MAKERERE UNIVERSITY

FACTORS PRECLUDING KCCA IMPLEMENTATION STRATEGIES ON SOLID WASTE MANAGEMENT IN KAMPALA CENTRAL DIVISION

BY

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DECLARATION

I, **AIJUKA NICHOLAS**, hereby declare that this dissertation titled "***Factors Precluding KCCA Implementation Strategies on Solid Waste Management in Kampala Central Division"*** is my original work and has never been submitted to any institution of higher learning for the award of any academic qualification.

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APPROVAL

This is to certify that this research report entitled *"**Factors Precluding KCCA Implementation Strategies on Solid Waste Management in Kampala Central Division**"* has been under my supervision as the candidate's University supervisor and is ready for submission.

Signature:  Date 03rd November 2026

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Supervisor

DEDICATION

With a thankful heart, I dedicate this dissertation to the almighty God, who granted me good health, strength, knowledge and wisdom to un relentlessly pursue my academic journey amidst the many challenges along the way.

I unreservedly dedicate this piece of work to my dear parents, my dear wife Ms. Atukunda Stedia, my sons Blair and Brett, my siblings Kwesiga, Fortunate, Julian and Lilian for cheering me, praying for me and remaining a constant source of inspiration to carry on all the way despite the tribulations. I'm eternally grateful to them for this support.

Last but not least, I dedicate this work to my friends and classmates, with whom I studied and held discussions throughout the rigorous two years of this programme. This work is a testament to commitment and shows what can be accomplished when many minds come together to tackle an academic challenge. I will forever be grateful.

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LIST OF ACRONYMS

CVI	Content Validity Index
FGDs	Focus Group Discussions
IDIs	In-Depth Interviews
KCCA	Kampala Capital City Authority
MSW	Municipal Solid Waste
SDGs	Sustainable Development Goals
SWM	Solid Waste Management
UGX	Ugandan Shillings
SPSS	Statistical Package for Social Sciences
WHO	World Health Organization

ABSTRACT

This study sought to examine the factors hindering the implementation of Kampala Capital City Authority's (KCCA) solid waste management (SWM) strategies in Kampala Central Division. The purpose of this study was to assess factors associated with the implementation of KCCA solid waste management strategies in Kampala central Division with the view of generating evidence that can improve in solid waste management policy and practice. The study objectives were; to evaluate the effect of staff capacity, to analyze the effect of financial resources and examine the mediating role of stakeholder participation in the implementation of solid waste management strategies in Kampala Central Division. The study adopted a descriptive research design and quantitative approach. The study population comprised of 160 staff engaged in SWM activities at KCCA central division. The questionnaire was used as a tool for data collection from staff, they included; the management personnel and technical officers responsible for planning, supervising, regulating, and coordinating solid waste management activities within Kampala Central Division. The findings show that 60% of the respondents were males while 40% female. The findings established that KCCA's staff capacity was adequate, as 93 percent of respondents confirmed that they had received training in SWM. On the other, it was also established that KCCA had a weak financial resource (80%) to manage solid waste. From the analysis, it was discovered that KCCA has enough staff (mean = 4.09), with the required technical abilities (4.36), and frequently trained (4.56) to carry out SWM activities in the city. However, it was found out that inadequate funding was a major challenge to implementing SWM strategies which recorded the lowest overall mean (1.95) that negatively affect SWM strategy implementation. Furthermore, it was discovered that KCCA collaborates effectively with private waste collection companies and community groups (4.39), with exception found in giving feedback to the stakeholders on SWM services (2.43). Overall, the financial resource was discovered to be a major factor precluding the implementation of SWM strategies in the division. Conclusively, KCCA has the staff and stakeholder support needed to implement SWM strategies, but inadequate financing constrains its capacity to turn these strengths into effective service delivery. Therefore, resources should be adequately allocated in SWM services so as to create a green and clean city. Also, the workers should be provided with adequate instruction, a morale program, additional benefits, incentives and rewards.

