PROJECT PLANNING ON IMPLEMENTATION OF SOLID WASTE MANAGEMENT PRACTICES IN KISII CENTRAL SUB COUNTY, KISII COUNTY KENYA

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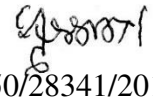
NOVEMBER, 2022

DECLARATION

This project is my authentic work and has not been presented in any other university or Higher learning institution for examination purpose.

Signature.  Date: 9TH August 2022

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This research project has been submitted for examination purpose with my approval as the University

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DEDICATION

This research work is dedicated to my father and Mother Mr. Haron Mogaka Mogusu and Mrs. Teresa Kerubo, who have constantly encouraged me to work hard and pursue my goals.

ACKNOWLEDGEMENT

I would want to express my gratitude to the University of Nairobi for providing me with a chance to enroll in this Programme, which has helped me learn a great deal about life. I thank my supervisor, Dr. Simon Njeri, for the tremendous work which has got me to this point.

My family members, close friends whose support and encouragement has made me come this far I appreciate your efforts.

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ABREVIATIONS AND ACRONYMS

AFBD **:** African Development Bank

EMCA **:** Environment Management and Coordination Act

GEF **:** Global Environment Facility

GIZ **:** Germany society for international Cooperation

GWASCO **:** Gusii Water and Sanitation Company

NEMA **:** National Environment Management Authority

UNEP **:** United Nations Environment Management Programme

WRMA **:** Water Resources Management Authority

ABSTRACT

Waste management has been a global issue of concern; all life forms have been affected by inefficient handling and disposal practices. To counter challenges of waste management planning for waste management comes in to mitigate negative impacts of waste on the environment. While most studies carried have been focusing on reducing waste generated, handling of waste and disposal the research sought to explore how project planning influence solid waste management practices. The study's objectives were as follows; investigate the contribution of stakeholders in solid waste management; examine resources planning influence implementation of solid management practices; establish how environmental education influences implementation of solid waste management practices; determine how household factors influences implementation of waste solid waste management practices. The study was guided by sustainable development theory Zero waste theory and descriptive research design; it deployed simple random sampling and questionnaires as instrument for data collection. The study targeted population of 166,906 and by use of (Yamane 1967) the sample size was 100 respondents. Primary data was collected by semi structured questionnaires; pilot study was undertaken to determine accuracy of research instruments. Qualitative and quantitative data was generated from the study, qualitative data underwent analysis though content analysis and thematic framework, whereas quantitative data was analyzed through application of descriptive statistics together with statistical package of social sciences, inferential was used to identify relation between independent and dependent variables. To test the significance level and the correlation that exist regression and ANOVA were used to analyse the data and resulted yielded data was presented in form of tables, figures and percentages. The research found that policy and county by laws, proper planning, capacity building, transparency, decision making, and monitoring and evaluation had significant influence on the implementation of solid waste management practices in Kisii Central Sub County. The research found that accountability, prioritization and management did not have much influence on the implementation of solid waste management practices in Kisii Central Sub County. The research found that public awareness and religion did not influence the implementation of solid waste management practices in Kisii Central Sub County. The study deduced that environmental education had the greatest influence on implementation of solid waste management practices in Kisii Central Sub County followed by resources planning then stakeholders planning while household factors had the least influence on implementation of solid waste management practices in Kisii Central Sub County. The result recommends that communities should be better educated on the disadvantages of ineffective solid waste management procedures and the advantages of sustainable solid waste management practices. Additionally, effective enforcement strategies must be put in place to protect effective trash collection and disposal.

CHAPTER ONE
INTRODUCTION

1.1 Background to the study

Project planning stands out as a pivotal activity in attaining a projects full cycle. It can be defined as predetermination of project milestones, objectives, means of realization, resources needed, risks, quality standards, relevant policies and regulations, timeline framework and means of evaluation before project commissioning. Whereas a project according to (PMP 2017) a project is a brief activity started with the intention of producing something special. Through planning stakeholders views are brought into account, helps to estimate and defend the costs associated with various project phases, helps to identify anomalies and adjust them according to plan, attain project at reasonable cost and timelines, helps to align project with Government policies and regulations consequently it enhances project sustainability.

Waste is referred as solid, liquid or gaseous state of a substance considered not beneficial to the user. Both developed and developing experience same challenge on best practices to adopt in dealing with waste handling, disposal or recycling methods (Atkin 2018). Waste often exceed assimilative capacity of the environment, thus individuals, corporates, Governmental bodies have a responsibility to manage the waste efficiently. (Awosan,2017) study reveals that about a third to two thirds of waste remains uncollected and this finds way to drains, clogging them creating habitat for disease causing pests. Lack of a plan for the management of waste has often plunged Nations into pandemics, example the Black Death plague that claimed the lives of half of European population in fourteenth century an incident that necessitated Authorities to start collecting and disposing of waste in a sanitary manner to control disease vectors.

Ineffective solid waste management has been linked to ecological effects on the water and air. Liquid discharge and poorly built landfills have contaminated surface and underground water sources for instance in mining, chemicals used such as lead, magnesium and calcium contaminate water sources with unwanted salts. On air pollution fumes from manufacturing industries, burning of fuels by engines has contributed greatly to global warming. The capacity of nature to disperse, absorb effects of poor waste management has been stretched much creating an ecological imbalance thus compelling for adoption of waste management practices.

To inculcate responsible handling practices both in public and domestic levels, legislation, public attitude, financial support are vital. (Whitmars, Haggar, 2018) according to them a departure

from wastefulness might reduce the tonnage of wastes to be managed, more habits of people must change through their own volition, guided by conservation groups, industrial and Governmental agencies. Scientific and professional expertise plays vital role in waste management since the techniques that applied to grow industrial and business realms are necessary to solve environmental issue.

Management hierarchy contributes to efficient waste management, (Godfrey, 2019), a well-organized waste management structure should consist a plan of empowering waste management workers through capacity building in order for them to be able to embrace new efficient technology and methods of handling waste, a financial system which stems from local authorizes, donors or collected taxes from public and a structured public education plan whereby waste management is taught at family level all the way up to industrial or manufacturing.

In Kenya waste management is a responsibility of County Government, works in liaison with Ministry of Environment and Natural resources, National Environment Management Authority, Ministry of public Health and Sanitation, Water resources management Authority. At the county level County Ministry of Environment and Natural resources is mandated to waste collection and disposal activity. Agenda 21 of United Nations (1997) mandates that in order to maintain the environment, human health, and quality of life, countries must analyze the environmental compatibility of infrastructure in human settlements, define national targets for sustainable waste management, and deploy environmentally sound technologies.

The Agenda 21 report further emphasizes integration of planning in construction of human settlements, development, upkeep, and management of environmental infrastructure should be strengthened by bilateral and international organizations. The document brought about Environmental impact assessment /Audit which is carried on proposed projects to assess and revert possible negative impacts on the environment in Kenya the process is steered by certified NEMA experts.

Through advocacy locally and internationally a number of legislative frameworks have been put in place, EMCA (1999) mandates NEMA to oversee implementation of Environmental impact assessment on projects before initiation to reverse possible negative consequences that may arise as a result of a project being implemented. NEMA Kenya and county Governments are accountable in environmental management, down in management structure at counties and sub county levels to ensure enforcement of the laws and regulations.

As indicated to in the 2019 Kenya Population and Housing Census, Kisii County, is among the 47 counties in Kenya, has a population of 1,266,860 people and is situated in the South Nyanza region. It has a total area of 1,317 km2. Homa Bay to the North West, Bomet to the south-east, Migori to the west, Narok to the south, Kisumu to the north, and Nyamira to the east are the six counties that border it. It is located to Lake Victoria's southeast. In the County, there are two different types of settlements: clustered and scattered. Urban regions are more likely to have clustered settlements than rural ones. In the County, there has been ribbon-style growth along the main thoroughfares, resulting in centers that present difficulties for service delivery, particularly in waste management because such centers are not planned.

The county Government efforts in waste management has been immense for instance the 2019 partnership with Malaysian investors in establishing an e waste recycling that will be dealing with electronic wastes, the county government too has partnered with youth groups who participate in collection of waste in different zoned estates within the town, previously waste in the town was used to be dumped in an already filled disposal cemetery grounds but recently the county Government acquired land at Nyatieko for waste disposal.

Through annual budgetary allocation each year the county Government has been able to acquire tractors for waste transportation, expand waste collection services to the whole town, servicing stalled waste transportation vehicles, buying new waste handling equipment, capacity building for waste management staff and creating sensitization to the public on waste management issues. A study by (Mugweri, 2018) suggests that public awareness and education are vital in growing a responsible solid waste management culture from the public.

Embracing concept of Just in time from quality management in assembling resources needed financial, skilled labor force, engaging stakeholders and timely review of process of handling waste will contribute greatly in systematic of waste control which flows from generation, picking, transportation ,treatment/recycle, disposal and the enactment of various waste containment measures will greatly contain challenges of waste.

1.2 Statement of the problem

Global decline of mortality rate has led to rise of human population, (Rai,2020) suggest that because of the projected growth in human numbers nations authorities need to adopt smart city concept to manage waste needs of the future. The contribution of various actors to attain

efficient waste planning and management is integral part among them include; Environmentalist, politicians, funder/Donor community, and Public and Government agencies. Due to poor urban planning and low household income levels much of the population resides in congested places which are often associated with poor infrastructure and unhygienic conditions while a few affluent live in hygienic estates and gated communities.

Economic strength of nations determines the level of solid waste management attained annually (Kituku, Odote 2020) Kenya just like other developing countries waste management with limited budgetary allocations. Insufficient ability to handle contracts, organize, and oversee operations. Because of these considerations, 'sustainable solid waste management' is an interesting issue for low- and middle-income countries and their cities to deal with as they chase economic development. Poor waste management has devastating effects that disproportionately affect the people with low income and disadvantaged in society, who are frequently uninvolved in or have little influence over how waste is disposed of informally or legally near their settlements. Studies conducted indicate there is a relationship between waste ailments such as Cholera, typhoid, Malaria, Kidney ailments, Dengue and zika

The existing waste management methods make waste to it being underestimated overlooking the benefits it can bring about to the economy for instance recyclable items end up being discarded forcing importation for new supplies. The need for elaborate waste management practices and systems cannot be underrated which encompasses having skilled workers, sufficient funding of the sector, and synthesized public in issues of waste management and involvement of waste management stakeholders.

