communities in waste management programs often promotes publicity with tips on waste management hence eventually minimizing waste, Young, Ni and Fan (2010). Similarly, Wilson (2013) indicates that two main underpinning group of drivers of waste management include public awareness and responsibility issues. Waste awareness is critical in ensuring that there is waste management sustainability. Conduct instruments assume a job in waste administration procedures through activities that advise and teach a portion of these activities incorporate waste reviews, school programs, publicizing, preparing, and rivalries. Training has been appeared to be a basic segment in empowering open investment in reusing programs. Waste educational programs would ensure that communities are involved by increasing awareness and commitment towards waste, increasing capability of different staff in identifying opportunities that would lead to waste minimization and avoidance and ensuring that operational staff are adequately trained for foster compliance with relevant waste regulations and be able to report any negative implications or observations, Bolaane (2006).

Bringing issues to light about various waste administration projects can have constructive outcomes, yet there are a few techniques which can be utilized to change conduct to enhance investment or right issues. When new activities are presented, individuals will require time to

modify until the point when the new arrangement winds up typical Behavior, yet once this Behavior is built up it is hard to break. Awareness of impacts of waste have not been enforced in most areas, we see many companies and communities littering everywhere, this is evidence of lack of proper awareness to the people in residential area about waste management, collection and disposal. The National Waste Management (NWM) body main objective is to create waste management awareness and adding the practical waste projects to the basic education curriculum, Timlett and Williams (2009). Waste awareness and participation can also be enhanced more by creating recognition programs such as the cleanest town competitions, coming up with specific performance evaluation criteria and reward and recognition In addition, producer responsibility must be aligned to the overall waste management plans and consumer awareness programs should also be incorporated in the industry waste management plans. Waste awareness can also be created through door to door awareness and motivation programs which involve establishing contact with participants and providing feedback, it also helps in reducing the time lag that would be created between information communication and when the actual waste collection begins. Importance of door to door awareness campaigns is that communication is effectively passed on to the participant and often reduces any elements of rumor mongering, building confidence of the participants and also assisting in clarifications of any issues of concern. Motivating individuals towards waste intolerance is a plus since; the individuals will exert pressure to the companies and authorities that will ensure proper waste management support and implementation, Muniafu and Otiato (2010).

For the outstanding execution of waste undertaking, there is requirement for gifted work force that can fulfill waste administration service. These assignments generally join organizing the general outline of execution system, setting up and working relentless modernized structure, empowering learning in clever events and supervising correspondence of checking and appraisal revelations. Where the staff capacity to deal with undertaking usage is sketchy, at that point there ought to be space for redistributing quality talented staff to execute similar orders. This implies there has to have a qualified and gifted staff from beginning which present distinctive aptitudes from measurable, information administrators and undertaking implementers. Public training is one of the basic segments required in a strong waste undertaking usage framework. With regards to extend usage, there are a few terms that are utilized for human preparation for example, checking and assessment preparing, training and human asset advancement for observing and

assessment. In this way, there ought to be clarity on obligations to guarantee professionals set aside to lead and guide the execution of the undertaking is fit for consequently accomplishment of value venture results.

2.4.4 Participation and its role in improved Solid Waste Management

Kaloki (2015) revealed that, solid waste management was carried out by cart pushers, resource merchants, private solid waste collectors, public, and neighborhood and estate associations. It was further found out that the County Government collects and then transports waste to a specific dumping site. Potential roles that the public played were waste separation, composting, distribution of solid waste containers and subsequent re-usage of collected and separated wastes. Various challenges however suffice in attempts to enhance sustainable waste management for instance; inadequate resources, averseness, poor attitudes and solid waste management knowledge gap. In order to ensure homesteads readily participate in waste re-use, quality of environmental education ought to be good, an efficient waste collection regime and attitudes and subsequent enforcement scheme sought to be enhanced. Waste collection regimes therefore need to receive adequate environmental education and attention in order to ensure that the public embrace waste re-use with ease. This will consequently translate to a ready market of re-used products thus ensuring that the demand levels for such related products are sustainable. If the public can be associated and readily involved in waste re-use projects so as to contribute their own efforts, sustainability of waste management programs can be achieved hence yield success. Relevant authorities ought to consider the social and economic status of the community involved in waste management so as to ensure that started waste management projects are successful in the immediate surroundings, Tsai (2007). Various social factors for instance higher income and education levels elicit the public will to readily participate in proper solid waste management programs for instance waste re-use since they know that these efforts are geared to protect the environment. Joardar (2000) argued that waste re-use strategies that are based on door-to-door collection charge regimes can indeed support waste sorting and re-usage. This system can stimulate there-usage of wastes hence significantly reducing on waste generation at source. Further, these charges can be charged to commercial and residential establishments with special considerations to household size.

2.5 Theoretical Framework

According to Creswell (2009), theoretical framework is a theory that solves and explains a particular problem. The framework identifies a plan for investigating and interpreting the findings. This study is based on the following theories;

2.5.1 Stakeholder Management Theory

In their recommendation of the hypothesis, Jones and Wicks (1999) started by sketching out the essential space of partner administration hypothesis. The fundamental premises of partner administration hypothesis are that the enterprise has associations with numerous constituent gatherings "partners" that effect and are influenced by its choices, the nature of these connections impacts the firm and its partners and the interests of every single (real) partner have inborn esteem. Likewise, the hypothesis expresses that no arrangement of interests is accepted to command the others and the hypothesis centers on administrative basic leadership, Howell et, al., (2015). Thusly, partner hypothesis shows that associations do expressly deal with their associations with various partner gatherings. Getz and Timur (2012) point out that in spite of the fact that this is expressively valid; associations seem to oversee partners for both instrumental reasons and, at the center, standardizing reasons. Jensen (2010) imagines partnerships as in a general sense social, which is, as an arrangement of essential partner gatherings, an intricate arrangement of connections between and among intrigue bunches with various rights, targets, desires and duties.

The partner idea can be a helpful apparatus in strong waste administration in Mombasa town. Specifically, the procedure known as, partner investigation, can give associations a focal point through which to focus on the full scope of invested individuals. Partner hypothesis recommends that we should focus on the interests of any gathering or person who is influenced by, or may influence, a choice or arrangement. The finishes of agreeable movement and the methods for accomplishing these closures are fundamentally inspected in partner hypothesis in a way that they are not in numerous speculations of key administration, Getz and Timur (2012). In any case, the partner hypothesis isn't without feedback.

2.5.2Behavioral Finance Theory

The speculation communicates that manner toward direct, dynamic principles, and saw social control, together shape a man's lead objectives and practices, Fishbein and Ajzen (1975). As demonstrated by the speculation of thought about action, if people survey the suggested directive as constructive (mindset), and if they think their basic others require them to play out the lead (passionate standard), this results in a higher desire (motivations) and they will presumably do thusly. The resolve and duty of family interest in strong waste administration depends to an expansive degree on the manners by which the County Governments arranges proper proportions of strong waste administration usage and social part of the network. Poor coordination in County Governments and negative social part of network in connection to strong waste administration influences the eagerness of the network to pay for enhanced strong waste administration.

The hypothesis contains six primary components which are Behavioral aim, Subjective standards, Social standards, Perceived power and Perceived conduct control, Fishbein and Ajzen (1975). All things considered speak to a man's genuine power over the conduct on eagerness to pay for enhance strong waste administration. Family unit individuals build up their eagerness to pay conduct decidedly or adversely as indicated by abstract and social standards. On the off chance that they perceive that their huge others and social weight react to such conduct they change their conduct. Jung (2005) declares that social back hypothesis is centered around pertinence to specialist organizations of speculation administration. Specialist organizations gaining from conduct back should figure out how to commit out their very own errors and those of others, understand those missteps, and take relief methodologies where vital and relevant.

2.5.3Institutional Theory

Open approach is dauntless by government establishments, authorization bodies which give benefits and give arrangement authenticity, Bantel (2001). The arrangement master applies rules to all individuals of society and corners the quality of the applying approach; for example, the assembly, official and legal parts of government are models of establishments that order, revise and uphold strategies both that administer resources and arrangement of administrations. Goodstein and Scot (2002) think about strategy as an institutional yield. Government establishments have for quite some time been an epicenter center around administration

arrangement. The creator additionally states that the arrangement is commandingly decided, put into viable utilize and implemented by the overseeing organizations.

Warner and Walker (2010) affirms that the connection among strategies and government organization are closed in light of the fact that an open strategy can't turn into a common approach until the point when it is selected, put into impact and authorized by government establishments. Boyne (2004) attests that open establishments give open approach authenticity, lawful obligation that approves faithfulness of the general population through all-inclusiveness that is just government arrangements broaden to all individuals in the general public and has the real freedom to detain violators of open strategy. The belief system of most extreme social additions infers no approach ought to be grasped if its expenses outperform its recompense and among strategy choices, arrangement producers ought to pick the strategy that yields the best advantages over expenses.

2.6 Conceptual Framework

The conceptual framework was generated by finding out the connections and interrelationship of the question of the study. The reusing, government strategies, instruction and mindfulness and open support are the free factors. They are however moderated by other factors towards effective solid waste management as per figure 2.1 below;

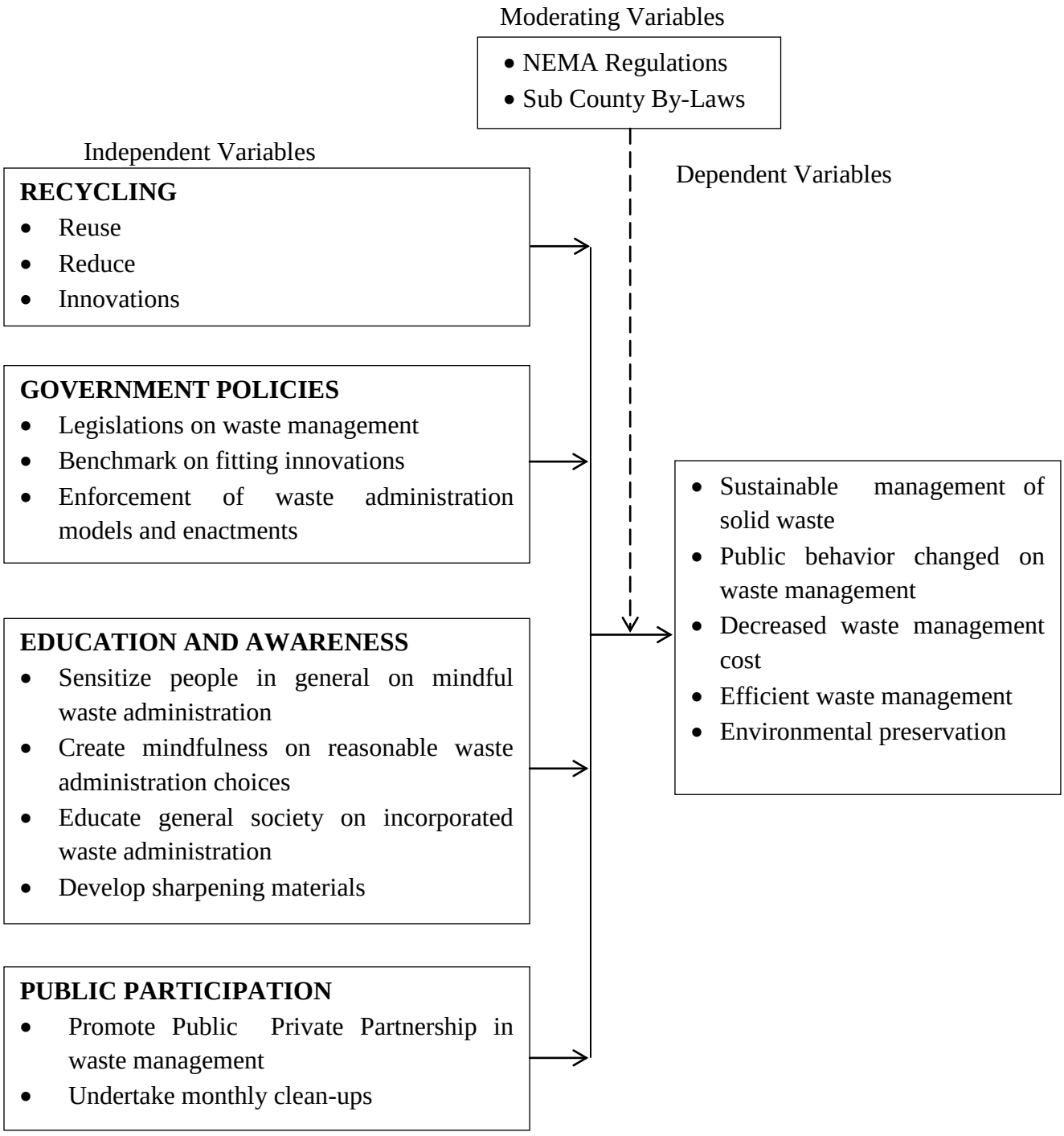

Figure 2.1: Conceptual Framework

2.7 Knowledge Gap

The available evidence and literature demonstrates factors influencing effective solid waste management and is indeed substantive but not exhaustive. A body of knowledge exists on the various variables of research but these have not been wholly dealt with, in reference to solid waste management in Mombasa. This study summarized knowledge gap as follows;