CHAPTER ONE: Introduction

1 Background to the Study

Solid waste management (SWM) is one of the most pressing environmental and public health challenges confronting rapidly urbanizing cities globally. This is resulting from the increased population as well as mushrooming industries and other economic activities. As urban populations continue to expand, municipalities are under increasing pressure to develop and implement effective waste management strategies capable of ensuring clean, healthy, and sustainable urban environments. Contemporary debates on the implementation of solid waste management strategies have largely centered on management factors such as staff capacity, financial resources, and stakeholder engagement (Abarca, Maas & Hogland, 2012). While some scholars argue that organizational staff capacity, particularly in terms of technical competence, enforcement, and coordination, remains the primary determinant of successful implementation (Gasco-Hernandez et al., 2022; Nika et al., 2024), others contend that financial limitations and inadequate stakeholder participation are equally critical constraints (Bikadho, 2016). These divergent perspectives suggest that effective implementation of SWM strategies depends on the interaction of multiple management factors rather than a single organizational capability.

Beyond the management debate, the magnitude of the global solid waste problem continues to escalate for example the world generates roughly seven to eight million tonnes of municipal solid waste (MSW) every day (United Nations Environment Programme, 2024). This increased solid waste generation has made solid waste management a major challenge for both developed and developing countries (Nanda & Berruti, 2021; Omer et al., 2026). This is made worse by increased urbanization, industrialization, economic growth, and changing consumption patterns that significantly increases the volume and complexity of municipal solid waste (Dhokhikah & Trihadiningrum, 2012). The World Bank estimates that cities currently generate more than 2.1 billion tonnes of municipal solid waste annually, a figure projected to increase to 3.8 billion tonnes by 2050 if current trends continue (World Bank Group, 2018). Furthermore, global estimates indicate that nearly 3.4 billion tonnes of waste will be generated annually within the next two decades, yet only about 33% will be properly managed, while approximately 67% will be disposed of through uncontrolled dumpsites or poorly managed landfills (Omer et al., 2026).

The increasing waste burden has equally intensified environmental and public health

concerns. Failure to effectively manage municipal solid waste has been associated with unpleasant odors, visual pollution, blocked drainage systems, flooding, contamination of groundwater, environmental degradation, and increased incidence of communicable diseases such as cholera, typhoid, malaria, and diarrhea (Triassi et al., 2015; Nanda & Berruti, 2021; Omer et al., 2026). Studies further indicate that prolonged exposure to poorly managed waste contributes to respiratory illnesses, congenital abnormalities, childhood mortality, and increased cancer risks (Triassi et al., 2015). Consequently, international frameworks, including the Sustainable Development Goals (SDGs), particularly Targets 11.6 and 12.5, emphasize improving municipal waste collection, environmentally sound disposal, and responsible consumption to achieve sustainable cities (United Nations, 2018).

Although these global frameworks provide policy direction, implementation remains considerably more challenging in developing countries, particularly in Sub-Saharan Africa. Municipal waste composition varies with income levels, where high-income communities generate relatively higher proportions of paper, glass, plastics, and metals, while low- and middle-income communities predominantly generate biodegradable organic waste (Nanda & Berruti, 2021). Regardless of waste composition, however, municipal authorities continue to experience persistent challenges in financing, collection, transportation, recycling, and disposal of solid waste.

Uganda reflects many of these broader urbanization challenges. The country is currently urbanizing at approximately 5.1% annually, one of the highest rates in Sub-Saharan Africa (Apio et al., 2024). This rapid urban growth has significantly increased municipal solid waste generation, particularly within Kampala, Uganda's largest commercial and administrative city. Increasing consumption, population growth, commercialization, and changing lifestyles have contributed to rising waste volumes (Kinobe et al., 2015). Kampala currently generates approximately 2,000–2,500 tonnes of solid waste every day, yet only about 40–50% is collected, leaving over 1,200 tonnes uncollected daily (Kiggundu, 2024; Mwesigwa, 2024). This collection rate falls considerably below the World Health Organization's recommended urban waste collection coverage of 80–90%, highlighting significant deficiencies in waste management implementation.

Recognizing these challenges, the Government of Uganda and Kampala Capital City Authority (KCCA) have introduced several policy and institutional interventions aimed at improving solid waste management. These include the National Environment Act (2019), the KCCA Solid Waste Management Ordinance, the KCCA Smart City Strategy (2020–2026),

public-private partnerships in waste collection, community sensitization programs, recycling initiatives, and investments in waste transportation infrastructure. Collectively, these interventions seek to improve waste collection efficiency, transportation, recycling, community participation, and environmentally sound disposal.