Due to rapid increase of population in Kisii county measures should be adopted to estimate and accommodate waste management needs for its ever raising population, The high population in Kisii can be linked to it being located on major highway leading to Tanzania and rest of East Africa, therefore waste planning is pertinent to realization of sustainable waste management in urban environment. Kisii county just like rest of the world has embraced the concept to create a clean urban center through expansion of its waste management capacities, integration of technology in waste management among other measures thus this research aimed on establishing the influence of planning in successful implementation of waste management practices a case of Kisii central sub- county.

1.3 Purpose of the study

This study sought to explore influence of project planning on implementation of solid waste management practices

1.4 Research objectives

The following objectives served as the direction for this study;

i. Determine the contribution of stakeholders in planning in solid waste management.
ii. Establish how resources planning influence solid waste management.
iii. Determine how Environmental Education planning influence solid waste management.
iv. Assess factors determining household solid waste management practices.

1.5 Research questions

i. What contribution stakeholders play to attain successful solid waste management?
ii. What influence the Environmental Education planning have in solid waste management?
iii. How does resources availability influence successful solid waste management?
iv. What household factors determine household solid waste management practices?

1.6 Research Hypotheses

The following null hypothesis was tested in the study.

i. H_1: Stakeholders participation in planning has no significance on solid waste management practices.
ii. H_2: Resource planning has no significant influence on solid waste management practices.
iii. H_3: Public knowledge on environmental education and its planning has no significant relationship with Management of waste practices.

iv. H_4: Household factors have no significant relationship with solid waste management practices

1.7 Justification of the study

Kisii Sub County is a place of interest because it has experienced influx of population, it serves as a Centre for conference and meetings, hosts a number of learning institutions and a

commercial hub where people come from different parts of the country and beyond to trade .Due to increased activities within the area which notably is characterized by insufficient waste management systems most resident result to adopting unsustainable waste management practices, (Nyandarua, 2017) study to establish the effect of waste on surface water quality in Kisii through the analysis of water samples collected within the area he realizes various contaminants existence whereby he recommends that to have water that is free from contamination from chemicals and micro bio elements waste disposal mechanism should take into account the hydrological and topographical factor .

1.8 Significance of the study

The dynamism of a population needs determines the approach to solid waste management to be utilized, (Vollset, Goren, 2020) taking consideration of future population trends is essential in planning for diverse population needs of the time that is in terms of resources, Health needs, infrastructure and economic needs. Most of the Country's population will be residing in urban Centres (vision, 2030).

Researchers

To Academicians and Researchers, this study might contribute towards building knowledge on how integration of project planning in waste management will enhance successful solid waste management.

Government

Through research findings Government and other legislative bodies can enact regulations in solid waste management.

1.9 Limitations of the study

Lack of transparency from respondents in giving information which might be useful to my research work to solve this researcher would brief respondents need for accurate information and application of data collected, financial constraints are likely to be experienced to solve financial constraints the researcher will prepare all necessary tools in advance, create a diary for what and when this would help to keep focus on important events, and reaching out to all stakeholders might be difficult since the research would be conducted at a time of Covid 19 pandemic where

some workers are restricted to work from home. To address the challenge the researcher would observe Government Covid regulations and at the same time do advance booking for interested respondents before actual day

1.10 Delimitation of the study

Targeting stakeholders involved in waste management ensured research population was identified faster more easily and accurately.

Data was collected from relevant parties within waste management, with an aim to collect accurate data, with a view to determine how project planning can contribute to counter waste issue.

1.11 Assumption of the study

The sample chosen possessed characteristics of the population would be honest and give valid responses, Challenges and opportunities associated with waste management are the same within the county and finally factors like financial resources, management support, and politics influence implementation of waste management, most challenges faced in waste planning emanate from poor planning, Data collected would yield relevant results and findings.

1.12 Definition of Significant terms used in the study

Budgeting: it's a proposal statement estimating financial needs required to undertake an activity.

Environmental education: it's the knowledge body that entails ethical guidelines on utilization of environment in sustainable manner.

Environmental Impact assessment: Assessment that aims to predetermine impacts of a project before commission and taking preventive measures to counter negative impacts of a project.

Governance: it is a system of control that enhances accountability.

Household: Social unit staying together .the unit is in charge of their way of life and depend upon each other for survival.

Livelihood: It is a source of getting basic necessities of life this can be Assets and Activities that support life.

Public–Private Partnership (PPP): It is agreed mutual business working relationship between Government and Private Partners.

Quality Management: It is management aimed to ensure consistent results are obtained in this case clean and safe environment.

Stakeholders: People/Entities with direct or indirect interest in a project.

Zero waste: term used to encourage responsible production, consumption and disposal.

1.12 Organization of the study

This study consisted of five Chapters, whereby chapter one consists of the background to the research, problem of the statement, purpose of the study, objectives of the study, research questions, hypothesis, significance of the study, limitation of the study, delimitation and study assumptions, Chapter two comprises of literature review which consist of related studies from Africa and beyond, actors in waste management, review of Kisii waste management plans, theoretical frame work and the research gap. Chapter three comprises of methodology of the research, whose content are research design, target population, sampling procedure and sample size, instruments of research, reliability of research instruments, procedures for data collection, ethics in research and operationalization of study variables. Chapter four consists of data analysis, presentation, interpretation and discussion and Chapter five consists of findings, conclusions and recommendations.

CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

This chapter consist exploration of various efforts made through planning in attaining best practices in waste management from various countries within and outside Africa, an in-depth study into Kenya as a country and the Kisii county Government. It also entails the theoretical and conceptual framework.

2.1 Influence of Project Planning on Solid Waste Management

Globally various countries have made strides to have better planning mechanisms in waste management and this study focused on the extent of the following determinants in successful waste management, stakeholders role, Public Environmental education, Governance, funding and its sources. According to (Njue,Mulwa,2021) a shared responsibility of effort between citizens, businesses, governments, and manufacturers is imperative just like adequate funding and legislation framework of the sector for attaining successful waste management.

Through adoption of classification strategy for waste panning and management, waste generated from settlements and work places is made valuable through innovative disposal mechanism which have been developed. (Beynart,2019) research on zero waste planning in Minneapolis city in the united states of America focused on a blue print of a strategic plan of years between 2017 to 2022 whereby products or goods life cycle is used helps in formulation of waste management strategy, for instance energy production. Other studies identify this method as ineffective in achieving successful waste management plan since its expensive, time consuming and labour intensive. Just like previous study adequate resources, policy framework, public attitudes and awareness are emphasized as key in attaining successful waste management system.

Urban planning is considered pertinent in realization of successful waste management a study by (Squire, Nkurunzinza, 2021) in Rwanda on waste matters in planning he explored in-depth the importance of town planning for easy waste management, he recognizes that Governance is vital in attaining waste management sustainability but he identifies that town planning alone cannot achieve much without it be supported by adequate resources.

Policy framework and partnerships stands out from the studies conducted as important factors in developing waste management system for instance German society of international cooperation

(GIZ 2014-2019) effort in building integrated solid waste management in Algeria, through waste collection, transportation, disposal and recycling activities. The partnership has helped to build environmental public awareness, capacity building through training of staff in waste management.

The ambition for countries to attain better solid waste management just like above discussed cases requires adequate planning that involves partnerships, good governance that is supported by sector legislations need to be enacted to optimize operational capacities of solid waste management.

Kenya just like most countries need for more skilled and semi-skilled labour force in the urban areas is stretching urban waste management infrastructure, (Newman and Thornley, 2011) suggest planning role should be handled by state and its agencies, through the set parameters for urban development and service delivery to its citizens. In order to plan for the diverse waste generated from settlements guided by sector specific laws and regulations and each financial year new priorities are set to improve waste management sector service delivery.

Waste management in Kenya is managed by County Governments and in service delivery it works in liaison with National Environment Management Authority, Public Health in the National Government, Ministry of Environment and Natural resources, Ministry of Lands and physical planning, Public private partnerships, and Development Partners. The county government has a responsibility of enactment of anti-liter laws on public and private lands such as road reserves by commuter vehicles will enable promotion of a clean and safe environment whereas the ministry of public health implements Health and safety Policies code that covers waste handling to prevent emergence of diseases and hazards that may arise following poor waste handling.

The ministry of physical planning lands controls utilization of land this includes managing land use where it regulates land use conversion for instance conversion of public land into a waste disposal site. Some pieces of land within the urban area which can be utilized by being converted into dump site to create more waste disposal sites. Despite efforts being made by county governments to have successful waste control systems, much is still needed in adoption of an integrated technology for instance waste can be used in generation of power, better disposal sites need to be built and each town to have appropriate standard disposal facility.

2.2 Resources planning influence on implementation of Solid waste management practices

Global Environmental facility (GEF) serves as a funding institution for United Nations it offers grants to developing countries to mitigate the diverse effects caused by environmental degradation in promotion of sustainability. The projects aims to rehabilitate and restore climate change, biodiversity, land degradation, the ozone layer, international waters, and persistent organic pollutants.

Funds for waste management in the Kenya is mainly acquired from the annual budgetary allocations, taxes collected locally and external partners. According to (Ali, 2019) for a system to operate optimally the financial needs for short term and long term plans need to be realized. At a national level resources are mobilized through various strategies among them adding taxes on imports or goods that comprise most of waste generated among them electronics and this helps to cover costs of environmental conservation. Adequate funding of county waste management plans makes efficient enables acquisition and maintain of machines, vehicles and equipment's.

Waste management involves trained staff be equipped with skills necessary for waste planning and management. A study by (SW Mugo, 2019) finds out majority of the institutions are face operating under poor infrastructure and little resources to enforce laws under their jurisdiction, to enhance performance Staff need relevant skills to prevent costly sourcing for expertise from abroad and at the same time it helps in the integration of new technology in waste management which can be realized by training and encouraging staff to enroll short courses. Waste management infrastructure such as analytical laboratory facilities within the county are important in undertaking basic tests of waste composition, PH, chlorine and metals, the absence of such infrastructure makes it difficult to make decisive conclusions of impact of waste disposal on natural environment such as rivers.