Table 2.1: *Knowledge Gap*

Author and Year of Study	Topic	Gap	Solution to Gap
DarbanAstane and Bazgir (2017)	The potential and situating of provincial waste administration framework in Ilam Province was assessed	The study concentrated more on rural set up	The study looked keenly on at an Urban setting, the case of Mombasa County
Suthar and Singh (2015)	The social and monetary variables related with the DWG in Dehradun, India	The study looked at two factors associated with domestic waste generation	This study looked at four main determinants influencing solid waste management as defined in the study objectives
Kimani et, al, 2012	Waste administration in Kenya; A contextual analysis of open specialized preparing establishments	This study looked specifically at public technical training institutions	This study looked specifically in Mombasa County
Forastiere, F., et al. (2010)	SWM as a cornerstone to the prevention of communicable diseases	The study looks at some of the prevention of solid waste management can result to	The study looked at some of the specific determinants to Solid Waste Management

2.8 Summary of Chapter

The literature in this chapter has involved data in relation to topic of this study and has stated various subsections. The literature has focused on SWM industry in Kenya, SWM concept and its danger is also talked about, factors that determine solid waste management including recycling, policies, education & awareness and public participation, the literature has further focused on the reviewed work from various scholars in relation to the given objectives in the study. A conceptualized framework has been attached to give a summary of all the work reviewed and knowledge gap is discussed.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter is about the research procedure which particularly manages the way a researcher will pursue raw information gathering and analysis. Be as it might be, this section was spread into different classifications including: study structure, target populace, sample and sampling strategy, information gathering and instrumentation, information accumulation systems, reliability and legitimacy of research instruments, information examination, and the moral contemplations of the investigation.

3.2 Research Design

The choice of research design was adopted by the need to describe different waste management practices and their effect to improve waste management in Mombasa County. The ideal research design choice therefore was descriptive survey; the design described waste management practices through inferential statistics as described in the findings of the study. Silverman (2011).

3.3 Target Population

Study population entails well defined people, firms, services, group of things, households, elements or events under study, Ngechu (2004). Therefore, a population can be defined as total number of individuals or groups that are studied by the researcher. The study population target comprised of 450 employees in the department of energy, environment & solid waste management in Mombasa County. (See Appendix I) and summary in table 1:

Table 3.2: Target Population

S/N	section	Target population
i.	Administration	14
ii.	Environment Pollution	9
iii.	Environment Parks	93
iv.	Solid Waste Management	333
v.	Trade	1
	Total	450

3.4Sampling Procedure and Sample Size

This procedure is based with the choice of a subset of people from inside a populace to appraise the qualities of entire populace. The two principle points of interest of inspecting are the quicker information gathering and lower cost, Robert (2004). The example populace is an experimentally chosen subset of the objective populace. When the objective populace has been characterized, the example of members inside the objective populace will be chosen.

3.4.1 Sample Size

In this examination a sample size of 240 respondents was the touch base by utilization of Morgan's table for test estimate (see Appendix III). In this exceptional situation, legitimate sample gauge is a basic issue just to ensure that the delegate of the examination and enough cases to run the multivariate examination, for instance, extraordinary direct backslides amid information investigation later of this examination.

Table 3.3: Sample Size

S/N	Section	Target population	Sample size
	Administration	14	7
	Environment Pollution	9	5
	Environment Parks	93	50
	Solid Waste Management	333	177
	Trade	1	1
	TOTAL	450	240

3.4.2 Sampling Procedure

A total of 240 respondents were selected using stratified simple random sampling, this involved the method for the selection of individuals from various categories on which information are to be made. The categories were done as per different solid waste management and energy department of Mombasa county and was found out that it was subdivided into 5 sections namely; administration, environment parks, environment pollution, solid waste management and trade. It thus provides the unbiased and better estimate of the parameters if the population is homogeneous.

3.5 Data Collection Methods

The questionnaire was utilized in this examination with closed ended polls because it was considered the best data collection method for this research study. The questionnaire was formed in different subsections as per the main objectives of the study. The questionnaire was also used in piloting of initial research and suggestions were made before finalizing the questionnaire. The researcher got a permit from the graduate school and county chief officer. The questionnaire consisted of closed ended questions to enable the researcher in testing specific hypothesis as outlined in the study. The researcher emphasized that the information given by the respondent will be treated with utmost privacy and confidentiality and will be used for research study purpose only.

3.5.1Validity of the Instruments

The three strategies that Yin (2009) contends anchors build legitimacy, i.e. various wellsprings of proof, build up a chain of proof and having key sources audit the example survey. The specialist goals to apply a similar reasoning to guarantee legitimacy of the examination report. Interior legitimacy parallels validity and concerns guaranteeing that examination has been directed in accordance with great practice Bryman and Bell (2009). To expand the interior legitimacy of this investigation, totally filled poll from respondents will empower the analyst to reconsider discoveries consequently relieving the danger of misinterpretations. Outer legitimacy concerns how much discoveries from an investigation can be summed up to different settings, Bryman and Bell (2011). This investigation incorporated a broad likeness of other past examinations and along these lines gives different scientists to survey the investigation's transferability and subsequently likewise its generalizability. The outcomes and investigation

from the examination were converted into determinations and a system got from both hypothesis and experimental discoveries, along these lines the results may be material for other open associations.

3.5.2 Reliability of the Instruments

This may be termed as unwavering quality of an examination which concerns regardless of whether a similar end would be made whether another analyst later pursued a similar strategy, directing related investigation, Yin (2009). This examination will make utilization of the test-retest strategy to test the unwavering quality of study devices. The specialist gave similar surveys to same test respondents on two unique events and after that a connection correlation with scores being finished. The closer every respondent's scores are the more dependable the test measure.

Pilot study results and internal consistency of the questionnaire formed the basis to measure by Cronbach's Alpha so as to make conclusion on reliability of the questionnaire, Cronbach's, (1951). Any reliability above 0.7 is satisfactory consistent. The pilot test yielded a reliability of 0.947 hence deemed perfect as per table 3.2 below.

Table 3.4: Reliability of the Instrument

Factor	Item No	Cronbach's Alpha
Recycling	7	.974
Government Policies	6	.901
Education and Awareness	5	.897
Public Participation	4	.928
Overall	22	.947

3.5.3 Piloting of Instrument

A pilot study was directed where test polls were managed in various areas inside the objective populace zones. A letter of educated assent was given to every respondent and scientist acquired endorsement from the two respondents. The polls were composed and respondents were given an expected 40 and 50 minutes. This ought not to surpass an hour and a half to think about different responsibilities of members (Jacob and Furgerson, 2012). As per, Jacob and Furgerson (2012), building a decent affinity with the members could encourage better reactions. Subsequently,

scientist will start with social discussion before the polls are filled. Respondents were given a chance to examine unreservedly dependent on the inquiries asked and scientist got individual perspectives on the most proficient method to improve them.

3.6 Data Collection Procedure

The questionnaires were individually distributed to respondents in hard copies on a drop and pick later basis mode. The respondents were given a reasonable timeframe required to respond to the questionnaires. The questionnaire had a Likert scale kind of set questions. This is a requested, one-dimensional scale from which respondents pick one alternative that best lines up with their perception, other than that, it helps to inspect how unequivocally the respondents concur or can't help contradicting the specific proclamations on the scale from 1 to 5.

3.7 Data Analysis

Information handling and measurable investigation are the key undertakings of information examination. The point of information handling (change and standardization) is to enhance ordinariness of informational indexes with the end goal to enhance similarity of metabolite powers. Consequently, factual instruments are utilized to discover noteworthy sub-atomic substances, both for theory testing (Univariate investigation) and bunch examination (multivariate examination which may serve for speculation age), Joyce and Meredith (2006). After respondents have totally returned totally filled polls, information will be rechecked in order to sort those that are accurately filled in order to begin the investigation. Information will be breaking down utilizing mean, frequencies, rates and standard deviation. Relapse investigation will likewise be considered. Everything considered, the data accumulated is then arranged by using the Statistical Package of Social Science (SPSS) programming variant 22. As per Jacob et al, (2003), regression analysis is utilized to decide the base arrangement of the factors which information have been gathered. Gerard, (2008) has characterized that in demonstrate synopsis table where R represents the various relationship coefficients that can decide how firmly the autonomous factors are identified with the reliant variable and R^2 is to demonstrate the coefficient of the determination. In addition, R^2 is to consider the example measure and the quantity of free factors. Balanced R^2 are continually being equivalent to or under R^2.

The relationship can be an ideal positive connection between two factors spoke to by 1.0, no connection spoke to by 0.00 or an immaculate negative connection spoke to by - 1.0. The accompanying model will be connected in this examination;

$Y = \beta_0 + \beta_1 X_1 + \varepsilon;$

$Y = \beta_0 + \beta_2 X_2 + \varepsilon;$

$Y = \beta_0 + \beta_3 X_3 + \varepsilon;$

$Y = \beta_0 + \beta_4 X_4 + \varepsilon;$

Y was the dependent variable representing improved waste management, X_1 to X_n are the independent variables where X_1 was recycling, X_2 was government policies, $X_3$was education and awareness while x_4 was public participation. β_0 is a constant showing intercept for regression equation while β_1 to β_n i.e. β_1, $\beta_{2,}$ β_3 and β_4 were the independent variables coefficients while ε was the random error term, assumed to be normally distributed.

β_1 – the contribution of recycling variable contributes towards improved solid waste management in Mombasa town

β_2 - the contribution of government policies variable contributes towards improved solid waste management in Mombasa town

β_3 - the contribution of education and awareness variable contribute towards improved solid waste management in Mombasa town

β_4 – the contribution of public participation variable contributes towards improved solid waste management in Mombasa town.

3.9 Operationalization of Variables

This is an announcement of particular measurements and components through which an idea ended up quantifiable to as arranged in table 3.1 below;

Table 3.5: Variables Operationalization

Objective	Variables	Indicators (specific)	Collection Method (Data)	Analysis Type	UOM
Recycling	Independent	Reuse Reduce Innovations Donations	Questionnaire	Statistical Package for the Social Science	Ordinal
Government	Independent	Legislations on waste	Questionnaire	Statistical	Ordinal

Policies		management Benchmark on fitting innovations Enforcement of waste administration models and enactments		Package for the Social Science	
Education and Awareness	Independent	Sensitize people in general on mindful waste administration Create mindfulness on reasonable waste administration choices Educate general society on incorporated waste administration Develop sharpening materials	Questionnaire	Statistical Package for the Social Science	Ordinal
Public Participation	Independent	Promote Public Private Partnership in waste management Undertake monthly clean-ups	Questionnaire	Statistical Package for the Social Science	Ordinal

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATIONS

4.1 Introduction

Chapter four brought to light all the findings as per raw data collected by use of questionnaires. Data was presented as per questionnaire layout after the general response rate was calculated and demographic data explained. The organization was broken down under each independent variable and data presented in tables where descriptive data was first put forward and correlational regression analysis done underneath in comparison to the dependent variable.