Despite these interventions, implementation of solid waste management strategies remains inadequate. Collection efficiency within Kampala remains between 40% and 50%, resulting in continued waste accumulation across markets, road reserves, drainage channels, wetlands, and informal settlements (Kiggundu, 2024; Mwesigwa, 2024). The persistence of illegal dumping, blocked drainage systems, environmental degradation, and disease outbreaks suggests that the challenge extends beyond policy formulation to the effective implementation of existing strategies.

Existing empirical evidence further suggests that implementation challenges are largely organizational in nature. Several studies identify inadequate financial resources, weak institutional capacity, poor stakeholder participation, insufficient enforcement, fragmented coordination, corruption in waste management contracts, and limited operational equipment as major barriers to effective waste management (Jackline, 2020). Similarly, Abarca, Maas and Hogland (2012) found that inadequate staff capacity significantly constrains waste management performance in developing cities, while Nabaasa (2015) demonstrated that active stakeholder participation improves waste collection efficiency and long-term sustainability. Likewise, Mugambe et al. (2022) and Muheirwe et al. (2023) reported that institutional capacity, financial resources, and stakeholder engagement significantly influence waste collection performance within Sub-Saharan Africa.

However, despite these findings, an important knowledge gap remains. Most existing studies have focused on waste generation, collection efficiency, technological innovations, or general institutional challenges, with limited empirical attention to how staff capacity, financial resources, and stakeholder engagement collectively influence the implementation of solid waste management strategies within local governments, particularly in the context of Kampala Capital City Authority (KCCA) Central Division. This study therefore seeks to bridge this gap by examining the effect of these management factors on the implementation of solid waste management strategies.

1.1 Problem Statement

Effective solid waste management (SWM) system ensures that at least 80–90% of urban solid waste is collected daily through efficient waste collection fleets, equitable service coverage, clear regulatory frameworks, and sustainable financing (World Bank Group, 2018). Despite the implementation of various solid waste management strategies, Kampala continues to experience severe waste accumulation. The city generates approximately 2,500 tonnes of solid waste each day; however, the Kampala Capital City Authority (KCCA) collects only about 40–50%, leaving more than 1,000 tonnes uncollected daily (Kinobe et al., 2015). This level of collection is well below the World Health Organization (WHO) recommended threshold of 80–90% collection coverage required to safeguard urban public health. Consequently, uncollected waste accumulates along roadsides, in open spaces, markets, wetlands, and drainage channels, leading to widespread illegal dumping sites across Kampala's five city divisions (Maderu & Omona, 2021). To address this challenge, several interventions have been introduced, including public-private partnerships, community sensitization campaigns, enforcement of the KCCA Solid Waste Ordinance, and implementation of the Smart City Strategy. However, the implementation of these initiatives has remained inadequate. Evidence indicates that the effective enforcement of SWM regulations by government institutions depends largely on the availability of financial resources, stakeholder engagement, and staff capacity (Godfrey et al., 2020). Inadequate performance in these management areas has contributed to the persistent solid waste management problem, resulting in blocked drainage channels, environmental degradation, and increased public health risks, including outbreaks of cholera, typhoid, diarrheal, and malaria (Ssemugabo et al., 2020). This study therefore, seeks to assess the effects of staff capacity, financial resources, and stakeholder engagement on the implementation of solid waste management strategies in KCCA Central Division, with the aim of generating evidence-based recommendations to strengthen the implementation of solid waste management strategies in Kampala.

1.2 Purpose of the Study

The purpose of this study was to assess the factors associated with the implementation of Kampala Capital City Authority (KCCA) solid waste management strategies in Kampala Central Division with a view to generating evidence that can inform improvements in solid waste management policy and practice.

1.3 Objectives of the Study

i. To evaluate the effect of staff capacity on the implementation of solid waste management strategies in Kampala central division.
ii. To analyze how financial resources affect the implementation of solid waste management strategies in Kampala central division.
iii. To examine the mediating role of stakeholder participation in the relationship between staff capacity, financial resources, and the implementation of solid waste management strategies in Kampala central division.

1.4 Research Questions

i. What is the effect of staff capacity on the implementation of solid waste management strategies in Kampala central division?
ii. How do financial resources influence the implementation of solid waste management strategies in Kampala central division?
iii. How does stakeholder participation mediate the relationship between staff capacity, financial resources, and the implementation of solid waste management strategies in Kampala Central division?

1.5 Scope of the study

Geographically, the study was conducted in Kampala Central Division, Uganda to explore the effect of staff capacity, financial resources and stakeholder engagement on the implementation of the SWM strategies.