2.3 Stakeholders planning influence on implementation of solid waste management practices

Communal ownership of waste management responsibility determine the success levels achieved, according to (Kujala, Sachs 2022) stakeholder's active role is beneficial since it works on the problem fully. Each individual group or entity has its own views which uniquely impact

on waste management. In a Society if members perform their role in a small way it will lead to a clean and safe Environment (Dongjie, 2021).

2.3.1 County Government

The county government has key a role of enacting regulations and policies in waste management and charging waste transportation and disposal levy from individuals and companies. The control waste movement from collection point to disposal site, the county Governments work under enacted by laws which necessitates them to have a waste management plan before advancing for finances. To fulfill waste collection targets the county government partners with CBOs, /Ngos in realization of its objectives but the county Governments controls their operations by monitoring efficiency of their collection, transportation and disposal, to attain this obligation the county Government works in liaison with other relevant ministries and Agencies, public and private sector in promoting safe environment for all.

2.3.2 National Government

The national government has got responsibility of legislation on waste management policies which helps to curb waste from various sources example on goods importation, Quality checks, Packaging materials, Provision of guidance in case of disaster arising from waste mishandling. A study by (Kituku, Odote 2020) asserts that participation and cooperation from all sectors are important for the successful implementation of waste management strategies and that there needs to be a collective effort by citizens, businesses, governments, and manufacturers. To enable county Governments deliver effectively in waste management, funding, capacity building, monitoring compliance and technology integration should be supported by National Government.

2.3.3 External Partners

Throughout the world much has been realized through cooperation between nations and development partners, for safe management of waste it requires a well-developed plan, finances, trained staff, informed public and established systems of capacity building. Through the partnership technology transfer, adoption of best practices and sustainable development can be realized just like in world best waste managed countries.

2.3.4 Ministry of Lands and physical planning

The Kenyan constitution schedule IV has partially devolved the land responsibility. This pertains to the planning aspect's section on land surveying and mapping. County land management boards, whose primary duty is to oversee land transfers, are under the control of county governments. In Lands, the County Government works with development organizations to facilitate sustainable land resource use, formulate land use regulations, and plan the physical layout of urban infrastructure, among other duties. While the responsibility of the Ministry is to guide on planning and development of Land at National level, Development of urban public infrastructure and to provide clean and safe urban environment. Mutual working relationship between the Ministry of lands and County ministry of Environment is paramount to attain desired goals.

2.3.5 Gusii Water and Sanitation Company (GWASCO)

GWASCO was established in 2006 under (water act, 2002) with responsibility of ensuring public has affordable water and sewerage services that consists to collection, treatment and disposal of sewage in area of jurisdiction, provision and mentainance of water and sewerage infrastructure. The company draws water from river Gusii and Nyakomisaro.

2.3.6 Private Sector Enterprises

Private Enterprises here consist, large business either manufacturing, suppliers interested by selling in waste collection, transportation, disposal and recycling. This happens through a public private partnership contractual terms. Through such contracts the county Government can be able to lower cost associated with waste collection.

2.3.7 Informal private sector

The perception people have towards waste in a way it influences how its management is done for instance a study by (Sharma, 2019) waste in India is viewed as a resource to the people, it enables them to obtain income in a limited opportunities labour market. The sector comprises unregulated waste collection done by self-employed waste workers who are driven by poverty to collect waste and find anything valuable for selling the depend this as a source of livelihood the

work in unhygienic conditions to make ends meet often associated with social marginalization. Their efforts in solid waste management are valuable in waste management chain.

2.4 Environmental Education planning influence on implementation of solid waste management practices

Kenyan context the National Environment Management authority has overtime been responsible in conducting environmental education which aims in changing people's attitudes towards their surrounding this has been done through mass media, training of community groups on matters of environmental conservation, signs, posters and encouraging environmental conservative cultures. According to (Mugweri, 2018), educational attainment is important since it influences people's perception on waste management. Through this efforts public health is enhanced, protection of natural resources is promoted and more jobs opportunities can be realized.

2.5 Influence of Household factors on solid waste management practices

Global perspective

Developed countries have embraced better waste management systems since of their financial stability this consist of modern technology in waste recycling ,waste collection and even production of eco-friendly items unlike the developing where majority are struggling to come up with basic structure and infrastructure of waste management coincidentally from studies this country's population increase stands high bringing about imbalance between population needs and resources available for its people.

Income levels

Increase in population proportionally rises the consumption rate, the more is consumed the higher the waste generated, according to reports in developing countries half of its population live in less than a dollar a day considering the levies charged initiated by local county and sub-counties businesses and families mostly are unable to raise the money needed to facilitate safe waste collection and disposal. This undermines efforts to have a clean and safe towns at times which has triggered emergence of waste related ailments such as cholera and typhoid

Little options

Affluent families live in controlled areas which are characterized by clean and safe environment where waste generated is collected and disposed properly, connected water systems, better roads among other necessities for daily lives. For instance Nairobi Kibera slums and neighboring a gated community called Karen same to upcountry emerging towns whereby some sections are reserved for the affluent. Families with good financial background tend to live taking to consideration of better waste management practices.

2.6 Theoretical framework

The study looked into the influence planning has in realization of successful waste management. The study explored role of various actors, funder's public, Ngos, National Government, and Local Government who have a role in achieving successful waste management. The study concentrated on the contribution of various actors in successful waste management plan, planning and utilization of natural resources, policies and various legislation roles in effecting efficient execution of sector management practices and public knowledge on environmental consciousness.

This study explored on role of the county Government and how it has managed to make commendable positive progress in waste management through planning strategy to achieve waste management objectives. Kisii just like other counties shares similar challenges and opportunities in waste management but through undertaking reforms in Governance, establishment of accountability systems and inviting various partners on board much has proved can be realized.

2.6.1 Sustainable Development theory

The study was grounded on sustainability theory whereby meeting needs of current generation doesn't compromise needs of future generations. Edward freeman (1984) For the Social, Economic, Political and Environmental systems to function well there should be common agreeing point. Successful waste management promotes health lifestyles that are in terms of food and water consumed. The establishment of governance structures that promotes accountability enables good management of resources allocated for waste management, formulation of sector specific policies which will positively impact to current and future generations.

2.6.2 Zero waste theory

The process of waste generation to proper disposal is characterized by high cost which arises from investment in skills, procurement of machinery for waste transportation and incineration .To attain smooth work flow engagement of stakeholders all along plays key role to the success. Paul Palmer theory (1970) on zero waste theory ensures waste generated is made useful either by recycling or conversion of the byproducts into a resource. Through utilization of the concept of Zero Waste in dismally reduces waste generated and this helps to keep the environment clean and safe for everyone.

2.7 Conceptual framework

Independent Variables

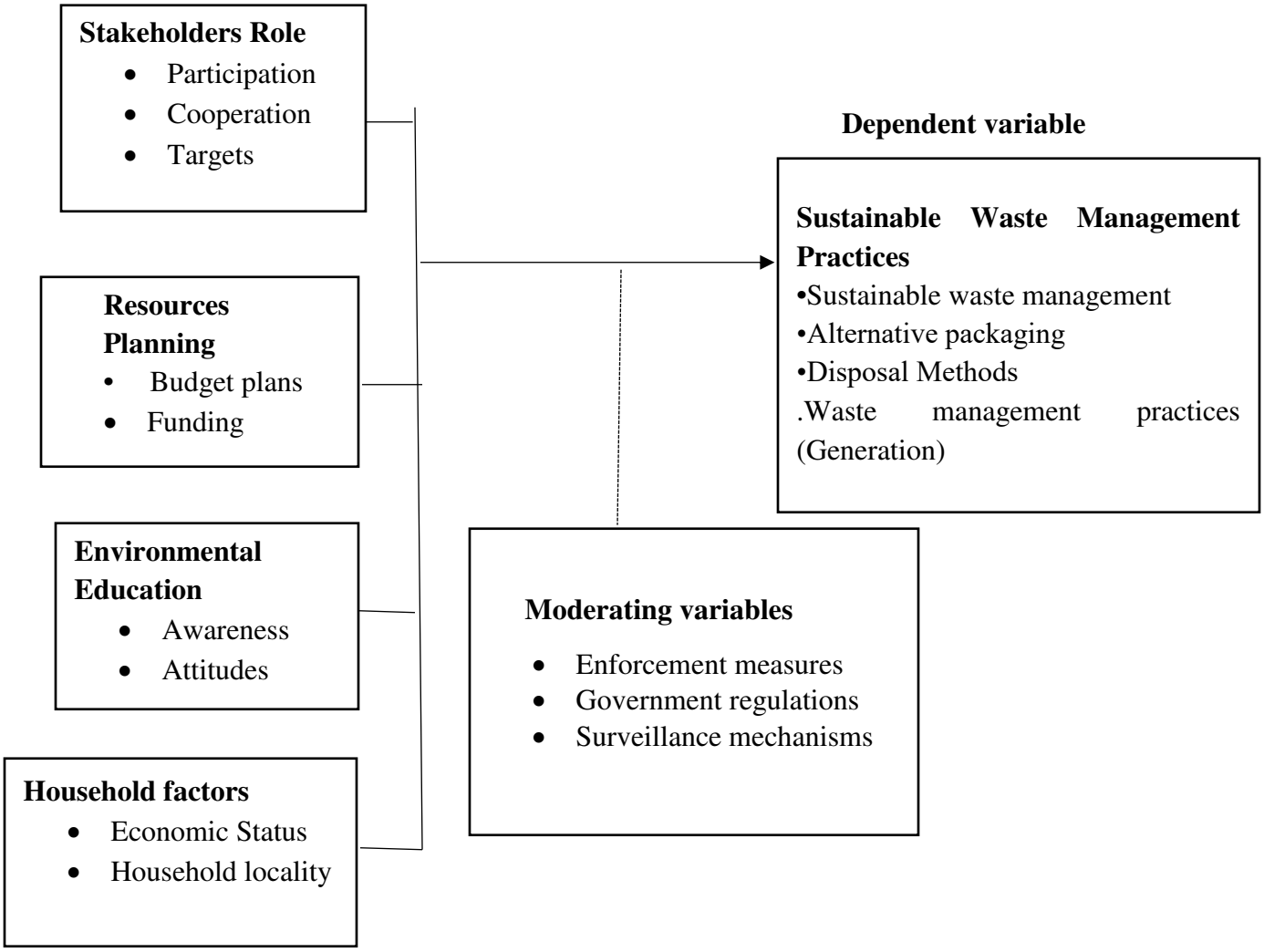


Figure 1: Conceptual Framework

2.8 Research gap

Variable	**Author and study year**	**Topic**	**Knowledge gap**	**Solution to the gap**
Stakeholder's role	(Njau ,2005)	(Njau, 2005) study on waste management in secondary towns	The study didn't explore on role of stakeholders in legislation and descion making in solid waste management	This study dwelt on stakeholders role at different levels
Environmental Education	(Oyieko, 2017)	waste disposal practices and their effect on quality of ground and surface water within Kisii County	The study didn't dwell on how knowledge on environmental issues influence solid waste management practices	Through administration of questionnaires this study established how environmental knowledge influence waste management
Resources planning	(Kerubo, 2011)	Factors influencing	The study didn't adequately	Through the use of Interview

		management on environmental projects a case of sewage and waste products in Kisii county	cover sources of funding , sustenance of funding needs	guide the researcher established how funding done
Household factors	KING'OO (2015) (Khaoya,2018)	Evaluation of domestic waste management procedures, Kiambu county, Kenya Role of households in waste management in Kisii	The study didn't focus on household income levels influence on solid waste management practices Takes in-depth look into the socio demographic factors on study team at household level, The study didn't include ability of the residents to sustain the waste management projects	The researcher was able to demonstrate a link between income levels and household waste management methods by using questionnaires.