4.2 Questionnaire return rate

Once filled questionnaires were returned, the researcher one by one counted all returned and dully filled questionnaires and found out that only 194 questionnaires were dully filled. The dully filled questionnaires lead to an estimated eighty one percent response rate hence nineteen percent was deemed non responsive as depicted in table 4.6 below.

Table 4.6: Questionnaire return rate

Respondents	Questionnaire Given Out	Questionnaire Return	Percentage Received
1.Administration	7	6	85.71
2.Enviroment Pollution	5	4	80
3.Enviroment Parks	50	40	80
4.Solid Waste Management	177	143	80.79
5.Trade	1	1	100
Total	240	194	

4.3Demographic characteristics of respondents

Out of the one hundred and ninety four respondents, the study recorded one hundred and twenty seven male frequencies while sixty seven female frequencies was recorded as shown in table 4.7 below. Generally respondents were asked to state the extent to which they personally practice recycling in the spirit of solid waste management. The results as shown in table 4.7 below depicted that most of the respondents are not sure if they practice this aspect. Others however indicted they practice weekly (23.1%), monthly (15.4%), daily (11.5%) and all the time was least at 7.7%.

Table 4.7: Demographic Information

		Frequency of recycling done					Total
		All the time	Daily	Weekly	Monthly	Not Sure	
Respondents	Male	15	22	45	22	0	104
Gender	Female	0	0	0	8	82	90
Total		15	22	45	30	82	195

4.5 Influence of recycling on improved waste management

The respondents were asked for to rate the general degree they think reusing contribute towards improved solid waste organization. In the demand of their mean; reusing saves imperativeness, helps keep materials out of landfills and incinerators, and gives rough materials to the age of new things with 1.62 mean score with standard deviation of 0.804; reusing offer immense potential for diminishing ozone hurting substance releases had 2.04mean score and 0.871 standard deviation; reusing screens normal resources including trees, metals and water thusly prompts natural insurance had a mean score of 2.31 with standard deviation of 1.225; various people give things or materials to other individuals who require and can use the things had a mean score of 2.42 with standard deviation of 1.137; most affiliations ask agents to simply print what they require and ensure that printer settings are defaulted to print twofold sided to save paper had a mean score of 3.00 and 0.894 standard deviation; many purchased things are created utilizing reused materials had a mean score of 3.77 and 1.032 standard deviation. Finally most tenants slope toward reuse of things through settling, revamping, washing, or recovery of worn or used

things, machines, and furniture and building materials with a mean score of 3.81 and standard deviation of 1.415 as showed up in table 4.8 below.

Table 4.8: Influence of recycling influences improved waste management

	Mean	Std. Deviation
Recycling saves energy, helps keep materials out of landfills & incinerators, and provides raw materials for the production of new products	1.62	.804
Recycling offers significant potential for reducing greenhouse gas emissions	2.04	.871
Recycling conserves natural resources including trees, metals and water hence leads to environmental preservation	2.31	1.225
Many people donate products or materials to others who need and can use the items	2.42	1.137
Most organizations encourage employees to only print what they need and ensure that printer settings are defaulted to print double sided to save paper	3.00	.894
Many purchased products are made from recycled materials	3.77	1.032
Most residents prefer reuse of products through repairing, refurbishing, washing, or recovery of worn or used products, appliances, furniture and building materials	3.81	1.415

Table 4.9 shows relationship examination among reusing and strong waste administration. The centrality esteem at 95% certainty level is 0.00 which is under 0.5 henceforth implies reusing impacts waste administration.

Table 4.9: Correlations analysis for recycling and improved waste management

		Recycling	Solid Waste Management
Recycling	Pearson Correlation	1	.918**
	Sig. (2-tailed)		.000
	N	194	194
Solid Waste Management	Pearson Correlation	.918**	1
	Sig. (2-tailed)	.000	
	N	194	194

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

From the relapse table 4.10 below; R^2 was 0.843 which indicate that there was 84.3% variety in solid waste administration because reusing progress. Quality of connection between the variable is demonstrated by connection coefficient (R). The investigation discovered that the connection coefficient was 0.918 which clarifies in this manner there was certain connection between solid waste administration and reusing.

Table 4.10: Regression analysis for recycling and improved waste management

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.918[a]	.843	.836	.188

a. Predictors: (Constant), Recycling

The accompanying speculation was tried at the 95% dimension of noteworthiness.

H_a: There is a significant relationship between recycling and improved solid waste management.

H_o: There is no significant relationship between recycling and improved solid waste management.

The Analysis of Variance table 4.11 below showed a significant value of 0.00. This indicated a positive significant relationship between recycling and improved solid waste management.

Table 4.11: ANOVA analysis for recycling and improved waste management

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.564	1	4.564	128.551	.000[b]
	Residual	.852	192	.036		
	Total	5.416	193			

a. Dependent Variable: Solid Waste Management

b. Predictors: (Constant), Recycling

The study found that recycling when held to a constant zero then improved solid waste management is 1.893. Reusing would prompt an expansion in improved solid waste management by a factor of 1.242 other than a unit increment as shown in table 4.12 below.

Table 4.12: Coefficients analysis for recycling and improved waste management

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.893	.299		6.331	.000
Recycling	1.242	.110	.918	11.338	.000

a. Dependent Variable: Solid Waste Management

4.5Government and its influence on improved waste management

Contribution degree towards enhanced strong waste management was used as criteria and the respondents were requested to rate. In the request of their mean; the county government has their working conditions and productivity upgraded through arrangement of modem hardware and defensive apparatus to specialists had a mean score of 1.58 with standard deviation of 0.703; an enactment is put requiring building proprietors to introduce driven lighting frameworks to spare vitality and empower perceivability henceforth keeping away from superfluous waste dumping

during the evening had 1.73 mean score with 0.724 standard deviation; reduction of tank on things with regular cheerful names could help in lessening the proportion of waste from an age and a client perspective had 1.85 mean score with 1.156 standard deviation; the area master assembles and transports resource misuses, sustenance waste and general misuses freely to a specific dumping site had 2.00 mean score with 1.131 standard deviation; an institution was passed by the organization that requires retailers pitching devices to recover and reuse these things had 3.12 mean score with 0.816 standard deviation; in conclusion natural assessment audits are sufficiently done subsequently recognizing whether individuals and associations concur and hold quick to waste organization measures for example having dustbins had a mean score of 3.23 with standard deviation of 1.423 as showed up in table 7 underneath.

Table 4.13: Government policies contribution to improved waste management

	Mean	Std. Deviation
The county government has their working conditions and efficiency enhanced through provision of modem equipment and protective gear to workers	1.58	.703
A legislation is place requiring building owners to install LED lighting systems to save energy and enable visibility hence avoiding unnecessary waste dumping at night	1.73	.724
Reduction of VAT on items with environmental friendly labels could help in reducing the amount of waste from a production and a consumer perspective	1.85	1.156
The local authority collects and transports resource wastes, food waste and general wastes separately to a specific dumping site	2.00	1.131
A legislation was passed by the government that requires retailers selling electronics to take back and recycle these products	3.12	.816
Environmental assessment audits are adequately done hence identifying whether individuals and companies comply and adhere to waste management standards for example having dustbins on standby	3.23	1.423

Table 4.14 shows relationship examination between government arrangements and enhanced solid waste administration. With certainty level of 0.00 of centrality esteem at 95% is under 0.5 therefore this indicate the government methods have impact on solid waste management.

Table 4.14: Correlations analysis for government policies and improved waste management

		Government Policies	Solid Waste Management
Government Policies	Pearson Correlation	1	.935**
	Sig. (2-tailed)		.000
	N	194	194
Solid Waste Management	Pearson Correlation	.935**	1
	Sig. (2-tailed)	.000	
	N	194	1946

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

From the backslide table 4.15 underneath; R^2 was 0.875 which inferred that there was 87.5% assortment in improved solid waste organization in light of advancement in government courses of action. The association coefficient (R) showed the nature of association between the variable. The examination found that the association 0.935 coefficient which elucidates therefore was certain association between solid waste organization and government methodologies.

Table 4.15: Regression analysis for government policies and improved waste management

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.935[a]	.875	.870	.168

a. Predictors: (Constant), Government Policies

The accompanying speculation was tried at the 95% dimension of noteworthiness.

H_a: There is a significant relationship between government policies and improved solid waste management.

H_o: There is no significant relationship between government policies and improved solid waste management.

The Analysis of Variance table 4.16 below showed a 0.00 significant value. This indicated a helpful significant relationship between government policies and improved solid waste management.

Table 4.16: ANOVA analysis for government policies and improved waste management

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.738	1	4.738	167.854	.000[b]
Residual	.677	192	.028		
Total	5.416	193			

a. Dependent Variable: Solid Waste Management

b. Predictors: (Constant), Government Policies

The study found that government policies when held to a constant zero then improved solid waste management would be 0.176. Other than a unit increment in government strategies would prompt an expansion in enhanced solid waste administration by a factor of 0.576 as appeared in table 4.17 below

Table 4.17: Coefficients analysis for government policies improved waste management

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.176	.105		1.668	.108
Government Policies	.576	.044	.935	12.956	.000

a. Dependent Variable: Solid Waste Management

4.6 Education and awareness and it's influences on improved waste management

The respondents were requested to rate the general degree they think instruction and mindfulness contribute towards enhanced strong waste administration. In the request of their mean; do you

trust individuals should be more taught regarding the matter of reusing and know where things follow they have been reused had 1.27 mean score with 0.452 standard deviation; getting ready is one of the fundamental sections required in a solid waste endeavor execution structure had 1.35mean score with 0.485 standard deviation; guidance has had all the earmarks of being an essential portion in enabling open help in reusing programs had 1.92 mean score with 1.017 standard deviation; introducing waste organization into school programs is also at least a since adolescents are the inevitable destiny of tomorrow had 2.08 mean score with 1.093 standard deviation and waste care through media like TV, radio, magazines and whatnot is fundamental in ensuring that there is waste organization sensibility had a mean score of 2.19 with standard deviation of 1.096 as showed up in table 12 underneath.

Table 4.18: Education and awareness influence on improved waste management

	Mean	Std. Deviation
Do you believe people need to be more educated on the subject of recycling and know where items go after they have been recycled	1.27	.452
Public training is one of the critical components required in a solid waste project implementation system	1.35	.485
Education has been shown to be a critical component in encouraging public participation in recycling programs	1.92	1.017
Embedding waste management into school programs is also a plus since children are the future of tomorrow	2.08	1.093
Waste awareness through media like TV, Radio, magazines and so on is critical in ensuring that there is waste management sustainability	2.19	1.096

Table 4.19 shows connection examination among training and mindfulness and solid waste administration. The importance esteem at 95% certainty level is 0.00 which is under 0.5 thus implies instruction and mindfulness impacts solid waste administration.

Table 4.19: Correlations analysis for education and awareness on improved waste management

		Education and Awareness	Solid Waste Management
Education and Awareness	Pearson Correlation	1	.877**
	Sig. (2-tailed)		.000
	N	194	194
Solid Waste Management	Pearson Correlation	.877**	1
	Sig. (2-tailed)	.000	
	N	194	194

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

From the backslide table 4.20 underneath; R^2 was 0.769 which inferred that there was 76.9% assortment in solid waste organization in view of advancement in guidance and care. The association coefficient (R) demonstrated the nature of association between the variable. The examination found that the association coefficient was 0.877 which clears up consequently there was certain association between upgraded solid waste organization and guidance and care.

Table 4.20: *Regression analysis for education and awareness improved waste management*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.877[a]	.769	.760	.228

a. Predictors: (Constant), Education and Awareness

The accompanying speculation was tried at the 95% dimension of noteworthiness.

H_a: There is a significant relationship between education and awareness and improved solid waste management.