1.5.1 Content Scope

The study explored the effect of staff capacity, financial resources and stakeholder engagement on the implementation of the SWM strategy. The study also assesses what has already been implemented, what gaps remain, and which interventions are required to strengthen effective delivery of solid waste services. Overall, the independent variable in the study consisted of staff capacity, financial resources and stakeholder engagement while the dependent variable was implementation of the SWM strategies.

1.5.2 Geographical Scope

Geographically, the study was conducted in Kampala Central Division, one of the five administrative divisions under Kampala Capital City Authority (KCCA), Uganda. The division was selected because it is the administrative and commercial hub of the city,

characterized by high population density, intense economic activity, and significant daily waste generation from markets, offices, transport terminals, and informal settlements. Kampala Central Division was selected because it presents unique solid waste management challenges, including frequent waste accumulation, limited space for disposal, high levels of commercial waste, and pressure on existing waste collection and transportation systems.

1.5.3 Time Scope

The study covered the period from 2010 to date, a timeframe characterized by major reforms in Kampala's waste management sector. This included the introduction of the KCCA Ordinance, expansion of private waste collection partnerships, and implementation of the Smart City Strategy. Studying this period allows for an assessment of policy effectiveness over time and provides insight into how institutional changes and urban growth have influenced the performance of the SWM strategy.

1.6 Significance of the Study

The study generated quantitative data on the precluding factors that impeded SWM implementation strategies in Kampala central division with the view to equip policymakers, environmental health practitioners, scholars, researchers and community at large.

1.6.1 To Policymakers and Government Agencies

The findings of the study will equip policymakers with evidence-based insights necessary to strengthen waste management governance within KCCA and other urban authorities. By identifying gaps in implementation ranging from weak enforcement and inadequate funding to limited staff capacity, the findings will guide improvements in planning, budgeting, resource allocation, and monitoring systems. The study also enables government agencies to design more realistic reforms and adopt targeted interventions that address the root causes of waste accumulation, ultimately supporting improved urban service delivery.

1.6.2 To Environmental Health Practitioners

Environmental health professionals will benefit from detailed evidence connecting waste management practices to health outcomes in Kampala. The findings will help practitioners design preventive interventions that reduce risks of cholera, typhoid, vector infestations, and other environmental health hazards. Understanding where breakdowns in the waste management chain occur, health practitioners can collaborate with KCCA to promote safer waste-handling practices, community sensitization programs, and health-based risk

assessments that inform public health policies.

1.6.3 To Scholars and Researchers

For scholars, the study provides critical insights into the complexities of solid waste management in low-income urban contexts. It contributes to the existing body of knowledge by documenting empirical evidence on institutional, financial, technical, and community barriers affecting SWM implementation. The study also offers a foundation for comparative research across cities in developing countries and serves as a reference for future studies on urban governance, environmental sustainability, and public administration.

1.6.4 To the Community

Residents of Kampala stand to benefit from improved waste management outcomes informed by the study. Cleaner neighborhoods, reduced flooding caused by clogged drainage channels, and fewer disease outbreaks will enhance overall public health and quality of life. The study also promotes community participation by highlighting the role of household practices and citizen engagement in improving waste management. Ultimately, better implementation of SWM strategies will create safer, more livable, and more sustainable urban environments for all city dwellers.

1.7 Justification of the Study

Kampala is increasingly overwhelmed by rising waste volumes, yet only 40% of generated waste is collected daily, exposing the city to severe environmental and public health risks (Kinobe et al., 2015). Without understanding management factors associated with implementation of solid waste management strategies, local authorities cannot implement effective reforms. This study is therefore justified as it seeks to identify the effect of financial resources, staff capacity and stakeholder engagement on implementation of solid waste management strategies. If this study is not conducted, the waste collection gap will likely persist or worsen, resulting in increased illegal dumping, flooding, pollution, disease outbreaks, and general urban decline. Policymakers would lack evidence to guide reforms, public health risks would continue unabated, and academic knowledge on urban waste governance in low-income cities would remain limited. The study's findings will therefore provide crucial insights for evidence-based policy, improved service delivery, and sustainable urban development in Kampala.

CHAPTER TWO: Literature Review

2 Introduction

This chapter presents a review of related literature in line with the study objectives. The review draws on the perspectives and findings of various scholars and researchers, as documented in books, academic journals, reports, and credible internet sources. The main purpose of this chapter is to examine existing knowledge, identify gaps in the available literature, and establish how the current study seeks to address these gaps.