Table 2. 1: Research gap

2.9 Summary of Literature Review

Waste management is an integrated process that requires various actors' participation for effective management that is Government, external agencies, Self-help groups, CBOs, Ngos, among others. The process is expensive to establish and run since it's a continuous and dynamic, waste classification keeps changing thus necessitating the need to integrate it with technology that helped identifying type of waste, waste transportation schedules, waste disposal and even recycling.

Integrated systems helped in panning, law enforcement, waste collection, transportation and disposal processes. Developed countries have embraced recycling of waste and this has led to drastic reduction of solid waste within their borders, recycled items are sold at a subsidized cost thus attracting demand .Due to ever increasing population not only in Kisii county but also in the rest of the counties waste management plans should be prepared in such a way to accommodate the increasing waste and changing nature of waste.

Effective planning is encouraged to work towards reducing quantities of waste generated and to handle waste in structured manner, essential to this is understanding the nature of the wastes generated. Consequently to address challenges associated to underfunding the county Government should increase partnerships with developing agencies and its local accountability levels.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This section comprises of systematic focuses on analyzing study procedures applied.

3.2 Research Design

Its is a description on systematic procedures of research; analyze data, with aim of meeting research objectives. As indicated (Kothari and Garg, 2019) it is aligning of required steps for data gathering and analysis in consideration of research objectives and costs of procedure applied. The design facilitates smooth flow in research activities making it as efficient as possible, giving much information at a considerate cost, time and effort. The method also allowed researcher to present outcome in form of charts, diagrams, tables and percentages.

3.3 Target Population

It is part of a population with desired characteristics of the whole, according to (Simon, 2017) it's almost perfect representation of interested population. Population estimate according to (Census,2019) Kisii County has got a population of 1,260,509 with 308,054 households while the research study focused on Kisii central sub-county which had got a population of 163,782 with households of 44,311, estimation aims in determining the number of individuals in the study area.

3.4 Sample size and Sampling Procedures

The guide a researcher on quantitative characteristics of a population of focus.

3.4.1 Sample size

It's a population representative with features similar of whole population sampled for study purpose. (Orodho, 2003) defines sampling as choosing specified samples from a population to be representative of the whole. The (Yamane, 1967) method will be deployed to calculate the sample size.

The population in Kisii central was 166,906 with approximate figure of 1,229 per sq. /km with 44,311 households (Kenya Bureau of statistics Census 2019).

$n = N/1+N(e)^2$ First Equation

n is size of the sample

N is size of the population

e is Marginal error (study margin error calculated at 10%)

Population size of Kisii central sub county (N) = 163,782

Margin error (e) = 10% (0.1) will be calculated as below

$n = 163,782/1+163782(0.1)^2 = n = 163,782/1638.82 = 99.938980486$

n =99.93 approximately 100 respondents

Henceforth the study sample size was 100 community members.

Key informants	**Number Available**	**To be engaged in Research**
County ministry of Environment Chief executive officer	1	1
Ministry of land and physical planning Planning officer	1	1
Gusii water and sanitation officer CEO	1	1
Households	44,311	96
NEMA Kisii county Director	1	1

Source: KNBS 2019 Census report

Table 3. 1: Sample size distribution table

3.4.2 Sampling procedure

Sample design according (Kothari and Gaurav, 2019) it is a method applied in choosing components of a sample whereas, sample size is a count of items to be chosen from a population to derive a sample, for this research a hundred respondents were the sample size drawn from population of 163, 782 which consisted of 44,311 households according to (2019) census report. Through the use of simple random sampling the researcher dispatched the questionnaires and interview schedules to informants after filling them, they were withdrawn for data analysis

3.5 Research instruments

Primary data were gathered using structured questionnaires using drop-off and pick-up procedures on dates agreed upon by the relevant stakeholders. (Cooper and Schindler, 2018) through the application of structured questionnaire made it possible to have responses that are accurate to questions administered whereas unstructured allow respondents to give their honest opinion and this helped the researcher weigh the truthfulness of responses. Likert scale of 1 to 5 was deployed to check the preferred response. The researcher also used key informant interviews, observation as method of content analysis and data collection.

3.5.1 Pilot study

This was undertaken by researcher at Masimba town, Masaba South Sub county in Kisii county to check to what extent research instruments are reliable and valid in the study to be undertaken through it omissions, inadequacies in the questionnaire and interview guides were identified and rectified in advance. The pretest was conducted a week before the research, it focused on a sample of 20 households from target population without statistical consideration for testing the reliability of research instruments (Cooper and Schindler, 2018).

3.6 Validity of key

It involves measuring accuracy of instruments of research used, as referenced to (Livingstone, 2018) validity determines whether research instruments measured desired attribute to measure and the accuracy of the results. Validity is measured by researcher through administering questionnaires and assessing the responses given and looking for responses of other researchers work. The instrument's content validity—which refers to whether it adequately covers the research topic—was utilized by the researcher to assess whether it provided answers to the research questionnaire. Validity of the content was determined with expert and supervisor guidance.

3.7 Reliability of Research instruments

It aims to determine whether research instruments are able to yield same results at different times (Surucu, Maslakci, 2020) mentions that reliability's role is estimation of the degree that a research instrument generates same outcomes even after various repetition. An evaluation of the

consistency of replies on pilot surveys was done to reach a conclusion about the reliability of research tools.

The internal consistency measure Cronbach alpha, which has a cutoff of 0.6, was utilized by the researcher to determine the extent to which a group of measurement items may be regarded as a single latent variable. A metric for confidence that would be upheld in handling the responses was offered by reliability.

3.8 Data collection procedures

Researcher made appointments with targeted stakeholders in waste management on suitable dates to undertake the interview, attached a transmittal letter to each questionnaire. He made visits to various relevant respondents and assured them their responses were handled with confidentiality, dispatched the questionnaires and agreed to collect them in a week's period

3.9 Data Analysis techniques

It is concerned with methods used to gauge characteristics of collected information that helps to draw conclusion in regard to given subject, according to (Kothari and Gaurav Garg, 2019) .It involves testing a hypothesis and estimating the population's unknown parameter values in order to draw conclusions.

Quantitative and qualitative information is included in the final product, with qualitative data being examined using content analysis to create a thematic framework. While a 'social science 'statistical software was deployed to assess quantitative data.

3.10 Ethical considerations

This is behavioral guidelines that will assist researcher to interact with research environment in harmony. According to (Fleming, Zegwaard, 2018) ethical considerations are norms of conduct that distinguish permitted and unpermitted behavior in research activities. Thought this research the researcher took into consideration the professional and moral guidelines thus no falsification, plagiarism, and data fabrication involved. The permission to conduct research was duly sought and responses by interviewers were conducted with utmost trust and were applied entirely for research work.

3.11 Operationalization of variables

Objective	Variable	Indicator	Data Collection Tool	Measurement Scale	Analysis Techniques
Determine the role of stakeholders in successful implementation of waste management	Stakeholders	Decision making Resource allocation	Questionnaire	Ordinal	Distribution tables, Tabulation and percentages
Examine the influence of Household factors in waste management practices	Household determinants	Income levels Locality of households	Questionnaire	Ordinal	Frequency, Percentages. Standard deviation
Establish how resources availability influence successful waste management	Resources	Financial Resources Human resource	Interview Schedule	Ordinal	Percentages, Distribution tables, Standard deviations
Environmental education influence on successful implementation of waste management	Skills Attitudes	Financial Resources Human resource	Questionnaire	Ordinal	Distribution and tabulation tables, Regression and Standard deviations

Table 3.2: Operationalization of Variables

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF FINDINGS

4.1 Introduction

In this chapter, the researcher presents the findings that was gathered through the data collection process. The chapter provides the responses of the participants on Project planning on implementation of solid waste management practices in Kisii Central Sub County. In order to make the presentation and comprehension easier, the researcher prepared tables that listed the respondents' overall responses.

4.1.1 Response Rate

Researcher distributed 96 questionnaires, only 71 were returned fully completed. As indicated by Kothari and Gaurav (2019), a response rate of 50% is sufficient for analysis and presentation, a rate of 60% is good, and a rate of 70% and higher is great. This was 73.6 percent, which was within their guidelines. The assertion led to the conclusion that the response rate was quite good. The results are exhibited in Table 4.1.

Total Questionnaires administered	Filled questionnaires	Response Rate.
96	71	73.6%

Table 4.1 Response Rate

4.1.2 Reliability Analysis

The questionnaire reliability was determined by giving out the questionnaire to a pilot study ahead of issuing it to the main study. A coefficient (Cronbach alpha of 0.7 and above for all the construct is regarded as sufficient for the study. Table 4.2 below shows the outcomes

	Cronbach's alpha
Stakeholders planning	.711
Resources panning	.778
Environmental education planning	.701
Household factor	.833
Implementation of solid waste management practices	.742

Table 4.2: Reliability Analysis

As indicated by the above outcomes, household factors was more reliable with an alpha value of 0.833, trailed by resources with an alpha value of 0.778, then implementation of solid waste management practices with an alpha value of 0.742, then stakeholders planning with an alpha value of 0.711 whereas environmental education with an alpha value of 0.701 had the least reliability. This shows that the research tool was reliable and that no modifications were needed.