H_o: There is no significant relationship between education and awareness and improved solid waste management.

The Analysis of Variance table 4.21 below showed a significant value of 0.00. This indicated a positive significant relationship between education and awareness and improved solid waste management.

Table 4.21: ANOVA analysis for education and awareness improved waste management

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.167	1	4.167	80.047	.000[b]
Residual	1.249	192	.052		
Total	5.416	193			

a. Dependent Variable: Solid Waste Management

b. Predictors: (Constant), Education and Awareness

The study found that education and awareness when held to a constant zero then improved solid waste management would be 0.556. Besides a unit increase in education and awareness would lead to an increase in improved solid waste management by a factor of 0.519 as shown in table 4.22 below;

Table 4.22: Coefficients analysis for education and awareness improved waste management

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.556	.112		4.982	.000
Education and Awareness	.519	.058	.877	8.947	.000

a. Dependent Variable: Solid Waste Management

4.7Public participation and it's influences on improved waste management

The respondents were requested to rate the general degree they think open interest contribute towards enhanced strong waste administration. In the request of their mean; strong waste administration is being done via truck pushers, asset shippers, private strong waste authorities, open among others had 1.69 mean score with 0.970standard deviation ; nationals are willing to pay for gathering of the waste that they create in their home/shop had 1.92 mean score with 0.935 standard deviation; general society takes an interest in the strong waste administration process through individual family unit waste arranging had 2.04 mean score with 1.113 standard deviation of lastly network associations have been urged to advance reusing exercises thus enhancing the dimension of open cooperation had a mean score of 2.69 with standard deviation of 1.258 as appeared in table 4.23 underneath.

Table 4.23: The extent public participation influences improved waste management

	Mean	Std. Deviation
Solid waste management is being carried out by cart pushers, resource merchants, private solid waste collectors, public among others	1.69	.970
Citizens are willing paying for collection of the waste that they generate in their home/shop/stall	1.92	.935
The public participates in the solid waste management process through individual household waste sorting	2.04	1.113
Community organizations have been encouraged to promote recycling activities hence improving the level of public participation	2.69	1.258

Table 4.24 shows relationship examination between government approaches and solid waste administration. The importance esteem at 95% certainty level is 0.00 which is under 0.5 henceforth implies government approaches impacts enhanced solid waste administration.

Table 4.24: Correlations analysis for public participation on improved waste management

		Public Participation	Solid Waste Management
Public Participation	Pearson Correlation	1	.854**
	Sig. (2-tailed)		.000
	N	194	194
Solid Waste Management	Pearson Correlation	.854**	1
	Sig. (2-tailed)	.000	
	N	194	194

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

From table 4.25, R^2 was 0.729 which suggested that there was 72.9% assortment in improved solid waste organization as a result of advancement out in the open help. The association coefficient (R) showed the nature of association between the variable. The examination found that the association coefficient was 0.854 which clears up along these lines there was certain connection between enhanced solid waste administration and open investment.

Table 4.25: Regression analysis for public participation improved waste management

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.854[a]	.729	.718	.247

a. Predictors: (Constant), Public Participation

The accompanying speculation was tried at the 95% dimension of noteworthiness.

H_a: There is a significant relationship between public participation and improved solid waste management.

H_o: There is no significant relationship between public participation and improved solid waste management.

The Analysis of Variance table 4.26 below showed a significant value of 0.00. This indicated a positive significant relationship between public participation and improved solid waste management.

Table 4.26: ANOVA analysis for public participation on improved waste management

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.949	1	3.949	64.607	.000[b]
Residual	1.467	192	.061		
Total	5.416	193			

a. Dependent Variable: Solid Waste Management

b. Predictors: (Constant), Public Participation

The study found that public participation when held to a constant zero then improved solid waste management would be 0.667. Besides a unit increase in public participation would lead to an increase in improved solid waste management by a factor of 0.385 as shown in table 4.27 below.

Table 4.27: Coefficients Analysis for Public Participation Improved Waste Management

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.667	.111		6.007	.000
Public Participation	.385	.048	.854	8.038	.000

a. Dependent Variable: Improved Solid Waste Management

4.8 Solid Waste Management (SWM) Determinants

The respondents were requested to rate the general degree they think the fundamental waste administration practices enhance two cleanliness. In the request of their mean; open interest adds to solid waste administration had 1.38 mean score with 0.496standard deviation of; reusing adds to solid waste administration had 1.42 mean score with 0.504standard deviation of; training and mindfulness adds to solid waste administration had1.50 mean score with 0.510 standard deviation lastly government strategies adds to solid waste administration had 1.58 mean score with0.504 standard deviation of as appeared in table 4.28 below.

Table 4.28: Solid Waste Management Determinants

	Mean	Std. Deviation
Public participation contributes to solid waste management	1.38	.496
Recycling contributes to solid waste management	1.42	.504
Education and awareness contributes to solid waste management	1.50	.510
Government policies contributes to solid waste management	1.58	.504

CHAPTER FIVE
SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the research study findings, discussions, conclusions and recommendation and suggestions of related studies that may be carried out in the future, last section of the study involved the most important aspects or practical details of the analysis discoveries, ends drawn from discoveries, proposals by the scientist and recommendations for further investigations.

5.2 Summary of Findings

For the principle focus of the examination which was tied in with rating the general degree they think reusing contribute towards improved solid waste organization. Most respondents agree that reusing saves imperativeness; assist in keeping materials out of landfills and incinerators, and gives unrefined materials to the age of new things. Respondents in like manner demonstrate that reusing offers a colossal potential for reducing ozone hurting substance releases. Disclosures charged that reusing screens trademark resources including trees, metals and water thus prompts regular protecting. Most respondents exhibit that giving of things or materials to other individuals who require and can use the things can incite diminished waste. By affiliations asking delegates to simply print what they require and ensure that printer settings are defaulted to print twofold sided to save paper is moreover agreed that it can provoke decreased wastage. Waste diminishing can in like manner be drilled by getting things are delivered utilizing reused materials. The examination in like manner underpins reuse of things through settling, reestablishing, washing, or recovery of worn or used things, devices, and furniture and building materials. R^2 was 0.843 which inferred that there was 84.3% assortment in solid waste organization in view of advancement in reusing. The association coefficient (R) showed the nature of association between the variable. The examination found that the association coefficient was 0.918 which elucidates likewise there was sure association between solid waste organization and reusing. The examination found that reusing when held to an enduring zero by then improved solid waste organization would be 1.893. Other than a unit augment in reusing would incite an extension in enhanced strong waste administration by a factor of 1.242.

The second objective was finding the extent government policies contribute towards improved solid waste management. Ensuring working conditions and efficiency is enhanced through provision of modem equipment and protective gear to workers. Mombasa County has also put a legislation in place requiring building owners to install led lighting systems to save energy and enable visibility hence avoiding unnecessary waste dumping. Nationally the government may reduce VAT on items with environmental friendly labels which could help in reducing the amount of waste from a production and a consumer perspective. The local authority collects and transports resource wastes, food waste and general wastes separately to a specific dumping site identified in Mwakirunge. Though not passed, respondents indicate that government may do a legislation requiring retailers selling electronics to take back and recycle these products. Environmental assessment audits should be adequately done hence identifying whether individuals and companies comply and adhere to waste management standards for example having dustbins on standby. R^2 was 0.875 which implied that there was 87.5% variety in enhanced solid waste administration because of progress in government strategies. The association coefficient (R) demonstrated the nature of association between the variable. The examination found that the association coefficient was 0.935 which illuminates that there was sure association between solid waste organization and government procedures. The examination found that organization approaches when held to a consistent zero by then improved solid waste organization would be 0.176. Other than a unit increase in government game plans would incite an extension in improved solid waste organization by a factor of 0.576.

The third objective was deciding the degree to which instruction and mindfulness contribute towards enhanced strong waste administration. Open preparing is one of the basic segments required in a strong waste undertaking usage framework. Instruction has been appeared to be a basic segment in empowering open interest in reusing programs. Most respondents concur that implanting waste administration into school programs is additionally or more since kids are the eventual fate of tomorrow. Waste mindfulness through media like TV, radio, magazines et cetera is basic in guaranteeing that there is waste administration manageability. R^2 was 0.769 which inferred that there was 76.9% assortment in solid waste organization due to advance in preparing and care. The association coefficient (R) exhibited the nature of association between the variable. The examination found that the association coefficient was 0.877 which elucidates thusly there

was sure association between improved solid waste organization and preparing and care. The examination found that preparation and care when held to an unfaltering zero by then improved solid waste organization would be 0.556. Other than a unit increase in preparing and care would provoke a development in improved solid waste organization by a factor of 0.519.

The forward target was to discover the degree to which open investment contribute towards enhanced strong waste administration. Discoveries show that strong waste administration is being completed via truck pushers, asset shippers and private waste authorities open among others. Additionally discoveries show that subjects are eager to paying for gathering of the waste that they produce in their home/shop/slow down. The general population takes an interest in the strong waste administration process through individual family unit waste arranging. R^2 was 0.729 which inferred that there was 72.9% assortment in upgraded solid waste organization due to advance out in the open participation. The association coefficient (R) exhibited the nature of association between the variable. The examination found that the association coefficient was 0.854 which illuminates thusly there was certain association between improved solid waste organization and open help. The examination found that open help when held to a steady zero by then upgraded solid waste organization would be 0.667. Other than a unit increase visible to everyone collaboration would incite an extension in upgraded solid waste organization by a factor of 0.385.

5.4 Conclusions

Based on findings, this study concluded as follows;

There are already sustainable waste management services present in the society and nature due to nature of residential waste with high component of organic waste. The waste such as livestock feeds composites can be turned into valuable materials and resources. Investment in this area will be great because it will remove around 80% of waste that would otherwise be ended up in dumpsites. That the solid waste projects in Mombasa County just like any other in the rest of the world have led to jobs creation in the area and other surrounding environs. The researcher also concludes that health hazards and issues have been surrounding the implementation of the solid waste projects in the area just like any solid waste projects across the world in countries like China, India, Uganda, and many more.

In conclusion, awareness about SWM to the public is very important for their own well-being in terms of health as well as clean environment where they stay. Reducing or managing public waste dumping, waste burning and unnecessary usage of unrecyclable plastic bags is also important. All the same, many institutions have been involved in achieving these goals which is very encouraging.

5.5 Recommendations

Based on the findings;

To ensure efficient and effective waste management, the waste management institutions should be effectively resourced. Mombasa County government should collaborate with other institutions such as United Nations Development Program (UNDP). This will assist and support with waste management equipment's such as compactor truck and waste dustbin. The low income class who are very people who generate waste should be encouraged to pay for disposing and collecting their waste by introducing "pay as you throw principle". Educating the low income class people by informing them the importance of environment cleanliness and how to contribute to it, is very important. This will go a long way to support the finance base of waste management institutions by putting in place the best waste management support system that uses the best technical approach which include but not limited to waste transportation, collection, waste reduction, recycling and waste disposal plans. Improved and well management regulatory systems which incorporates institutions and financial approach such as legal, private sector and public education and awareness plans should be incorporated. Involving in high percentage the public involvement through intolerance to waste mismanagement will exert pressure on the government and waste management entities to improve their waste management services. Management of landfill site should be effectively managed to avoid waste heap and burning. Landfill waste should be managed effectively in terms of spread, compacted and even covered with soil; this will go a long way preventing waste heaping in the landfill areas. Furthermore, the landfill management should ensure that waste that is carried to the landfill does not contain fire.

5.6 Suggestions for Further Studies

The researcher suggests that each of the objectives may be done at in depth to assess on recommended case studies applied. This may go a long way in seeking Kenya as a nation come out of the waste menace surrounding Mombasa and other count.