2.1 Staff capacity and implementation of solid waste management strategies

Staff capacity has consistently been identified as a critical factor influencing the implementation of solid waste management (SWM) strategies (Rahmi et al., 2025). Existing literature demonstrates broad agreement that organizations with skilled and adequately trained staff are more likely to implement effective waste management strategies, although scholars differ regarding the specific dimensions of staff capacity that matter most.

Okot-okumu (2021) contend that inadequate technical and managerial staff significantly constrain the implementation of municipal solid waste management in Uganda. Their study found that shortages of qualified personnel weakened planning, supervision, waste collection, and enforcement of environmental regulations under the decentralized local government system. Building on this institutional perspective, (Andino-gonzález et al., 2025) examined staff capacity as an independent construct measured through professional qualifications, multidisciplinary expertise, and managerial competence. Their findings showed that municipalities with technically competent personnel implemented national solid waste management policies more effectively than those with limited human resource capacity.

While (Okot-okumu, 2021) emphasize professional qualifications and managerial competence, (Mccowan, 2023) broadens the discussion by arguing that qualifications alone are insufficient without continuous professional development and practical experience. The study established that municipalities employing trained environmental officers and waste management specialists achieved better implementation of waste management programs. This perspective extends the understanding of staff capacity beyond formal education but does not statistically demonstrate how these competencies directly influence the implementation of waste management strategies. Supporting these findings within the Ugandan context, (Ongia,

2021) reported that inadequate technical skills, understaffing, weak supervision, and limited staff training constrained the implementation of solid waste management policies in Kampala Capital City Authority. The study therefore shifts attention from staff qualifications alone to the importance of supervision and continuous capacity building. However, it provides descriptive evidence of implementation challenges without empirically measuring the magnitude of the relationship between staff capacity and implementation outcomes.

Sharma et al. (2022) established through a systematic review that staff capacity, reflected in technical skills, professional training, and managerial competence, is essential for effective implementation of solid waste management strategies. The study found that municipalities with competent personnel achieved better waste collection, recycling, and environmental compliance. However, the study synthesizes evidence from different countries and does not provide primary empirical evidence on the direct effect of staff capacity on implementation. Supporting sharmas' evidence, (Oroye, 2020) found that inadequate technical personnel and limited staff training constrained the implementation of municipal solid waste management programs in selected Nigerian municipalities. Their findings agree with Sharma et al. (2022) that competent staff improve implementation.

2.2 Financial resources and implementation of solid waste management strategies

Financial resources are widely recognized as a critical determinant of effective implementation of solid waste management (SWM) strategies because they enable local governments to acquire equipment, maintain infrastructure, support waste collection operations, and sustain service delivery (Lohri et al., 2014). From a global perspective, (Maalouf & Agamuthu, 2023) argue that inadequate financing remains one of the major barriers affecting solid waste management systems, particularly in developing countries. Their study found that municipalities with adequate financial resources were better able to invest in waste collection facilities, treatment technologies, and environmentally sustainable disposal systems. However, the study provides a global overview and does not empirically establish the direct influence of financial resources on implementation outcomes at the local government level. Building on this perspective, (Abubakar et al., 2022) examined challenges affecting sustainable solid waste management in developing countries and found that limited financial capacity constrained infrastructure development, waste collection coverage, and adoption of modern waste management technologies.

From an African perspective, (Kosoe et al., 2025) found that inadequate financial allocations

significantly affected waste collection frequency, transportation capacity, and disposal services in Ghanaian municipalities. Their findings support (Musakabantu et al., 2026) by demonstrating that reliable financing is necessary for sustainable waste management systems; however, the study focuses on Ghana, where municipal financing arrangements differ from those of many Ugandan local governments. Similarly, (Fernando & Zutshi, 2023) established that limited financial capacity among African municipalities affected investment in waste management infrastructure, staff remuneration, and maintenance of disposal facilities. Although the study provides evidence across several African countries, it does not quantify the relationship between financial resources and implementation performance.