4.2 General Information of the Respondents

Researcher gathered data arising from varied groups of respondents based on their gender, age bracket, and highest level of education in this study. Tables were used to present the demographic information findings.

4.2.1 Respondents' Gender

The respondents were asked to specify their gender. Table 4.3 displays their responses.

	Frequency	**Percent**
Male	42	59.6
Female	29	40.4
Total	**71**	**100.0**

Table 4.3: Respondents' Gender

According to the results, 59.6 percent of respondents were male making up the majority and 40.4 percent were female being the minority. This suggested that the researcher did not collect data with a gender bias because all respondents were taken into account, regardless of gender.

4.2.2 Age Bracket of the Respondent

In addition, the respondents were requested to state their age group and below are results as listed

	Frequency	**Percent**
18-30 yrs.	15	21.2
30-40yrs.	16	23.1
40-50yrs.	18	25.2
51 and above yrs.	22	30.5
Total	**71**	**100.0**

Table 4. 4: Respondents' Age Bracket

According to the study's findings, 30.5% of respondents were above the age of 51, 25.2% were in their 40s to 50s, 23.1% were in their 30s to 40s, and 21.2% were between the ages of 18 and 30. This demonstrates that the most of respondents were matured, and implied that they would have a diversity of knowledge about the topic under investigation and willingness to share it.

4.2.3 Respondents' Highest Level of Education

The inquiry was done about highest education level held by the respondents. The education level was used to determine the respondents' competence in responding to study-related questions. Table 4.5 summarizes their responses.

	Frequency	**Percent**
Secondary	14	19.2
Certificate	27	37.7
Diploma	17	24.6
University	13	18.5
Total	**71**	**100.0**

Table 4. 5: Respondents' Highest Level of Education

According to the study results, 37.7 percent of respondents had obtained a certificate, 24.6 percent had obtained a diploma, 19.2 percent had completed secondary school, and 18.5 percent had completed university. This demonstrates, respondents involved in the survey were knowledgeable and ready in providing credible results.

From the interviews, the respondents were implored to specify their designation. They included the environment officer, NEMA Officer, Gusii water and sanitation company officer and Ministry of physical planning officer. Majority of them indicated that they have been in the County Government for more than 3 years.

4.3 Influence of Stakeholders Planning in Solid Waste Management Practices

The study aimed to ascertaining the influence of stakeholders planning on the implementation of solid waste management practices in Kisii Central Sub County. The researcher hence needed the

respondents to indicate their agreement level with the statements on the influence of stakeholders planning on the implementation of solid waste management practices in Kisii Central Sub County. The findings are shown in Table 4.6.

	Mean	**Std. Dev.**
Policy and county by laws	4.245	0.749
Accountability	3.073	0.943
Transparency	4.053	0.923
Decision making	3.921	0.551
Enforcement	3.458	0.674
Proper planning	4.240	0.502
Capacity building	4.187	0.683
Budgetary allocations	2.461	0.502
Monitoring and Evaluation	3.871	0.755
Composite Mean	**3.723**	

Table 4. 6: Level of Agreement with Statements on the Influence of Stakeholders planning on Implementation of solid waste management practices

As shown by the study outcomes, policy and county by laws had a mean of 4.245, proper planning had a mean of 4.240, capacity building had a mean of 4.187, transparency had a mean of 4.053, decision making had a mean of 3.921, and monitoring and evaluation had a mean of 3.871. These items had means that were higher in comparison with the composite mean of 3.723. This implied that policy and county by laws, proper planning, capacity building, transparency, decision making, and monitoring and evaluation had significant influence on the implementation of solid waste management practices in Kisii Central Sub County.

The findings also showed that enforcement had a mean of 3.458, accountability had a mean of 3.073, and budgetary allocations had a mean of 2.461. These items had means that were below that of the composite mean of 3.723. This implied that enforcement, accountability, and budgetary allocations did not influence implementation of solid waste management practices in Kisii Central Sub-county significantly.

The interviewees were asked to identify environmental projects that have been undertaken by the county in the last 5 years. They indicated that they have undertaken the solid waste management projects, pollution control projects and Borehole drilling projects. They were also asked to indicate which project specifically dealt with environment protection. They indicated that solid waste management, East African compliant recycling, and pollution control. They also added that the problems they experienced during planning and implementation of the projects included insufficient funds, delay in funds disbursement to undertake projects planned, inadequate skilled labour and inadequate machinery. The interviewees stated that the County Government intended to solve the mentioned challenges by liaising with National Government to solve the delay issue in time.

The interviewees were required to indicate the how the projects were funded and budgeted for. They indicated that the County Government gets budget allocations and grants from donor community. Moreover, they were asked to indicate whether the waste management projects were sustainable in terms of management and funding. They indicated the projects were not sustainable since the funds allocations differ from financial year to another. They also indicated that the County Government is responsible in paying waste management workers.

The interviewees were asked to indicate the funding related challenges in waste planning and management. They stated that statistics on waste can be misleading in regards to accuracy and comparability due to varied data collection and reporting methodologies. Uncertain or conflicting definitions across applicable directives, as well as resulting divergences in Counties' interpretations, exacerbate the situation. They went on to say that feasible remedies include guaranteeing extensive awareness about the existence of substance of concern in products, reducing and substituting concern substances, and improving management of concern substances that cannot be substituted.

4.4 Influence of Resources in Solid Waste Management Practices

The research aimed on examining the influence of resources on the implementation of solid waste management practices in Kisii Central Sub County. The study needs further information

on the extent to which respondents agreed with statements about the influence of resources on the implementation of solid waste management methods. The results are reported in Table 4.7.

	Mean	**Std. Dev.**
Prioritization	3.318	0.512
Funding	4.603	0.980
Management	2.954	0.828
Accountability	3.709	0.556
Resource mobilization	4.200	0.700
Composite Mean	**3.757**	

Table 4.7: Level of Agreement with Statements on the Influence of Resources on Implementation of solid waste management practices

Rendering to the outcomes, funding had a mean score of 4.603 and resource mobilization had a mean score of 4.200. These items had mean above the composite mean of 3.757 implying that funding and resource mobilization have a very significant influence on the implementation of solid waste management practices in Kisii Central Sub County. Further, accountability had a mean score of 3.709, prioritization had a mean score of 3.318 and management had a mean score of 2.954. These items had means below the composite mean of 3.757 implying that accountability, prioritization and management did not have much influence on the implementation of solid waste management practices in Kisii Central Sub County.

The interviewees were also required to indicate whether there is adequate and reliable funding for the projects. They indicated that there were not enough resources thus activities undertaken were limited. They also indicated that the county Government got outside support from DFID SUED fund. They added that they involved stakeholders in planning, managing and executing the projects from time to time to assist in making decisions. Further, the respondents were required to indicate the support that the public offers in waste management. They indicated that they assisted in paying waste collection levies, and exercising responsible behavior in SWM. They added that the County Government ensured that these projects plans are implemented to the letter by creating multi-stakeholder teams for monitoring project implementation, and

sufficiently funding the projects. Also, they indicated that there were monitoring and evaluation mechanisms for the projects such as field reports, and financial audits.

The interviewees were also asked to rate the relationship in terms of consultation of the office with the stakeholders and other teams involved in the "management of the project". Table 4.8 exhibits the outcomes.

	Frequency	**Percent**
Good	3	75.0
Average	1	25.0
Total	**4**	**100.0**

Table 4. 8: Relationship in Terms of Consultation of the Office with the Stakeholders and other Teams Involved in the Project Management

Table 4.8 shown that 75% of the respondents pointed out that the relationship in terms of consultation of the office with the stakeholders and other teams involved in the management of the project was good while 25% indicated that it was average.

The interviewees were also implored to rate the level of funding for waste management projects. Table 4.9 exhibits the outcomes.

	Frequency	**Percent**
Inadequately	1	25.0
Fair funded	3	75.0
Total	**4**	**100.0**

Table 4.9: Level of Funding for Waste Management Projects

The outcomes revealed that 75% of respondents pointed out funding for waste management projects was fair while 25% indicated that it was inadequate. The interviewees were asked to rate the assistance given by the government to sustain waste management projects. The findings show as Table 4.10.

	Frequency	Percent
Unsupportive	2	50.0
Moderately supportive	2	50.0
Total	**4**	**100.0**

Table 4.10: Level of Funding for Waste Management Projects

The outcome implied that 50% of respondents showed assistance given by the government to sustain waste management projects was unsupportive while 50% indicated that it was moderately unsupportive. The interviewees were required to state the main challenge facing waste management programmes. They stated that there are still difficulties in Kisii including such garbage disposal in prohibited places, waste overflowing from bins, insufficient storage space, and asymmetric garbage pickup.

The interviewees were asked to indicate the environmental concerns in Kisii central sub county in waste management. They said that improper waste management directly affects numerous ecosystems and species, as well as contributing to air pollution and climate change. Landfills generate methane, a strong greenhouse gas connected to climate change, despite long being considered the waste hierarchy's last choice. They added that the County Government's objective is to change the waste sector from one characterized by low collection rates, illegal dumping, and unregulated dumpsites to one characterized by affordable waste collection, recycling, and composting, as well as safe final disposal of the remaining waste stream in engineered landfills.

4.5 Influence of Environmental Education in Waste Management

The research intended to ascertain the influence of environmental education on the implementation of solid waste management practices in Kisii Central Sub County. The responses on agreement level with statements in regards to environmental education influence on implementation of solid waste management practices. Table 4.11 gives the outcomes.

	Mean	Std. Dev.
Level of Education	4.319	0.719
Public awareness	3.459	0.515
Religion	2.712	0.975
Culture/Beliefs	4.408	0.495
Age	3.934	0.639
Composite Mean	**3.766**	

Table 4.11: Level of Agreement with Statements on the Influence of Environmental education on Implementation of solid waste management practices

The outcomes signified culture/beliefs had an average of 4.408, level of education had an average of 4.319 and age had an average of 3.934. These items had mean higher than the composite mean of 3.766. This showed that culture/beliefs, level of education and age had significant influence on the implementation of solid waste management practices in Kisii Central Sub County. The findings also revealed that public awareness had an average of 3.459 and religion had an average of 2.712. These items had mean lower than the composite mean of 3.766 hence implying that public awareness and religion did not influence the implementation of solid waste management practices in Kisii Central Sub County.