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APPENDICES

Appendix I: Permission to Proceed to the Field and Collect Data

COUNTY GOVERNMENT OF MOMBASA
DEPARTMENT OF DEVOLUTION
AND PUBLIC SERVICE ADMINISTRATION

Ref: CGM/ADM.3/ (45) **Date:** October 2, 2018

The Chief Officer
Environment & Waster Management
COUNTY GOVERNMENT OF MOMBASA

RE: AUTHORITY TO COLLECT DATA – UBA MOHAMED AHMED

The bearer of this letter is a second-year student at University of Nairobi pursuing a Masters of Arts Degree in Project Planning and Management at the School of Open and Distance Learning.

As part of her course work she is required to prepare and present a research paper. She is currently in the process of data collection to enable her complete the research project which is mandatory for the programme. The project is entitled "**Solid Waste Management Determinants in Kenya, The Case Study of Mombasa County.**

The County Government as a public organization do hereby grant authority to **Uba Mohamed Ahmed ID.No.24306073** to collect the data in Mombasa County.

By copy of this letter Uba Mohamed Ahmed is requested to submit a copy of the report in both soft and hard copy to this office for record purpose.

Kindly accord her the necessary assistance required to enable him gather the information required.

Justina Mwikya (Mrs)
Chief Officer, Devolution & Public Service Administration

cc CECM – Devolution & Public Service Administration
County Secretary

Betting Control and Licensing Building, 2nd Floor. P. O. Box 82209 - 80100 G.P.O. Mombasa.
telephone: +254 (0) 709 001 541 email: countysec@mombasa.go.ke
www.mombasa.go.ke

MOMBASA COUNTY GOVERNMENT
DEPARTMENT OF ENERGY, ENVIRONMENT & SOLID WASTE MANAGEMENT
P. O. BOX 90440-80100, MOMBASA

12th October, 2018

TO WHOM IT MAY CONCERN

RE : UBA MOHAMED AHMED

The above named student is perusing master degree is hereby given a data collection from our department of Environment Waste Management & Energy.
Your cooperation towards her studies will be highly appreciated.

Maxwell Shoka
FOR: HUMAN RESOURCE & ADMINISTRATION
ENVIRONMENT WASTE MANAGEMENT & ENERGY.

DEPARTMENT OF ENVIRONMENT, WASTE MANAGEMENT AND ENERGY

STAFF RETURNS 2018 APRIL

S/N	P/NO	GED	J/G	T/E	DEPT	SECTION	STATION
1)	19990006767	F	B	P.P	EWE	ENV.PA	Abdul Naser Road
2)	19940001853	M	B	P.P	EWE	ENV.PA	Abdul Naser Road
3)	19960001487	M	B	P.P	EWE	ENV.PA	Abdul Naser Road
4)	19910002023	F	B	P.P	EWE	ENV.PA	All Cemeteries -Superv
5)	19710020467	F	S	L.C	EWE.	ADM.	Bima Towers
6)	19910010630	F	G	P.P	EWE.	SWM.	Bima Towers
7)	20000010695	F	B	P.P	EWE.	SWM.	Bima Towers
8)	20170140940	F	L	L.C	EWE.	ADM.	Bima Towers
9)	19860004306	M	B	P.P	EWE.	SWM.	Bima Towers
10)	19900012357	M	E	P.P	EWE.	SWM.	Bima Towers
11)	20000001909	M	B	P.P	EWE.	SWM.	Bima Towers
12)	20070004152	M	H	P.P	EWE.	ADM.	Bima Towers
13)	20170120493	M	T	L.C	EWE	ADM	Bima Towers
14)	20170140404	M	H	L.C	EWE.	ADM.	Bima Towers
15)	20170140806	M	M	L.C	EWE.	ADM.	Bima Towers
16)	19940005747	F	B	P.P	EWE	ENV.PA	Buxton
17)	20080000764	M	B	P.P	EWE	ENV.PA	Buxton
18)	20000002559	F	B	P.P	EWE	ENV.PA	Buxton, Tom. R.Ng ,Bu
19)	19870003188	M	B	P.P	EWE	ENV.PA	Buxton, Tom. R.Ng ,Bu
20)	20080000728	M	B	P.P	EWE	ENV.PA	Buxton, Tom. R.Ng ,Bu
21)	20000002513	M	B	P.P	EWE	ENV.PA	Cha,Jov,Mak, Lum
22)	19870001684	M	B	P.P	EWE	ENV.PA	Changamwe -Labourer
23)	19940001874	M	B	P.P	EWE	ENV.PA	Changamwe -Labourer
24)	20000001909	M	B	P.P	EWE	ENV.PA	Changamwe -Labourer
25)	19870004292	F	B	P.P	EWE	SWM.	Changamwe-Labourer
26)	19870004818	F	B	P.P	EWE	SWM.	Changamwe-Labourer
27)	19870004836	F	B	P.P	EWE	SWM.	Changamwe-Labourer
28)	19920013547	F	B	P.P	EWE	SWM.	Changamwe-Labourer
29)	19940006593	F	B	P.P	EWE	SWM.	Changamwe-Labourer
30)	19940010748	F	E	P.P	EWE	SWM.	Changamwe-Labourer
31)	20000004053	F	B	P.P	EWE	SWM.	Changamwe-Labourer
32)	20000010284	F	B	P.P	EWE	SWM.	Changamwe-Labourer
33)	19790004965	M	B	P.P	EWE	SWM.	Changamwe-Labourer
34)	20000004142	M	B	P.P	EWE	SWM.	Changamwe-Labourer
35)	20000004571	M	B	P.P	EWE	SWM.	Changamwe-Labourer
36)	19940005596	M	B	P.P	EWE	ENV.PA	Digo Road
37)	19870003 197	M	G	P.P	EWE	ENV.PA	Digo, Ab,na, Far,R
38)	19970003368	F	B	P.P	EWE	ENV.PA	Governors Office
39)	19950003273	M	B	P.P	EWE	ENV.PA	Governors Office
40)	199700032-!2	M	B	P.P	EWE	ENV.PA	Governors Office
41)	19970003457	M	B	P.P	EWE	ENV.PA	Haileselasie avenue
42)	20130000583	M	B	P.P	EWE	ENV.PA	Haileselasie avenue
43)	9940005416	F	B	P.P	EWE	ENV.PA	J.K avenue
44)	19940001927	M	B	P.P	EWE	ENV.PA	J.K-Pruner
45)	19940005827	F	B	P.P	EWE	ENV.PA	JomaKenyata Avenue
46)	19970003466	F	B	P.P	EWE	ENV.PA	JomaKenyata Avenue

47)	19940000564	M	B	P.P	EWE	ENV.PA	JomaKenyata Avenue
48)	997000311 7	M	B	P.P	EWE	ENV.PA	JomaKenyata Avenue
49)	19970010647	F	B	P.P	EWE	SWM.	Jomvu-Labourer
50)	20000005710	F	B	P.P	EWE	SWM.	Jomvu-Labourer
51)	19810004374	M	B	P.P	EWE	SWM.	Jomvu-Labourer
52)	19940010597	M	E	P.P	EWE	SWM.	Jomvu-Labourer
53)	20000004188	M	B	P.P	EWE	SWM.	Jomvu-Labourer
54)	20000004295	M	B	P.P	EWE	SWM.	Jomvu-Labourer
55)	1994000 1000	F	B	P.P	EWE	ENV.PA	Kisauni Cemetery
56)	19970007366	F	B	P.P	EWE	ENV.PA	Kisauni Cemetery
57)	19970010532	F	B	P.P	EWE	ENV.PA	Kisauni Cemetery
58)	19920003274	M	B	P.P	EWE	ENV.PA	Kisauni Cemetery
59)	19940001767	M	B	P.P	EWE	ENV.PA	Kisauni Cemetery
60)	20000003805	M	B	P.P	EWE	ENV.PA	Kisauni Cemetery
61)	19860005563	F	B	P.P	EWE	SWM.	Kisauni-Bridge- Labour
62)	19900011405	F	B	P.P	EWE	SWM.	Kisauni-Bridge- Labour
63)	20000010328	F	B	P.P	EWE	SWM.	Kisauni-Bridge- Labour
64)	19870002565	M	E	P.P	EWE	SWM.	Kisauni-Bridge- Labour
65)	19910009424	M	B	P.P	EWE	SWM.	Kisauni-Bridge- Labour
66)	19910011577	M	B	P.P	EWE	SWM.	Kisauni-Bridge- Labour
67)	19940011405	M	B	P.P	EWE	SWM.	Kisauni-Bridge- Labour
68)	19860005198	F	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
69)	19860005438	F	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
70)	19940011343	F	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
71)	19950001019	F	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
72)	19950004814	F	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
73)	20000004357	F	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
74)	20000009807	F	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
75)	20000009845	F	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
76)	20000010042	F	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
77)	20000010140	F	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
78)	19860001243	M	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
79)	19900015965	M	E	P.P	EWE	SWM.	Kongowea-Market-Labourer
80)	19910009237	M	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
81)	19910011586	M	B	P.P	EWE	SWM.	Kongowea-Market-Labourer

82)	19920012086	M	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
83)	19990024412	M	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
84)	20000003636	M	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
85)	20000003878	M	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
86)	20000009950	M	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
87)	20000010177	M	B	P.P	EWE	SWM.	Kongowea-Market-Labourer
88)	19990021317	M	B	P.P	EWE	SWM.	Kongowea-Market,,
89)	19940001865	F	B	P.P	EWE	ENV.PA	Law Court-Labourer
90)	19790007359	F	B	P.P	EWE	SWM.	Likoni-Labourer
91)	19800004308	F	B	P.P	EWE	SWM.	Likoni-Labourer
92)	19810003608	F	B	P.P	EWE	SWM.	Likoni-Labourer
93)	19950003684	F	B	P.P	EWE	SWM.	Likoni-Labourer
94)	20000003565	F	B	P.P	EWE	SWM.	Likoni-Labourer
95)	20000003681	F	B	P.P	EWE	SWM.	Likoni-Labourer
96)	20000009594	F	B	P.P	EWE	SWM.	Likoni-Labourer
97)	20000010613	F	B	P.P	EWE	SWM.	Likoni-Labourer
98)	20070008141	F	B	P.P	EWE	SWM.	Likoni-Labourer
99)	19940010944	M	B	P.P	EWE	SWM.	Likoni-Labourer
100)	19940011307	M	B	P.P	EWE	SWM.	Likoni-Labourer
101)	19950004538	M	B	P.P	EWE	SWM.	Likoni-Labourer
102)	20000010435	M	B	P.P	EWE	SWM.	Likoni-Labourer
103)	19870005011	M	L	P.P	EWE	SWM.	Likoni-Sub Co. sup
104)	19940001678	F	B	P.P	EWE	ENV.PA	lncharge of All Pruner
105)	20080000773	M	B	P.P	EWE	ENV.PA	lncharge of All Pruner
106)	200000094 78	M	B	P.P	EWE	ENV.PA	Lumumba - Labour
107)	19950004449	M	B	P.P	EWE	ENV.PA	Lumumba Road
108)	20000002755	M	B	P.P	EWE	ENV.PA	Lumumba Road
109)	1991 0002032	F	B	P.P	EWE	ENV.PA	Mai H.,M/Ty, Rw
110)	19810002843	F	B	P.P	EWE	SWM.	MajengoLaborour
111)	19870000966	F	B	P.P	EWE	SWM.	MajengoLaborour
112)	19940010579	F	B	P.P	EWE.	SWM.	MajengoLaborour
113)	19940011076	F	B	P.P	EWE	SWM.	MajengoLaborour
114)	19940011370	F	B	P.P	EWE	SWM.	MajengoLaborour
115)	19970006994	F	B	P.P	EWE	SWM.	MajengoLaborour
116)	20000009585	F	B	P.P	EWE.	SWM.	MajengoLaborour
117)	20000010293	F	B	P.P	EWE	SWM.	MajengoLaborour
118)	20000010837	F	B	P.P	EWE	SWM.	MajengoLaborour
119)	20080000684	F	B	P.P	EWE	SWM.	MajengoLaborour
120)	19810002816	M	B	P.P	EWE	SWM.	MajengoLaborour
121)	19810004356	M	B	P.P	EWE.	SWM.	MajengoLaborour
122)	19810004392	M	B	P.P	EWE	SWM.	MajengoLaborour
123)	19820002677	M	B	P.P	EWE.	SWM.	MajengoLaborour
124)	19860003925	M	B	P.P	EWE.	SWM.	MajengoLaborour