In Uganda, (Kugonza, 2020) found that inadequate funding constrained waste collection, enforcement of regulations, and general municipal waste management operations in Mbarara Municipality. The study reinforces international and regional evidence that financial availability influences waste management effectiveness, but it examines financing alongside governance and accountability challenges rather than isolating financial resources as an independent factor. Similarly, (Buntaine et al., 2021) reported that effective waste management interventions in Kampala required sufficient institutional resources to support supervision, information management, and operational activities. However, their study focused mainly on citizen participation and service delivery improvement rather than directly examining financial resources. Further, (A. Robert & Robert, 2025) found that financial limitations affected waste collection facilities, equipment availability, and enforcement of waste management practices in Arua Municipality. Unlike earlier studies that considered financing broadly (Ebong et al., 2018), the study demonstrates the practical effects of inadequate funding on municipal waste operations; however, it does not examine specific financial resource dimensions such as budget adequacy, resource allocation, and expenditure efficiency.

The reviewed literature demonstrates that financial resources influence the implementation of solid waste management strategies through enabling infrastructure investment, equipment acquisition, operational continuity, and regulatory enforcement. Nevertheless, most existing studies examine financing as part of broader institutional challenges, with limited empirical evidence on its independent effect on implementation outcomes (Buntaine et al., 2021; Kugonza, 2020; Musakabantu et al., 2026). This study therefore seeks to address this gap by examining the influence of financial resources on the implementation of solid waste management strategies within the selected local government context.

2.3 Mediating role of stakeholder participation in the relationship between staff capacity, financial resources, and the implementation solid waste management

Stakeholder participation has increasingly been recognized as an important mechanism through which organizational resources such as staff capacity and financial resources influence the implementation of solid waste management (SWM) strategies. Globally, (Mukaromah, 2025) argue that sustainable solid waste management requires collaboration among governments, communities, private operators, and other stakeholders because technical and financial resources alone are insufficient without collective involvement. His study established that stakeholder cooperation improves planning, resource utilization, accountability, and acceptance of waste management initiatives. However, the study examines stakeholder participation as a general requirement for integrated waste management and does not specifically test its mediating effect between organizational resources and implementation outcomes.

Extending this global perspective, (Ahsan et al., 2014) found that stakeholder engagement significantly influences the success of municipal solid waste management by improving coordination between government authorities, service providers, and communities. The study demonstrated that stakeholder participation facilitates knowledge sharing, behavioral change, and effective monitoring of waste management programs. However, while the study confirms the importance of participation, it does not explain how stakeholder involvement transforms staff capacity and financial resources into improved implementation performance.

From a sub-Saharan perspective, (Richard, 2023) observed that stakeholder collaboration is essential for overcoming institutional weaknesses affecting solid waste management in developing countries. The study found that community involvement, partnerships with private actors, and participatory decision-making improve waste collection and sustainability outcomes. However, the study focuses mainly on stakeholder collaboration as a direct factor influencing waste management rather than examining its mediating role between internal organizational resources and implementation.

In the Ugandan context, (Gloria, 2026) found that community participation in planning, implementation, and monitoring positively influenced solid waste management performance in Nakawa Division, Kampala. The study demonstrated that involving communities improves compliance, waste collection practices, and accountability among service providers. However, it mainly examines community participation as an independent variable and does

not establish whether participation strengthens the effect of institutional resources such as staff capacity and financial resources on implementation.

Similarly, (Buntaine et al., 2021) examined citizen participation in improving solid waste services in Kampala through citizen reporting mechanisms. The study found that participation provides valuable information for improving service delivery but also showed that stakeholder inputs require adequate institutional capacity to be effectively utilized. This finding links stakeholder participation with organizational capacity but does not quantitatively examine its mediating influence between resources and waste management outcomes.

Further, (George, 2025) examined factors influencing public e-participation in municipal solid waste management in Uganda's Kampala Metropolitan Area. The study found that information exchange and stakeholder involvement are important for improving waste governance and decision-making. However, the study focused on technology-enabled participation rather than how stakeholder engagement mediates the relationship between financial resources, staff capacity, and implementation effectiveness.

The existing literature demonstrates that stakeholder participation enhances implementation of solid waste management strategies by improving communication, accountability, knowledge sharing, and ownership of waste management initiatives (Brajer-Marczak & Marciszewska, 2021; Daigneault et al., 2022; George, 2025; Hermans et al., 2021). However, most studies treat stakeholder participation as either a direct determinant of implementation or a governance mechanism, with limited attention to its mediating role (Deverka et al., 2025; Hermans et al., 2021; Kujala et al., 2022). Furthermore, few studies examine how stakeholder participation converts internal organizational resources, particularly staff capacity and financial resources, into improved implementation outcomes (Okoth & Villacampa, 2021). This creates a conceptual and empirical gap that the current study addresses by examining the mediating role of stakeholder participation in the relationship between staff capacity, financial resources, and implementation of solid waste management strategies.