The interviewees were implored to show how often they conducted environmental education. They indicated that it was done every 6 months. They were also asked to state the activities that they do to involve the public in promoting environmental awareness and attitude change. They stated that they hold celebrations on world Environment day, and visit schools and markets places to sensitize the public. They also indicated that collaborative efforts exist between different departments in promotion of environmental education such as sharing environmental audit reports with various departments dealing with environment issues.

The interviewees also indicated that they prepare environmental education activities like publication of flyers posters annually. The researcher also required the interviewees to indicate some of the environmental concerns in Kisii central sub county in waste management. They indicated that there was limited space for expansion of waste management and insufficient funds. They indicated that the County Government seeks alternative funding mechanism and increases levy fees on WM to contain these environmental concerns.

The interviewees were asked to rate the level of public environmental education in Kisii central sub County. The results were as shown on Table 4.12.

	Frequency	**Percent**
Good	3	75.0
Average	1	25.0
Total	**4**	**100.0**

Table 4.12: Level of Public Environmental Education in Kisii Central Sub County

The findings revealed that 75% of the respondents indicated that public environmental education in Kisii central sub County was good while 25% indicated that it was average.

4.6 Influence of Household Factors in Solid Waste Management Practices

The research aimed on evaluating the influence of household factors on the implementation of solid waste management practices in Kisii Central Sub County. The researcher required to show their level of agreement on statements on household factors influence on implementation of solid waste management practices. Their answers were presented on Table 4.13.

	Mean	**Std. Dev.**
Household Income levels affect proper waste disposal	4.358	0.803
It is important to properly dispose waste	3.689	0.796
Waste is regularly collected and disposed by county officers	3.719	0.663
Population density affect proper waste disposal	2.692	0.582
Commercial activities affect clean and safe environment	3.519	0.545
Composite Mean	**3.595**	

Table 4.13: Level of Agreement with Statements on the Influence of Household Factors on Implementation of Solid Waste Management Practices

Table 4.9 pointed out that the item, household income levels affect proper waste disposal had a mean of 4.358 which was above the composite mean of 3.595. This implied that household income levels affected proper waste disposal in Kisii Central Sub County. Moreover, waste is

regularly collected and disposed by county officers had a mean of 3.719 which was above the composite mean of 3.595. This implied that waste was regularly collected and disposed by county officers. Further, the item, it is important to properly dispose waste had a mean of 3.689 which was above the composite mean of 3.595. This meant that disposing waste properly was very important.

The findings revealed that the item, commercial activities affect clean and safe environment had a mean of 3.519 which was less than the composite mean of 3.595.This implied that commercial activities did not affect clean and safe environment. Also, the item, the population density affect proper waste disposal had a mean of 2.692 which was less than the composite mean of 3.595. This implied that population density in Kisii Central Sub County did not affect proper waste disposal.

4.7 Implementation of Solid Waste Management Practices in Kisii Central Sub County

The researcher further explored how the respondents could rate the quality of waste management services provided by the county Government together with other stakeholders. The outcomes are as shown in Table 4.14.

	Frequency	**Percent**
Excellent	9	13.1
Very Good	22	31.6
Good	25	35.1
Poor	14	20.2
Total	**71**	**100.0**

Table 4.14: Implementation of Solid Waste Management Practices in Kisii Central Sub County

From the findings, 35.1% of the respondents rated the quality of waste management services provided by the county Government together with other stakeholders as good, 31.6% rated it as very good, 20.2% rated it as poor, while 13.1% rated it as excellent. This implies that despite challenges witnessed in the sector, the County Government together with other stakeholders try to provide quality waste management services.

4.8 Multiple Regression Analysis

The regression outputs findings are presented and discussed in this section. For the purpose of examining the influence of stakeholders planning, resources planning, environmental education, household factors and implementation of solid waste management practices in Kisii Central Sub County, regression model was estimated. The regression analysis allows the researcher to empirically examine the suggested hypothesis and accomplish the study goal. The outcomes are shown in tables 4.15, 4.16, and 4.17.

Model	R	R Square	Adjusted R Square	Std. Error of the estimate
1	0.885	0.783	0.770	0.990

Table 4.15: Model Summary

Table 4.15 shows a model suitability that shows how well the model equation matches the data. The modified R2 was applied to determine the study model's predictive power, which was found to be 0.770, suggesting that 77.0 percent of the deviations were predicted in implementation of solid waste management practices in Kisii Central Sub County are justified by changes in availability of household factors, environmental education, resources planning and stakeholders planning.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	243.566	4	60.892	59.462	3.52E-21
	Residual	67.587	66	1.024		
	Total	**311.153**	**70**			

Table 4.16: ANOVA Results

According to the likelihood value of 3.52E-21, regression association was significant in predicting how household factors, environmental education, resources planning and stakeholders planning influenced implementation of solid waste management practices in Kisii Central Sub County. The F calculated at 5 per cent level of significance was 59.462. Since F calculated is

greater than the F-critical (value from the F-tables using the df = 2.503), This demonstrates that the model as a whole was important.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.537	0.905		3.908	0.000
	Household factors	0.632	0.245	0.544	2.580	0.012
	Environmental education	0.843	0.333	0.785	2.532	0.014
	Resources planning	0.774	0.248	0.728	3.121	0.003
	Stakeholders planning	0.702	0.331	0.631	2.121	0.038

Table 4. 17: Regression Coefficients

The below was the regression equation obtained: -

$Y = 3.537+0.632X_1 + 0.843X_2 +0.774X_3 + 0.702X_4$

According to the results above, it was established that with the independent variables held constant at zero, then the implementation of solid waste management practices in Kisii Central Sub County will be 3.537. Further, the coefficient for household factors is 0.632 and was significant because p=0.012 is below 0.05, suggesting that a change by a unit in household factors translates to a 0.632 increase in implementation of solid waste management practices in Kisii Central Sub County. Therefore, the null hypothesis that stated that household factors has no significance on solid waste management practices was rejected implying that household factors have a significant influence on implementation of solid waste management practices in Kisii Central Sub County.

The study also revealed that a change with a unit in environmental education would translate to a 0.843 change in implementation of solid waste management practices in Kisii Central Sub County. The variable was significant since p-value=0.013<0.05. Therefore, the null hypothesis that stated that environmental education has no significance on solid waste management practices was rejected implying that environmental education has a significant influence on implementation of solid waste management practices in Kisii Central Sub County.

The study in addition revealed that a unit change in resources planning would translate to a 0.774 change in implementation of solid waste management practices in Kisii Central Sub County. The variable was significant because p-value=0.003<0.05. Therefore, the null hypothesis that stated that resource planning has no significance on solid waste management practices inferring that resources planning has a significant influence on implementation of solid waste management practices in Kisii Central Sub County.

The study also found that a change by unit in stakeholders planning would translate to a 0.702 change in implementation of solid waste management practices in Kisii Central Sub County. The variable was insignificant because p-value=0.038<0.05. Therefore, the null hypothesis that stated that stakeholders' planning has no significance on solid waste management practices denoting that stakeholders planning has a major effect on implementation of solid waste management practices in Kisii Central Sub County.

Overall, household variables had the least impact on the adoption of solid waste management methods in Kisii Central Sub County, with environmental education having the biggest impact. Planning for resources and stakeholders came next, and then planning for stakeholders had the biggest impact. Every factor was significant (p-values less than 0.05).

CHAPTER FIVE
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This Section offers discussion of each variable as well as a summary of the study's conclusions from the research that was done. It outlines the conclusions reached following the analyses. The chapter offers suggestions for refining the study and for conducting additional research.

5.2 Summary of Findings

The study aimed on assessing the influence of stakeholders planning on the implementation of solid waste management practices in Kisii Central Sub County. The research found that policy and county by laws, proper planning, capacity building, transparency, decision making, and monitoring and evaluation had significant influence on the implementation of solid waste management practices in Kisii Central Sub County. The research also established that enforcement, accountability, and budgetary allocations did not influence the implementation of solid waste management practices in Kisii Central Sub County significantly.

The research aimed on examining the influence of resources on the implementation of solid waste management practices in Kisii Central Sub County. The research found that funding and resource mobilization have a very significant influence on the implementation of solid waste management practices in Kisii Central Sub County. The research found that accountability, prioritization and management did not have much influence on the implementation of solid waste management practices in Kisii Central Sub County.

The research aimed at determining the influence of environmental education on the implementation of solid waste management practices in Kisii Central Sub County. The research found that culture/beliefs, level of education and age influences the implementation of solid waste management practices in Kisii Central Sub County. The research found that public awareness and religion did not influence the implementation of solid waste management practices in Kisii Central Sub County.

The study sought to evaluate the influence of household factors on the implementation of solid waste management practices in Kisii Central Sub County. The study found that household income levels affect proper waste disposal, waste is regularly collected and disposed by county officers; and it is important to properly dispose waste. The research also found that commercial activities did not affect clean and safe environment and population density in Kisii Central Sub County did not affect proper waste disposal.

5.3 Discussion of the Findings

It establishes a connection between the outcomes of this study and earlier investigations conducted on other research investigations. It explores findings in areas of stakeholders planning, resources, environmental education and household factors in connection to the implementation of solid waste management practices.

5.3.1 Stakeholders planning and Implementation of solid waste management practices

This study found that policy and county by laws, proper planning, capacity building, transparency, decision making, and monitoring and evaluation had significant influence on the implementation of solid waste management practices in Kisii Central Sub County. This is in line with Njue and Mulwa (2021) who stated that shared responsibility of effort between citizens, businesses, governments, and manufacturers is imperative just like adequate funding and legislation framework of the sector for attaining successful waste management.