125)	19860003943	M	B	P.P	EWE	SWM.	MajengoLaborour
126)	19870010966	M	B	P.P	EWE	SWM.	MajengoLaborour
127)	19910002816	M	B	P.P	EWE	SWM.	MajengoLaborour
128)	19910011255	M	B	P.P	EWE	SWM.	MajengoLaborour
129)	19910011906	M	B	P.P	EWE.	SWM.	MajengoLaborour
130)	19940002051	M	B	P.P	EWE	SWM.	MajengoLaborour
131)	19940004045	M	B	P.P	EWE	SWM.	MajengoLaborour
132)	19940005390	M	B	P.P	EWE	SWM.	MajengoLaborour
133)	19940010560	M	B	P.P	EWE	SWM.	MajengoLaborour
134)	19940010659	M	B	P.P	EWE	SWM.	MajengoLaborour
135)	19940010677	M	B	P.P	EWE	SWM.	MajengoLaborour
136)	19940011138	M	B	P.P	EWE.	SWM.	MajengoLaborour
137)	19950001395	M	E	P.P	EWE	SWM.	MajengoLaborour
138)	19950003157	M	B	P.P	EWE	SWM.	MajengoLaborour
139)	19990010979	M	B	P.P	EWE.	SWM.	MajengoLaborour
140)	20000004071	M	B	P.P	EWE	SWM.	MajengoLaborour
141)	20000010917	M	B	P.P	EWE	SWM.	MajengoLaborour
142)	20070004394	M	B	P.P	EWE	SWM.	MajengoLaborour
143)	20000002193	F	B	P.P	EWE	ENV.PA	Manyimbo Cemetery
144)	19940001730	M	B	P.P	EWE	ENV.PA	Manyimbo Cemetery
145)	20000001972	M	B	P.P	EWE	ENV.PA	Manyimbo Cemetery
146)	20000004008	M	B	P.P	EWE	ENV.PA	Manyimbo Cemetery
147)	20000006011	M	B	P.P	EWE	ENV.PA	Manyimbo Cemetery
148)	20100001081	M	B	P.P	EWE	ENV.PA	Manyimbo Cemetery
149)	9830000658	M	B	P.P	EWE	ENV.PA	Marna N, Law (-Pruner
150)	19940 I I 0551	F	B	P.P	EWE	ENV.PA	Mazeras B.G
151)	19940001963	F	B	P.P	EWE	ENV.PA	Mazeras B.G
152)	19870001693	M	B	P.P	EWE	ENV.PA	Mazeras B.G
153)	19870006447	M	G	P.P	EWE	ENV.PA	Mazeras B.G
154)	19870003204	M	B	P.P	EWE	ENV.PA	Mazeras B.G- Labour
155)	19940006084	F	B	P.P	EWE	ENV.PA	Mbaraki Cemetery
156)	19940006566	F	B	P.P	EWE	ENV.PA	Mbaraki Cemetery
157)	19870001657	M	B	P.P	EWE	ENV.PA	Mbaraki Cemetery
158)	19940003798	M	B	P.P	EWE	ENV.PA	Mbaraki Cemetery
159)	19970003199	M	B	P.P	EWE	ENV.PA	Mbaraki Cemetery
160)	20080000666	M	B	P.P	EWE	ENV.PA	Mbaraki Cemetery
161)	20130000392	M	B	P.P	EWE	ENV.PA	Messenger Yard
162)	19910002701	F	B	P.P	EWE	ENV.PA	Moi avenue
163)	19970003475	F	E	P.P	EWE	ENV.PA	Moi avenue
164)	19950003915	M	B	P.P	EWE	ENV.PA	Moi avenue
165)	20000004277	F	B	P.P	EWE	ENV.PA	Mwembetayari
166)	19790007073	F	B	P.P	EWE.	SWM.	New town-Labour
167)	19800000560	F	B	P.P	EWE	SWM.	New town-Labour
168)	19860005474	F	B	P.P	EWE	SWM.	New town-Labour
169)	19890014507	F	B	P.P	EWE.	SWM.	New town-Labour
170)	19910011853	F	B	P.P	EWE.	SWM.	New town-Labour
171)	19950003693	F	B	P.P	EWE.	SWM.	New town-Labour
172)	20000003074	F	B	P.P	EWE.	SWM.	New town-Labour
173)	20000003761	F	B	P.P	EWE.	SWM.	New town-Labour

174)	20000004311	F	B	P.P	EWE	SWM.	New town-Labour
175)	20000010355	F	B	P.P	EWE.	SWM.	New town-Labour
176)	20000010375	F	B	P.P	EWE	SWM.	New town-Labour
177)	20000010391	F	B	P.P	EWE	SWM.	New town-Labour
178)	20000010631	F	B	P.P	EWE.	SWM.	New town-Labour
179)	20000010677	F	B	P.P	EWE.	SWM.	New town-Labour
180)	19810002790	M	E	P.P	EWE	SWM.	New town-Labour
181)	19810004338	M	B	P.P	EWE.	SWM.	New town-Labour
182)	19860003952	M	B	P.P	EWE	SWM.	New town-Labour
183)	19860004039	M	B	P.P	EWE.	SWM.	New town-Labour
184)	19870009608	M	B	P.P	EWE.	SWM.	New town-Labour
185)	19870010941	M	B	P.P	EWE.	SWM.	New town-Labour
186)	19900012062	M	B	P.P	EWE	SWM.	New town-Labour
187)	19910010034	M	B	P.P	EWE.	SWM.	New town-Labour
188)	19910011862	M	B	P.P	EWE	SWM.	New town-Labour
189)	19910011960	M	B	P.P	EWE.	SWM.	New town-Labour
190)	19940005318	M	B	P.P	EWE.	SWM.	New town-Labour
191)	19940005336	M	B	P.P	EWE	SWM.	New town-Labour
192)	19940010695	M	B	P.P	EWE	SWM.	New town-Labour
193)	19940010873	M	B	P.P	EWE.	SWM.	New town-Labour
194)	19940011227	M	B	P.P	EWE.	SWM.	New town-Labour
195)	19940014808	M	B	P.P	EWE.	SWM.	New town-Labour
196)	19950004538	M	B	P.P	EWE.	SWM.	New town-Labour
197)	20000004393	M	B	P.P	EWE.	SWM.	New town-Labour
198)	20000004688	M	B	P.P	EWE	SWM.	New town-Labour
199)	20000009647	M	B	P.P	EWE.	SWM.	New town-Labour
200)	20000010355	M	B	P.P	EWE.	SWM.	New town-Labour
201)	20000010560	M	B	P.P	EWE.	SWM.	New town-Labour
202)	20000010640	M	B	P.P	EWE.	SWM.	New town-Labour
203)	20070004161	M	B	P.P	EWE.	SWM.	New town-Labour
204)	20070004312	M	B	P.P	EWE	SWM.	New town-Labour
205)	20080000791	M	B	P.P	EWE	ENV.PA	Nyerere avenue
206)	20000002746	F	B	P.P	EWE	ENV.PA.	Nyerere avenue
207)	2000014259	F	B	P.P	EWE	ENV.PA	Nyerere avenue
208)	19910009399	M	B	P.P	EWE	ENV.PA	Nyerere avenue
209)	199700032201	M	B	P.P	EWE	ENV.PA	Nyerere avenue
210)	20000002602	M	B	P.P	EWE	ENV.PA	Nyerere avenue
211)	19800003883	F	B	P.P	EWE	SWM.	Old Town-Labour
212)	19820003674	F	E	P.P	EWE	SWM.	Old Town-Labour
213)	19860005385	F	B	P.P	EWE	SWM.	Old Town-Labour
214)	19870006625	F	B	P.P	EWE	SWM.	Old Town-Labour
215)	19870008010	F	B	P.P	EWE	SWM.	Old Town-Labour
216)	19900010586	F	B	P.P	EWE	SWM.	Old Town-Labour
217)	19910011620	F	B	P.P	EWE	SWM.	Old Town-Labour
218)	19940006372	F	B	P.P	EWE	SWM.	Old Town-Labour
219)	19940010613	F	B	P.P	EWE	SWM.	Old Town-Labour
220)	19940010720	F	B	P.P	EWE	SWM.	Old Town-Labour
221)	19940010953	F	B	P.P	EWE	SWM.	Old Town-Labour
222)	19950008010	F	B	P.P	EWE	SWM.	Old Town-Labour

223)	19970007348	F	B	P.P	EWE	SWM.	Old Town-Labour
224)	19970009628	F	B	P.P	EWE	SWM.	Old Town-Labour
225)	19970010253	F	B	P.P	EWE	SWM.	Old Town-Labour
226)	20000001935	F	B	P.P	EWE	SWM.	Old Town-Labour
227)	20000003529	F	B	P.P	EWE	SWM.	Old Town-Labour
228)	20000004044	F	B	P.P	EWE	SWM.	Old Town-Labour
229)	20000005667	F	B	P.P	EWE	SWM.	Old Town-Labour
230)	20000009567	F	B	P.P	EWE	SWM.	Old Town-Labour
231)	20000010220	F	B	P.P	EWE	SWM.	Old Town-Labour
232)	20000010659	F	B	P.P	EWE	SWM.	Old Town-Labour
233)	20070004223	F	B	P.P	EWE	SWM.	Old Town-Labour
234)	20070004250	F	B	P.P	EWE	SWM.	Old Town-Labour
235)	19790001791	M	B	P.P	EWE	SWM.	Old Town-Labour
236)	19810003822	M	B	P.P	EWE	SWM.	Old Town-Labour
237)	19810004258	M	B	P.P	EWE	SWM.	Old Town-Labour
238)	19810004329	M	B	P.P	EWE	SWM.	Old Town-Labour
239)	19810004516	M	B	P.P	EWE	SWM.	Old Town-Labour
240)	19820002686	M	B	P.P	EWE	SWM.	Old Town-Labour
241)	19850005527	M	B	P.P	EWE	SWM.	Old Town-Labour
242)	19860001252	M	B	P.P	EWE	SWM.	Old Town-Labour
243)	19860004164	M	B	P.P	EWE	SWM.	Old Town-Labour
244)	19860004182	M	B	P.P	EWE	SWM.	Old Town-Labour
245)	19860005554	M	E	P.P	EWE	SWM.	Old Town-Labour
246)	19900011985	M	B	P.P	EWE	SWM.	Old Town-Labour
247)	19900012071	M	B	P.P	EWE	SWM.	Old Town-Labour
248)	19900012106	M	B	P.P	EWE	SWM.	Old Town-Labour
249)	19910009193	M	B	P.P	EWE	SWM.	Old Town-Labour
250)	19910009228	M	B	P.P	EWE	SWM.	Old Town-Labour
251)	1991001] 531	M	B	P.P	EWE	SWM.	Old Town-Labour
252)	19910011120	M	B	P.P	EWE	SWM.	Old Town-Labour
253)	19910011531	M	B	P.P	EWE	SWM.	Old Town-Labour
254)	19940005247	M	B	P.P	EWE	SWM.	Old Town-Labour
255)	19940005452	M	B	P.P	EWE	SWM.	Old Town-Labour
256)	19940011030	M	B	P.P	EWE	SWM.	Old Town-Labour
257)	19940011094	M	B	P.P	EWE	SWM.	Old Town-Labour
258)	19940011094	M	B	P.P	EWE	SWM.	Old Town-Labour
259)	19950004663	M	B	P.P	EWE	SWM.	Old Town-Labour
260)	19950004823	M	B	P.P	EWE	SWM.	Old Town-Labour
261)	19950004850	M	B	P.P	EWE	SWM.	Old Town-Labour
262)	199S0003675	M	B	P.P	EWE	SWM.	Old Town-Labour
263)	20000003323	M	B	P.P	EWE	SWM.	Old Town-Labour
264)	20000003501	M	B	P.P	EWE	SWM.	Old Town-Labour
265)	20000004302	M	B	P.P	EWE	SWM.	Old Town-Labour
266)	20000010300	M	B	P.P	EWE	SWM.	Old Town-Labour
267)	20000010499	M	B	P.P	EWE	SWM.	Old Town-Labour
268)	20000010684	M	B	P.P	EWE	SWM.	Old Town-Labour
269)	20000010757	M	B	P.P	EWE	SWM.	Old Town-Labour
270)	20000010828	M	B	P.P	EWE	SWM.	Old Town-Labour
271)	20070004237	M	B	P.P	EWE	SWM.	Old Town-Labour