2.4 Gaps in the Literature

The reviewed literature shows that staff capacity, financial resources and stakeholder participation each matter for the implementation of solid waste management (SWM) strategies. It also reveals conceptual, methodological, contextual and empirical gaps that this study addresses.

From the literature, it was discovered that most studies treat staff capacity, financial resources and stakeholder participation as separate, direct determinants of SWM performance (Okot-Okumu, 2021; Kugonza, 2020; Gloria, 2026). Financing is often examined alongside governance and accountability challenges rather than as an independent factor (Kugonza, 2020; Buntaine et al., 2021). Stakeholder participation is treated as a direct factor or a general governance mechanism, with little attention to its mediating role (Mukaromah, 2025; Richard, 2023). No integrated framework explains how internal organizational resources are converted into implementation outcomes through stakeholder participation. Furthermore, majority of the studies comes from global reviews, other African countries (Ghana, Nigeria) or single localities in Uganda such as Mbarara, Arua and Nakawa Division. Kosoe et al. (2025) themselves note that Ghanaian municipal financing arrangements differ from those in Uganda. Studies within Uganda often focus on citizen reporting or e-participation (Buntaine et al., 2021; George, 2025) and not on the institutional resources of local governments.

2.5 Conclusion

This chapter reviewed literature on staff capacity, financial resources, and the mediating role of stakeholder participation in the implementation of SWM strategies. The evidence shows that competent staff and adequate financing are necessary for effective implementation, and that stakeholder participation improves coordination, accountability and community ownership. However, most studies examine these variables separately, rely on descriptive or quantitative evidence, focus on other contexts, and do not test mediating relationships. Stakeholder participation is rarely analyzed as the mechanism through which staff capacity and financial resources translate into implementation outcomes. The next chapter presents the research methodology used to achieve the study objectives.

CHAPTER THREE: Methodology

Introduction

This chapter describes the research methods that will be used to achieve the study objectives. It presents the research design, research approach, study area and population, sample size and sampling techniques, data collection methods and instruments, validity and reliability of instruments, data analysis procedures, and ethical considerations. These are further explained in detail as follows;

2.6 Research Design

A research design refers to a systematic plan used to collect information from members of a population in order to determine the current status of one or more variables (Udessa et al., 2026). The study used a descriptive research design with a quantitative approach. It aimed to determine the causal influence of staff capacity and financial resources on the implementation of solid waste management strategies, and to examine the mediating role of stakeholder participation in this relationship. The study was conducted at a single point in time (cross-sectional), using a quantitative approach within Kampala Central Division (Lama-valdivia & López, 2021).

2.7 Research Approach

A quantitative research approach was used and it employed questionnaires to collect from the management personnel and technical officers responsible for planning, supervising, regulating, and coordinating solid waste management activities within Kampala Central Division. Quantitative techniques were chosen to provide detailed explanations regarding institutional practices, operational challenges, and policy implementation experiences (Lama-Valdivia & López, 2021).

The unit of analysis for this study was the KCCA Central Division in directorate of public health, department of SWM. where conclusions were drawn about how institutional unit performs in implementing solid waste management strategies. The unit of inquiry included respondents from SWM department. These were selected because they are directly involved in SWM.

2.8 Description of Study Area

The study was conducted in Kampala Central Division, one of the five divisions under Kampala Capital City Authority (KCCA). The division was selected because it is located at the heart of Uganda's capital, it is the country's main commercial, administrative, and business hub, hosting markets, industries, institutions, and government offices. These activities generate large volumes of municipal solid waste, placing significant pressure on KCCA's waste management system. Despite implementing waste collection, transportation, and public awareness strategies, the division continues to face challenges including inadequate funding, limited staff capacity, poor stakeholder participation, and illegal dumping. The division was selected because it provided an ideal setting for examining factors precluding KCCA's implementation of solid waste management strategies.