The research also established that enforcement, accountability, and budgetary allocations did not influence the implementation of solid waste management practices in Kisii Central Sub County significantly. Urban planning is considered pertinent in realization of successful waste management a study by Nkurunzinza (2021) in Rwanda on waste matters in planning he explored in-depth the importance of town planning for easy waste management, he recognizes that Governance is vital in attaining waste management sustainability but he identifies that town planning alone cannot achieve much without it be supported by adequate resources

5.3.2 Resources and Implementation of solid waste management practices

The research found that funding and resource mobilization influence the implementation of solid waste management practices in Kisii Central Sub County. This is accordance to Ali (2019) who

stated for a system to operate optimally the financial needs for short term and long term plans need to be realized. At a national level resources are mobilized through various strategies among them adding taxes on imports or goods that comprise most of waste generated among them electronics and this helps to cover costs of environmental conservation. Adequate funding of county waste management plans makes efficient enables acquisition and maintain of machines, vehicles and equipment's.

The study also found that accountability, prioritization and management dint have much influence on implementation of solid waste management practices in Kisii Central Sub County. Mugo (2019) finds out majority of the institutions are face operating under poor infrastructure and little resources to enforce laws under their jurisdiction, to enhance performance Staff need relevant skills to prevent costly sourcing for expertise from abroad and at the same time it helps in the integration of new technology in waste management which can be realized by training and encouraging staff to enroll short courses.

5.3.3 Environmental education and Implementation of solid waste management practices

The research found that culture/beliefs, level of education and age influences the implementation of solid waste management practices in Kisii Central Sub County. This correlates with Mugweri (2018) who stated that educational attainment is important since it influences people's perception on waste management. Through these efforts public health is enhanced, protection of natural resources is promoted and more jobs opportunities can be realized.

The research found that public awareness and religion did not influence the implementation of solid waste management practices in Kisii Central Sub County. Panaretto, Dellit, Hollins, Wason, Sidhom, Chilcott and McDermott (2017) found that the Environment authority has overtime been responsible in conducting environmental education which aims in changing people's attitudes towards their surrounding this has been done through mass media, training of community groups on matters of environmental conservation, signs, posters and encouraging environmental conservative cultures.

5.3.4 Household factors and Implementation of solid waste management practices

The study found that household income levels affect proper waste disposal, waste is regularly collected and disposed by county officers; it is important to properly dispose waste; and commercial activities affect clean and safe environment. Coyle and Fair (2018) found that developed countries have embraced better waste management systems since of their financial stability this consist of modern technology in waste recycling ,waste collection and even production of eco-friendly items unlike the developing where majority are struggling to come up with basic structure and infrastructure of waste management coincidentally from studies this country's population increase stands high bringing about imbalance between population needs and resources available for its people.

The research also found that population density in Kisii Central Sub County did not affect proper waste disposal. Affluent families live in controlled areas which are characterized by clean and safe environment where waste generated is collected and disposed properly, connected water systems, better roads among other necessities for daily lives. For instance Nairobi kibera slums and neighboring a gated community called Karen same to upcountry emerging towns whereby some sections are reserved for the affluent. Families with good financial background tend to live taking to consideration of better waste management practices (Kathini, Koome, & Gitahi, 2020).

5.4 Conclusion

It was established that stakeholder planning has a substantial impact on the implementation of solid waste management methods. According to the study conclusion was that all stakeholders have unique strengths, weaknesses, opportunities, and threats that need to be properly utilized and controlled in order to build a sustainable SWM.. The approach would have ensured better mechanisms put in place to involve all stakeholders in determination of the projects they feel will adequately meets their needs instead of having it pre-determined at the top.

The study deduced that resources have a significant influence on implementation of solid waste management practices. In addition the study concluded that, a lack of resources contributes to unregulated disposal of waste in the area, leading to unclean and unsanitary environment. Reckless dumping and a lack of waste collection have resulted in unsightly sights of littered

waste. Due to a lack of defined disposal sites and disposal facilities, irresponsible garbage dumping has occurred on the roadways, drainage, and outside their homes. This has resulted in land degradation and a serious threat to public health.

The study concluded that environmental education and its planning has influences the implementation of solid waste management practices significantly. The study concluded that knowledge is essential in waste management programs and that knowledge influences the failure or success of sustainable waste management initiatives. The study also concluded that it is beneficial to teach young people about the importance of the environment and the necessity of its preservation. The study finds that if this instruction is provided in schools, the societal benefit will be passed on to families.

The study also concluded that household factors significantly influence the implementation of solid waste management practices. The study concluded that increase in household solid waste generation can be attributed to several factors, namely the household population, rapid development in the cities, increased consumer buying power among other causes. In addition, the composition of these of wastes can dictate the technology used before disposing it, thus the amount and composition of wastes generated influence the process of waste management.

5.5 Recommendations

The study recommend that Kisii Central Sub County Assembly ought to think of the suitable way of encouraging stakeholder's participation and involvement in solid waste management, identify and integrate scavengers to effectively collect the waste and finally increase public education on solid waste collection, reuse, reduction, recovery, and recycling.

Each local body must create a comprehensive master plan for the disposal of municipal solid waste. There must be frequent monitoring and periodic assessment of actions carried out in accordance with the master plan. County planning must include room for solid waste processing and disposal sites.

Residents must be better informed about the adverse effects of ineffective solid waste management procedures and embracing sustainable solid waste management activities. Residents will become more empowered through public education, leading to development of novel waste management strategies and the abolition of careless dumping. The implementation of an

educational and awareness-raising program for both children and adults. In addition to the curriculum, trained volunteers and teachers would provide environmental education at the neighborhood school.

Lack of adequate waste infrastructure facilities, such as the allocation of garbage collection stations, litter bins, and containers for residents, are to blame for the subpar disposal alternatives. These ought to be placed in areas where residents can use them to dispose of rubbish, and the environment department or CBOs will eventually empty and dispose of them.

Effective enforcement strategies must be put in place to protect effective garbage collection and disposal. To guarantee strict obedience, officers must be deployed on a regular basis to conduct field visits, and offenders must be fined. Households must be encouraged to recycle plastic bottles and bags. Some metal dealers also salvage used metal components from home solid waste, and small-scale traders salvage plastic and glass. The municipal authorities should take the lead in promoting the sorting of household solid trash, which can also lead to the generation of fuel and energy as well as compost manure which can be turned into a business enterprise that generates cash.

Bylaws must be strictly enforced, and new bylaws and rules must be created. Both a garbage collection policy that encourages environmental protection and a policy that promotes environmental health should be implemented in Kisii Central Sub County. As a result, the report suggests that current bylaws be vigorously enforced throughout the town and that new ones be created to keep up with the times, such as municipal policy.

5.6 Recommendations for Further Studies

The investigation focused primarily on how project planning influenced the adoption of solid waste management strategies. The focus of this study was primarily Kisii Central Sub County. The study advises next researchers to try and broaden their reach. Further research should be done to identify the impact of stakeholders planning in the implementation of solid waste management practices since the stakeholders planning approach had the least influence on implementation of solid waste management practices.

REFERENCES

Africa Development Bank (AFDB). (2011).Development Aid and Access to Water and Sanitation in sub-Saharan A.

Al-Khatib, I. A., Kontogianni, S., Abu Nabaa, H., Alshami, N., and Al-Sari', M. I. (2015).

Ashley, C and Diana. (1999).Sustainable livelihood approach lessons from earlier experiences Department of international Development (DFID) Russell's Press Ltd. Nottingham.

Bromley, D.W. (2007). Environmental regulations and the problem of sustainability: Moving beyond "market failure", CrossRef.

Cooper, D. R., & Schindler, P. S. (2006). Business Research Methods (9th edition). USA:

Cucchiella, F., D'Adamo, I., Gastaldi, M., 2014. Sustainable management of waste-to energy Development towards Sustainability. Canadian Center of Science and Education.

Eco forum, (2001). Lake Victoria: Economic Lifeline, Regional Toilet. (Water hyacinth prob), 25 (2) Cold Season. Engagement in developing a sustainability culture: Salcheto winery.

Eurasian Journal of Business and Management. India. Facilities. Renew. Sustain.

Ghada Mohammad Elrayies. (2016). Rethinking Slums: An Approach for Slums

Hashimoto, Y (2016). Waste Management in Urban India and role of social Enterprises. Health Condition of Slum Dwellers of Ijora-Badia Area of Lagos State, Nigeria.

Ilyas, S., Lee, J., Crystal, L., (2015). Hybrid leaching: An emerging trend in bioprocessing of secondary resources, in: Microbiology for Minerals, Metals, Materials and the Environment. Integrative stakeholder engagement.

International, and Ilishe Trust, (2007). Citizens' Report Card on Urban Water, Sanitation and Solid Waste Services in Kenya: Summary of Results from Nairobi, Kisumu and Mombasa. Nairobi. Nairobi.

Kenneth W. Harrison, Robert D. Dumas, and Morton A. Barlaz. (2000). A Life-Cycle Inventory Model of Municipal Solid Waste Combustion. Center for Environmental Analysis, Research Triangle Institute, Research Triangle Park, North Carolina.

Kenya Alliance of Resident Associations (KARA), Sustainable Aid in Africa (SANA)

Kenya National Bureau of Statistics. (2019) Housing and Population Census. Retrieved from http//: *www.knbs.or.ke/Census*

Kerubo, (2011). Study on factors influencing management on environmental projects a case of sewage and waste products. University of Nairobi

Kerzner (2000). Applied Project Management: Best Practices on Implementation. New York, NY: John Wiley & Sons, Inc.

Kerzner (2001).Strategic planning for project management using a project management maturity model. International Institute for Learning New York, New York.

Khaoya, (2018). Participation of households in solid waste management in Kisii municipality. Maseno University.

Kothari, C.R. (2019) Research Methodology Methods and Techniques. 4th Edition, New Age International Publishers, New Delhi. Kenya

Luda, M., 2011. Recycling of Printed Circuit Boards, in: Kumar, S. (Ed.), Integrated Waste Management.

Lukeman, Y., Bako, A., Omole, F., Nwokoro, I., & Alakinde, M. (2014). Environmental

Macoloo GC (1998). The relevance of Kenya's urban settlement policies for independent South Africa. *Southern African Geographical Journal* 80(2): 81–85.

Matthew, G. (Ed.). (2014).Recycling and the Politics of Urban Waste. Earth scan

McGraw-Hill.

Mitchell, R. K., Weaver, G. R., Agle, B. R., Bailey, A. D., & Carlson, J. (2016).

Mugenda and Mugenda. (2003) Research Methods: Act press, Nairobi.