272)	19870001666	M	B	P.P	EWE	ENV.PA	Pruner -Treasury square
273)	19810003813	F	B	P.P	EWE	ENV.PA	Railway station
274)	20080000737	F	B	P.P	EWE	ENV.PA	Railway station
275)	19970003083	M	B	P.P	EWE	ENV.PA	Railway station
276)	20000002675	M	B	P.P	EWE	ENV.PA	Railway station- Labourer
277)	19940001769	F	B	P.P	EWE	ENV.PA	Ronald G Ngala
278)	19940006084	F	B	P.P	EWE	ENV.PA	Ronald G Ngala
279)	20080000719	M	B	P.P	EWE	ENV.PA	Speakers Residence
280)	19910002694	F	B	P.P	EWE	ENV.PA	T. 5 Garden -Labourer
281)	19940004869	F	B	P.P	EWE	ENV.PA	T. 5 Garden -Labourer
282)	19970003206	F	B	P.P	EWE	ENV.PA	T. 5 Garden -Labourer
283)	1994000195-l	M	B	P.P	EWE	ENV.PA	T. 5 Garden -Labourer
284)	19970003091	M	B	P.P	EWE	ENV.PA	T. 5 Garden -Labourer
285)	19870001675	M	B	P.P	EWE	ENV.PA	Town Hall- Supervisor
286)	2010000772	M	B	P.P	EWE	ENV.PA	TRADE
287)	20130000574	M	B	P.P	EWE	TRADE	TRADE
288)	19940005354	M	B	P.P	EWE	SWM.	Transport- Acting driver
289)	20000010622	M	B	P.P	EWE	SWM.	Transport- Likoni A. driver
290)	19970011075	M	F	P.P	EWE	SWM.	Transport- Public board - driver
291)	19970006478	M	D	P.P	EWE	SWM.	Transport- Yard Driver
292)	11994J011522	M	B	P.P	EWE	SWM.	Transport- Yard-Acting driver
293)	19860001207	M	B	P.P	EWE	SWM.	Transport- Yard-Acting driver
294)	19900003080	M	B	P.P	EWE	SWM.	Transport- Yard-Acting driver
295)	19940011215	M	B	P.P	EWE	SWM.	Transport- Yard-Acting driver
296)	19940011218	M	F	P.P	EWE	SWM.	Transport- Yard-Acting driver
297)	1994J011522	M	B	P.P	EWE	SWM.	Transport- Yard-Acting driver
298)	19950004985	M	F	P.P	EWE	SWM.	Transport- Yard-Acting driver
299)	19940011272	M	D	P.P	EWE	SWM.	Transport-Kibarani
300)	20000010668	M	B	P.P	EWE	SWM.	Transport-Likoni loader
301)	19910010301	M	B	P.P	EWE	SWM.	Transport-Mwakirunge dumpsite
302)	19910011808	M	F	P.P	EWE	SWM.	Transport-Yard-Driver
303)	19910011552	M	B	P.P	EWE	SWM.	Transport-Yard -Acting driver
304)	19910011871	M	B	P.P	EWE	SWM.	Transport-Yard -Acting driver
305)	19940011236	M	B	P.P	EWE	SWM.	Transport-Yard -Acting driver
306)	19950004832	M	B	P.P	EWE	SWM.	Transport-Yard -Acting driver

307)	19970009833	M	B	P.P	EWE	SWM.	Transport-Yard -Acting driver
308)	20000005141	M	B	P.P	EWE	SWM.	Transport-Yard -Acting driver
309)	20070004063	M	B	P.P	EWE	SWM.	Transport-Yard -Acting driver
310)	20070004214	M	B	P.P	EWE	SWM.	Transport-Yard -Acting driver
311)	19820001394	M	G	P.P	EWE	SWM.	Transport-Yard Driver
312)	19910011924	M	F	P.P	EWE	SWM.	Transport-Yard Driver
313)	19960009152	M	F	P.P	EWE	SWM.	Transport-Yard Driver
314)	19970005602	M	E	P.P	EWE	SWM.	Transport-Yard Driver
315)	19910009184	M	B	P.P	EWE	SWM.	Transport-Yard Kibarani
316)	19940011129	M	B	P.P	EWE	SWM.	Transport-Yard loader
317)	20000009647	M	B	P.P	EWE	SWM.	Transport-Yard loader
318)	19940010766	F	B	P.P	EWE	SWM.	Transport-Yard office
319)	20000002764	F	B	P.P	EWE	SWM.	Transport-Yard office
320)	19700007242	M	B	P.P	EWE	SWM.	Transport-Yard office
321)	19810003993	M	B	P.P	EWE	SWM.	Transport-Yard office
322)	19810004409	M	F	P.P	EWE	SWM.	Transport-Yard office
323)	19860005376	M	B	P.P	EWE	SWM.	Transport-Yard office
324)	19870009475	M	B	P.P	EWE	SWM.	Transport-Yard office
325)	19870009591	M	B	P.P	EWE	SWM.	Transport-Yard office
326)	19870010978	M	B	P.P	EWE	SWM.	Transport-Yard office
327)	19880002013	M	E	P.P	EWE	SWM.	Transport-Yard office
328)	19900000583	M	E	P.P	EWE	SWM.	Transport-Yard office
329)	19900010602	M	B	P.P	EWE	SWM.	Transport-Yard office
330)	19900011583	M	B	P.P	EWE	SWM.	Transport-Yard office
331)	19910009246	M	B	P.P	EWE	SWM.	Transport-Yard office
332)	19910011611	M	B	P.P	EWE	SWM.	Transport-Yard office
333)	19910011899	M	B	P.P	EWE	SWM.	Transport-Yard office
334)	19910012047	M	B	P.P	EWE	SWM.	Transport-Yard office
335)	19920013609	M	B	P.P	EWE	SWM.	Transport-Yard office
336)	19940005345	M	B	P.P	EWE	SWM.	Transport-Yard office
337)	19940005514	M	B	P.P	EWE	SWM.	Transport-Yard office
338)	19940005603	M	B	P.P	EWE	SWM.	Transport-Yard office
339)	19940005854	M	B	P.P	EWE	SWM.	Transport-Yard office
340)	19940010640	M	B	P.P	EWE	SWM.	Transport-Yard office
341)	19940011316	M	B	P.P	EWE	SWM.	Transport-Yard office
342)	19940011352	M	B	P.P	EWE	SWM.	Transport-Yard office
343)	19940011352	M	B	P.P	EWE	SWM.	Transport-Yard office
344)	19940011441	M	B	P.P	EWE	SWM.	Transport-Yard office
345)	19950001671	M	B	P.P	EWE	SWM.	Transport-Yard office
346)	19950003906	M	B	P.P	EWE	SWM.	Transport-Yard office
347)	19950004654	M	B	P.P	EWE	SWM.	Transport-Yard office
348)	19950004930	M	B	P.P	EWE	SWM.	Transport-Yard office
349)	19970009735	M	B	P.P	EWE	SWM.	Transport-Yard office
350)	19970011315	M	B	P.P	EWE	SWM.	Transport-Yard office
351)	20000006739	M	B	P.P	EWE	SWM.	Transport-Yard office

352)	20000010417	M	B	P.P	EWE	SWM.	Transport-Yard office
353)	20000010515	M	B	P.P	EWE	SWM.	Transport-Yard office
354)	20000010684	M	B	P.P	EWE	SWM.	Transport-Yard office
355)	20000010784	M	B	P.P	EWE	SWM.	Transport-Yard office
356)	20000011192	M	B	P.P	EWE	SWM.	Transport-Yard office
357)	20070002443	M	F	P.P	EWE	SWM.	Transport-Yard office
358)	20070003827	M	B	P.P	EWE	SWM.	Transport-Yard office
359)	20130000350	M	B	P.P	EWE	SWM.	Transport-Yard office
360)	19790007158	M	B	P.P	EWE	SWM.	Transport-Yard-acting Driver
361)	19900011949	M	B	P.P	EWE	SWM.	Transport-Yard-acting Driver
362)	19910011782	M	B	P.P	EWE	SWM.	Transport-Yard-acting Driver
363)	19910012234	M	B	P.P	EWE	SWM.	Transport-Yard-acting Driver
364)	19940001892	M	B	P.P	EWE	SWM.	Transport-Yard-acting Driver
365)	19950004976	M	B	P.P	EWE	SWM.	Transport-Yard-acting Driver
366)	19950009161	M	B	P.P	EWE	SWM.	Transport-Yard-acting Driver
367)	19960009134	M	B	P.P	EWE	SWM.	Transport-Yard-acting Driver
368)	19950003508	M	B	P.P	EWE	ENV.PA	Treasury Square-Pr
369)	19790008856	F	B	P.P	EWE.	SWM.	Tudor-laborour
370)	19870009582	F	F	P.P	EWE.	SWM.	Tudor-laborour
371)	19940003270	F	B	P.P	EWE.	SWM.	Tudor-laborour
372)	19940006002	F	B	P.P	EWE.	SWM.	Tudor-laborour
373)	19940011003	F	B	P.P	EWE.	SWM.	Tudor-laborour
374)	19940011021	F	B	P.P	EWE.	SWM.	Tudor-laborour
375)	19940011021	F	B	P.P	EWE.	SWM.	Tudor-laborour
376)	19940011147	F	B	P.P	EWE	SWM.	Tudor-laborour
377)	19940040686	F	B	P.P	EWE.	SWM.	Tudor-laborour
378)	19990002441	F	B	P.P	EWE.	SWM.	Tudor-laborour
379)	20000009638	F	B	P.P	EWE.	SWM.	Tudor-laborour
380)	20000010739	F	B	P.P	EWE.	SWM.	Tudor-laborour
381)	20000010775	F	B	P.P	EWE.	SWM.	Tudor-laborour
382)	20000010908	F	B	P.P	EWE.	SWM.	Tudor-laborour
383)	19810000965	M	G	P.P	EWE	SWM.	Tudor-laborour
384)	19810002165	M	B	P.P	EWE	SWM.	Tudor-laborour
385)	19860003149	M	F	P.P	EWE.	SWM.	Tudor-laborour
386)	19860005394	M	B	P.P	EWE.	SWM.	Tudor-laborour
387)	19860005545	M	B	P.P	EWE.	SWM.	Tudor-laborour
388)	19860061225	M	G	P.P	EWE	SWM.	Tudor-laborour
389)	19900001069	M	B	P.P	EWE.	SWM.	Tudor-laborour
390)	19900012080	M	B	P.P	EWE	SWM.	Tudor-laborour
391)	19910001256	M	B	P.P	EWE.	SWM.	Tudor-laborour
392)	19910009175	M	B	P.P	EWE.	SWM.	Tudor-laborour

393)	19910010460	M	B	P.P	EWE.	SWM.	Tudor-laborour
394)	19910011291	M	B	P.P	EWE.	SWM.	Tudor-laborour
395)	19910011559	M	B	P.P	EWE.	SWM.	Tudor-laborour
396)	19910011568	M	B	P.P	EWE.	SWM.	Tudor-laborour
397)	19910011844	M	B	P.P	EWE.	SWM.	Tudor-laborour
398)	19910011880	M	B	P.P	EWE.	SWM.	Tudor-laborour
399)	19910012010	M	B	P.P	EWE	SWM.	Tudor-laborour
400)	19940010999	M	B	P.P	EWE.	SWM.	Tudor-laborour
401)	19940011085	M	B	P.P	EWE.	SWM.	Tudor-laborour
402)	19940011405	M	B	P.P	EWE	SWM.	Tudor-laborour
403)	19940011423	M	B	P.P	EWE.	SWM.	Tudor-laborour
404)	19940011478	M	B	P.P	EWE	SWM.	Tudor-laborour
405)	19950004672	M	B	P.P	EWE.	SWM.	Tudor-laborour
406)	19950004887	M	B	P.P	EWE.	SWM.	Tudor-laborour
407)	19960001727	M	B	P.P	EWE.	SWM.	Tudor-laborour
408)	19960009090	M	B	P.P	EWE.	SWM.	Tudor-laborour
409)	19970003411	M	B	P.P	EWE	SWM.	Tudor-laborour
410)	19970010998	M	B	P.P	EWE.	SWM.	Tudor-laborour
411)	19980004504	M	E	P.P	EWE.	SWM.	Tudor-laborour
412)	20000003669	M	B	P.P	EWE	SWM.	Tudor-laborour
413)	20000004553	M	B	P.P	EWE.	SWM.	Tudor-laborour
414)	20000004777	M	B	P.P	EWE.	SWM.	Tudor-laborour
415)	20000010793	M	B	P.P	EWE.	SWM.	Tudor-laborour
416)	20070003717	M	F	P.P	EWE.	SWM.	Tudor-laborour
417)	20110000685	M	B	P.P	EWE.	SWM.	Tudor-laborour
418)	19950001402	M	F	P.P	EWE.	ADM.	Yarad-Offices
419)	19970012009	M	H	P.P	EWE	ENV.PA	Yard office
420)	19990019611	M	K	P.P	EWE.	ADM.	Yard office
421)	19940005952	F	H	P.P	EWE.	ADM.	Yard- Offices
422)	20000001936	F	B	P.P	EWE.	ADM.	Yard- Offices
423)	20000003903	F	F	P.P	EWE.	SWM.	Yard- Offices
424)	20000010962	F	B	P.P	EWE.	ADM.	Yard- Offices
425)	19860005410	M	C	P.P	EWE.	ADM.	Yard- Offices
426)	19950000736	M	D	P.P	EWE.	ADM.	Yard- Offices
427)	20030007174	M	L	P.P	EWE.	SWM.	Yard- Offices
428)	19940006182	F	B	P.P	EWE	ENV.P	Yard-Office
429)	9940001945	F	B	P.P	EWE	ENV.PA	yard-Office
430)	19870003302	M	B	P.P	EWE	ENV.PA	yard-Office
431)	19870004167	M	H	P.P	EWE	ENV.P	Yard-Office
432)	19950003460	M	E	P.P	EWE	ENV.PA.	Yard-Office
433)	20080000693	M	E	P.P	EWE	ENV.PA	Yard-Office
434)	20080000746	M	G	P.P	EWE	ENV.PA	Yard-Office
435)	9940006271	M	B	P.P	EWE	ENV.PA	Yard-Office
436)	19800004522	M	D	P.P	EWE.	SWM.	Yard-Offices
437)	19910002069	M	B	P.P	EWE.	SWM.	Yard-Offices
438)	19910019871	M	J	P.P	EWE.	SWM.	Yard-Offices
439)	19950004547	M	B	P.P	EWE.	SWM.	Yard-Offices
440)	20000003088	M	E	P.P	EWE.	SWM.	Yard-Offices
441)	20000004124	M	M	P.P	EWE.	ADM.	Yard-Offices

442)	9910014481	F	B	P.P	EWE	ENV.P	Yard-station
443)	19810004454	M	B	P.P	EWE	ENV.P	Yard-station
444)	19900012044	M	F	P.P	EWE	ENV.P	Yard-station
445)	19900110609	M	B	P.P	EWE	ENV.P	Yard-station
446)	19950001046	M	B	P.P	EWE	ENV.P	Yard-station
447)	19970003340	M	B	P.P	EWE	ENV.P	Yard-station
448)	20010001019	M	B	P.P	EWE	ENV.P	Yard-station
449)	196900 13620	M	B	P.P	EWE	ENV.PA	Yard-Tree Feller
450)	19970003537	M	B	P.P	EWE	ENV.PA	Yard-Tree Feller

Appendix II: Questionnaire

PART A: GENERAL INFORMATION

1. Respondents Gender

i.	Male	
ii.	Female	

2. How often do you recycle? Please tick where applicable. Choose only one box for your answer.

i.	All the time	
ii.	Daily	
iii.	Weekly	
iv.	Monthly	
v.	Not Sure	

PART B: SOLID WASTE MANAGEMENT PRACTICES

3. Using a Five Point Likert Scale of 1-5 where; Strongly Agree = 1, = Agree 2, Neutral = 3, Disagree = 4 and Strongly Disagree = 5; kindly state the extent of consent to the following recycling practices. (Tick one option). Your answer will go a long way in ensuring improvement in this sector. Your answer is highly guided and will only be used for this purpose only.

	THE EXTENT TO WHICH RECYCLING CONTRIBUTE TOWARDS IMPROVED SOLID WASTE MANAGEMENT	**1**	**2**	**3**	**4**	**5**
i.	Many purchased products are made from recycled materials					
ii.	Most residents prefer reuse of products through repairing, refurbishing, washing, or recovery of worn or used products, appliances, furniture and building materials					
iii.	Many people donateproducts or materials to others who need and can use the items					
iv.	Most organizations encourage employees to only print what they need and ensure that printer settings are defaulted to print double sided to save paper					

v.	Recycling saves energy, helps keep materials out of landfills & incinerators, and provides raw materials for the production of new products					
vi.	Recycling offer significant potential for reducing greenhouse gas emissions					
vii.	Recycling conserves natural resources including trees, metals and water hence leads to environmental preservation					

4. Using a Five Point Likert Scale of 1-5 where; Strongly Agree = 1, = Agree 2, Neutral = 3, Disagree = 4 and Strongly Disagree = 5; kindly state the extent of consent to the following government policies. (Tick one option). Your answer will go a long way in ensuring improvement in this sector. Your answer is highly guided and will only be used for this purpose only.

	THE EXTENT TO WHICH GOVERNMENT POLICIES CONTRIBUTE TOWARDS IMPROVED SOLID WASTE MANAGEMENT	**1**	**2**	**3**	**4**	**5**
i.	The local authority collects and transports resource wastes, food waste and general wastes separately to a specific dumping site					
ii.	A legislation was passed by the government that requires retailers selling electronics to take back and recycle these products					
iii.	A legislation is place requiring building owners to install LED lighting systems to save energy and enable visibility hence avoiding unnecessary waste dumping at night					
iv.	Reduction of VAT on items with environmental friendly labels could help in reducing the amount of waste from a production and a consumer perspective					
v.	Environmental assessment audits areadequately done hence identifying whether individuals and companies comply and adhere to waste management standards for example having dustbins on standby					
vi.	The county government has their working conditions and efficiency enhanced through provision of modem equipment and protective gear to					

	workers					

5. Using a Five Point Likert Scale of 1-5 where; Strongly Agree = 1, = Agree 2, Neutral = 3, Disagree = 4 and Strongly Disagree = 5; kindly state the extent of consent to the following education and awareness. (Tick one option). Your answer will go a long way in ensuring improvement in this sector. Your answer is highly guided and will only be used for this purpose only.

	THE EXTENT TO WHICH EDUCATION AND AWARENESS CONTRIBUTE TOWARDS IMPROVED SOLID WASTE MANAGEMENT	**1**	**2**	**3**	**4**	**5**
i.	Do you believe people need to be more educated on the subject of recycling and know where items go after they have been recycled?					
ii.	Waste awareness through media like TV, Radio, magazines and so on is critical in ensuring that there is waste management sustainability					
iii.	Education has been shown to be a critical component in encouraging public participation in recycling programs					
iv.	Embedding waste management into school programs is also a plus since children are the future of tomorrow					
v.	Public training is one of the critical components required in a solid waste project implementation system					

6. Using a Five Point Likert Scale of 1-5 where; Strongly Agree = 1, = Agree 2, Neutral = 3, Disagree = 4 and Strongly Disagree = 5; kindly state the extent of consent to the following customer focus practices. (Tick one option). Your answer will go a long way in ensuring improvement in this sector. Your answer is highly guided and will only be used for this purpose only.

	THE EXTENT TO WHICH PUBLIC PARTICIPATION CONTRIBUTE TOWARDS IMPROVED SOLID WASTE MANAGEMENT	1	2	3	4	5
i.	The public participates in the solid waste management process through individual household waste sorting					
ii.	Community organizations have been encouraged to promote recycling activities hence improving the level of public participation					
iii.	Citizens are willing paying for collection of the waste that they generate in their home/shop/stall					
iv.	Solid waste management is being carried out by cart pushers, resource merchants, private solid waste collectors, public among others					

7. Using a Five Point Likert Scale of 1-5 where; Strongly Agree = 1, = Agree 2, Neutral = 3, Disagree = 4 and Strongly Disagree = 5; kindly state the extent of consent that recycling, government policies, education & awareness and public participation promote solid waste management as implied below . (Tick one option). Your answer will go a long way in ensuring improvement in this sector. Your answer is highly guided and will only be used for this purpose only.

	Solid Waste Management	1	2	3	4	5
i.	Recycling contributes to solid waste management					
ii.	Government policies contributes to solid waste management					
iii.	Education and awareness contributes to solid waste management					
iv.	Public participation contributes to solid waste management					

Thank You for Your Feedback

Appendix III: Morgan's Table for Sample Size

Population Size	Confidence = 95%				Confidence = 99%			
	Margin of Error				Margin of Error			
	5.0%	3.5%	2.5%	1.0%	5.0%	3.5%	2.5%	1.0%
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	29	29	30	29	29	30	30
50	44	47	48	50	47	48	49	50
75	63	69	72	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	196	154	174	186	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	196	265	318	384	250	309	348	391
500	217	306	377	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1000	278	440	606	906	399	575	727	943
1200	291	474	674	1067	427	636	827	1119
1500	306	515	759	1297	460	712	959	1376
2000	322	563	869	1655	498	808	1141	1785
2500	333	597	952	1984	524	879	1288	2173
3500	346	641	1068	2565	558	977	1510	2890
5000	357	678	1176	3288	586	1066	1734	3842
7500	365	710	1275	4211	610	1147	1960	5165
10000	370	727	1332	4899	622	1193	2098	6239
25000	378	760	1448	6939	646	1285	2399	9972
50000	381	772	1491	8056	655	1318	2520	12455
75000	382	776	1506	8514	658	1330	2563	13583
100000	383	778	1513	8762	659	1336	2585	14227
250000	384	782	1527	9248	662	1347	2626	15555
500000	384	783	1532	9423	663	1350	2640	16055
1000000	384	783	1534	9512	663	1352	2647	16317
2500000	384	784	1536	9567	663	1353	2651	16478
10000000	384	784	1536	9594	663	1354	2653	16560
100000000	384	784	1537	9603	663	1354	2654	16584
300000000	384	784	1537	9603	663	1354	2654	16586

Appendix IV: Budget Estimates

NO.	Item description	Amount(kshs)
1.	Field activities and materials	Kshs. 25,000.00
2.	Travel expenses	Kshs. 8,000.00
3.	Thesis writing (Typing)	Kshs. 2,000.00
4.	Contingency	Kshs. 5,000.00
TOTAL		**Kshs. 40,000.00**

Appendix IV: Project Time Frame

Research Activities	**Mar**	**Apr**	**May**	**June**	**July**	**Aug**	**Sep**	**Oct**			**Nov**			
Decide in title and Objective of the project study														
Overview of thesis project														
Collection of related study materials including journals, books, reports														
Proposal writing upon literature review														
Proposal presentation														
Collecting of primary data from respondents														
Statistical data analysis and final draft project report submission														
Final project defense and Publication of report														
Final Corrections Submission as per requirements														