Mugenda, O. M., & Mugenda, A. G. (2003). Research Methods, Quantitative and Qualitative Approaches. African Centre for Technology Studies. Nairobi Kenya.

Munala G (2009). A Viable Pro-poor Public-Private Partnership Management Model for

Ngera, (2014). Challenges and opportunities of inorganic solid waste reuse and recycling in Thika town, Kiambu County. Kenyatta University

Njau, (2005). Planning for novel ways in Solid waste management in secondary towns in Kenya. University of Nairobi

Nyandemo S. and Kongere T. ((2016). Project Management, From Design to. Implementation, Richmond Designers and Printers.

Nygaard, Graversgaard, Dalgaard, Jacobsen, Schaper (2021). The Role of Stakeholder Engagement in Developing New Technologies and Innovation for Nitrogen Reduction in Waters. A Longitudinal Study. MDPI.

Ochieng CC (2007). A critical review of housing delivery in Nairobi: Different actors – different socio-economic groups. *Arch Net-IJAR* 1(3): 140–152.

Orodho, A.J. (2003) Essentials of Educational and Social Science Research Methods. Mazola Publishers, Nairobi.

Owuor SO, Charlery B, Chretin M & Schaffner B (2006). Urban planning and management in small and medium-size towns. *Les Cahiers d'Afrique de l'Est* (supplementary issue), September: 23–48.

Oyieko, (2017). The impacts of solid waste on ground and surface water quality in Kisii municipality, Kenya. Kenyatta University

Patzer, M., Voegtlin, C., & Scherer, A. G. (2018). The normative justification of

Pedrini, M., & Ferri, L. M. (2019). Stakeholder management: A systematic literature

Public perception of hazardousness caused by current trends of municipal solid waste management.

Pucci, T., Casprini, E., Galati, A., & Zanni, L. (2020). The virtuous cycle of stakeholder

Review. Corporate Governance.

Rockefeller. (2013). Decision Intelligence Document: Constrained Opportunities in

Sich, B; Barlaz, M.A. (1999).Process Model Documentation: Calculation of the Cost and Life-Cycle Inventory for Waste Disposal in Traditional, Bioreactor and Ash Landfills; Department of Civil Engineering, North Carolina State University: Raleigh, NC.

Slums Economies.

Solano, E.S.; Ranjithan, S.; Barlaz, M.A.; Brill, E.D. (1999). Integrated Solid Waste Management Using a Life-Cycle Methodology for Considering Cost, Energy, and Environmental Emissions.

Stakeholder agency and social welfare: Pluralism and decision making in the multi-objective corporation.

UNEP (2007). Global waste management market report .Considerations from an economic point of view. Waste Management & Research 29: 891–901. Wilson.

UN-HABITAT (2005). *State of the world cities report 2004*. New York: Earth scan Publishers.

Wambugu, Kyallo, Mbii and Nyonje (2015).Research methods Research methods: Theory and practice. Kenya: Aura Publishers.

Water Supply Services: Co-sharing Option for Kisumu, Kenya. TUG, Austria.

White, P.R.; Frankie, M.; Hindle, P. (1995) Integrated Solid Waste Management: A Life-Cycle Inventory; Chapman & Hall.

World Bank (WB), (2012). Report what a waste. A Global Review of Solid Waste Management Washington DC.

World Bank, & UNCHS (Habitat). (2001). Cities Alliance for Cities without Slums.

APPENDICES

Appendix I: Transmittal Letter

Mogaka Nyakeriga Enock

Box 930-40202

Keroka.

April ……, 2022

To whom it may Concern.

Dear Respondent,

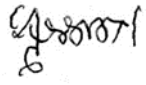
Re: Filling of Questionnaire

I'm Mogaka Nyakeriga Enock Currently pursuing Master's Degree in project planning and Management of the University of Nairobi. I have obtained permission from the University Management to conduct my Research for the award of my Degree. As part of my study it requires me to administer a questionnaire to generate insight on my research proposal topic "Influence of project planning on implementation of waste management practices a case of Kisii Central Sub-County in Kisii County.

Participation in the Study is Voluntary, all responses will be treated with confidentiality and will not be used for any purpose except for the study Objective.

Your assistance to provide information required will be highly appreciated.

Thank you,



Mogaka N. Enock

RESEARCH QUESTIONNAIRE

Appendix II: Questionnaire for House Holds

I am a University of Nairobi student pursuing a master's degree in project planning and management, and I hereby request your assistance in this interview as part of a prerequisite to complete my project. There is no correct or incorrect answer. Responses will be treated with secrecy the deserve.

SECTION A

1.0 What's your Gender? (Tick appropriately) MALE ( ) FEMALE ( )

2.0, what's your Age Bracket?

a) 18-30 ☐

b) 30-40 ☐

c) 40-50 ☐

d) 51 And above ☐

3.0 What's your highest Education Level?

a) Primary ☐

b) Secondary ☐

c) Certificate ☐

d) Diploma ☐

e) University (Others) ☐

SECTION B

Influence of Stakeholders planning in solid waste management practices. (Tick where appropriately)

Responses are given in a scale of 1 to 5 .where 5 is strongly Agree, 4 Agree, 3 fairly Agree, 2 strongly disagree, 1 Disagree,

To what extent Stakeholders planning influence solid waste management practices?

Factor	5	4	3	2	1	Comments
Policy and county by laws						
Accountability						
Transparency						
Descion making						
Enforcement						
Proper planning						
Capacity building						
Budgetary allocations						
Monitoring and Evaluation						

SECTION C

Influence of resources in solid waste management practices. (Tick where appropriately)

Responses are given in a scale of 1 to 5 .where 5 =strongly Agree, 4 =Agree, 3= Fairly Agree, 2 =strongly disagree, 1 =Disagree,

Do resources influence solid waste management practices?

Factor	5	4	3	2	1	Comments
Prioritization						
Funding						
Management						
Accountability						
Funding/Resource mobilization						
Others						

SECTION D

Influence of Environmental Education in waste management. (Tick where appropriately)

Responses are given in a scale of 1 to 5 .where 5 =strongly Agree, 4= Agree, 3= Fairly Agree, 2 =strongly disagree, 1= Disagree,

To what extent public environmental education and attitudes influence waste management?

Factor	5	4	3	2	1	Comments
Level of Education						
Public awareness						
Religion						
Culture						
Age						
Others						

SECTION E

Influence of Household factors in solid waste management practices. (Tick where appropriately)

Responses are given in a scale of 1 to 5 .where 5 i=strongly Agree, 4 =Agree, 3= Fairly Agree, 2 =strongly disagree, 1 =Disagree,

To what extent household factors influence solid waste management practices?

Factor	5	4	3	2	1	Comments
Household Income levels affect proper waste disposal						
It is important to properly dispose waste						
Waste is regularly collected and disposed by county officers						
Population density affect proper waste disposal						
Commercial activities affect clean and safe environment						
Others						

SECTION F

How can you rate the quality of waste management services provided by the county Government together with other stakeholders? (Tick appropriately and comment)

Excellent ☐ ……....……...

Very Good ☐ ……...……...

Good ☐ …….……...

Poor ☐ ….. ……..

Appendix III: Interview Schedule

Will be filled by Officers of the County Environment Ministry, GWASCO, NEMA, and Ministry of Lands. In order to finish my project, which is a requirement for my master's degree in project planning and management at the University of Nairobi, I kindly ask for your help in this interview. There is no correct or incorrect response. All replies will remain confidential.

This interview is based on the influence of project planning in solid waste management practices in Kisii County purely for Educational purposes. Kindly indulge me.

Personal Information

1. What is your designation?

……
……

2. How long have you been in the County Government?

……..

Influence of Stakeholders in planning for solid waste management projects.

1. Kindly identify environmental projects that have been undertaken by the county in the last 5 years……..…
……..……
……..

2. From a fore mentioned project mention which project specifically deals with environment protection?……
……
……

3. Were there problems during planning and implementation of the projects? (Specify)? .....……
……
…….

4. Have the projects been successful?

……
…….

5. Are there some not successfully completed? (Specify them and give reasons why they were unsuccessful)

……

……

……

……

6).How were the projects funded?

.....

.....

.....

7. Do the waste management projects sustainable in terms of management and funding?

.....

.....

.....

8. Who is responsible in paying waste management workers?

……

……

……

9. Are there funding related challenges in waste planning and management? (specify)

…….....

……

……

……

10.How does the County Government intend to solve above mentioned challenge?

……

……

……

Influence of resources planning in management of solid waste management projects.

1. Is there adequate and reliable funding for the projects?

……

……

……

Does the county Government get any support from outside in funding and managing the projects?

……

……

……

2. Do you involve stakeholders in planning, managing and executing the projects?

……

……

……

……

3. What support does the public offer in waste management?

……

……

……..

4. How does the County Government council ensure that these projects plans are implemented to the letter? …….

……

……

5. Are there Monitoring and evaluation mechanisms for the projects? Explain

……

……

……
……
.

6. How do you rate the relationship in terms of consultation of your office with the stakeholders and other teams involved in the management of the project? (Put a tick where appropriate) | |

a) Excellent | |

b) Good | |

c) Average | |

d) Poor | |

How do you rate the level of funding for waste management projects?

i) Adequately | |

ii) Inadequately | |

iii) Fair funded | |

7. How do you rate the assistance given by the government to sustain waste management projects?

i) Government is highly supportive--------

ii) Moderately supportive --------

iii) Unsupportive----------

8 In your own view, what do you consider to be the main challenge facing waste management programmes?

……
……

9 What are some of the environmental concerns in Kisii central sub county in waste management?

……
……

10. What is the County Government doing to contain them? .....

……
……

What's is the influence of Environmental education in management of waste management projects.

1. How often do you conduct Environmental Education?

……

……

……

2. What activities do you involve the public in promoting environmental awareness and attitude change?

……

……

……

……

……

3. Do collaborative efforts exist between different departments in promotion of environmental education? If yes which ones?

……

……

……

……

4. Since Environmental Education activities involve publication of flyers posters how often do you prepare them?

.....

.....

5. How can you rate the level of public Environmental education in Kisii central sub County, (tick appropriately and comment)

Rating Comments

A. Good ………………………………………………………………………..

B. Average …………………………………………………………………………

C. Poor ………………………………………………………………………...