2.9 Study Population

Population refers to the entire group of individuals, organizations, events, or objects possessing characteristics relevant to a particular study (Willie, 2024). The target population comprised of KCCA employees in the departments of planning, financing, supervision, monitoring, regulating, and solid waste management. These were considered because of their lived experience in the variables under study. These respondents were expected to possess adequate knowledge regarding staff capacity, financial resource allocation, stakeholder participation, and implementation of solid waste management strategies.

The study population comprised of 1,215 individuals involved in solid waste management activities within Kampala Central Division. These statistics were obtained from KCCA's administrative and human resource records.

2.10 Sample Size Determination and Selection

2.10.1 Quantitative Sample Size

The quantitative sample size consisted of technical, management and operational staff engaged in solid waste management activities within Kampala Central Division, who completed the self-administered questionnaire and key informant interviews. Given the large size of the operational staff population, Cochran's (1977) formula for sample size determination were used to calculate an appropriate sample;

$$n_0 = \frac{Z^2 \times p(1-p)}{e^2}$$

Where n_0 is the required sample size, Z is the Z-score associated with a 95% confidence level (1.96), p is the estimated population proportion (set at 0.5 to maximize variance and yield a conservative estimate), and e is the acceptable margin of error, set at 7.5% given the practical constraints of time and resources associated with this study. Furthermore, the population of operational staff (N = 1,205) is finite and relatively large, the finite population correction applied to adjust the initial estimate as shown below;

$$n = \frac{n_0}{1 + \frac{n_0 - 1}{N}}$$

This yielded a sample size of 150 operational staff.

The number of interviews conducted were guided by the principle of data saturation, the point at which additional interviews no longer yielded new themes or insights relevant to the study objectives (Saunders et al., 2018). All 10 heads of staff were approached, and interviewing continued until saturation was confirmed, providing an evidence-based rather than arbitrary basis for the final number of interviews conducted.

Table 1: Sample Size Determination

Category of Population	Population Size	Sample Size	Sampling Technique
Senior Management Officials	10	10	Purposive Sampling
Operational Staff	1205	150	Simple Random Sampling
Total	1215	160	

Source: Adapted from KCCA Human Resource Records (2025).

2.11 Sampling Techniques and Procedure

2.11.1 Probability Sampling

Probability sampling refers to a sampling technique in which every member of the target population has a known and equal probability of being selected to participate in the study (Makwana Dhaval et al., 2023). In this study, simple random sampling was employed to select operational staff involved in the implementation of solid waste management strategies within Kampala Central Division.

Simple random sampling was considered appropriate because operational staff constituted the

largest category of respondents and perform diverse responsibilities relating to waste collection, transportation, monitoring, inspection, enforcement, and sanitation activities. Using this technique ensured that every eligible employee had an equal chance of being selected, thereby minimizing selection bias and improving the representativeness of the sample (Noor & Tajik, 2022).

The sampling strategy involved obtaining a list of the 150 operational staff engaged in solid waste management activities from the Human Resource Office of Kampala Capital City Authority. Each eligible staff member was assigned a unique identification number and entered into a spreadsheet alongside their name. Using Microsoft Excel's random number generator function (RAND), a random number was generated for each staff member, and the list will then be sorted in ascending order based on these random numbers. The first 150 staff members in the resulting randomized order were constituted the sample for this category. This procedure ensured a transparent, replicable, and unbiased selection process, giving every operational staff member an equal and independent chance of being included in the study.

2.11.2 Non-Probability Sampling

The study employed non-probability sampling in the form of purposive sampling. Purposive sampling refers to a technique whereby respondents are deliberately selected based on their knowledge, experience, responsibilities, or ability to provide relevant information concerning the study variables (Campbell et al., 2020).

Purposive sampling is considered as it enables researchers to obtain information from respondents who possess specialized knowledge that may not be available from the general study population (Campbell et al., 2020). In this study, purposive sampling was used to interview senior management officials, environmental and public health managers because of their responsibilities in planning, budgeting, supervising, coordinating, monitoring, and enforcing solid waste management programs within Kampala Central Division.

These officials possessed extensive experience regarding staff deployment, allocation of financial resources, stakeholder engagement, policy implementation, environmental regulation, monitoring systems, and institutional challenges affecting the implementation of solid waste management strategies. Their participation provided rich quantitative information that complemented the quantitative findings obtained from operational staff, thereby enhancing triangulation and improving the overall credibility of the study.

2.12 Method of data collection

A survey is a systematic way of collecting data from a defined group of respondents, usually through a structured questionnaire, so that their views, experiences, and characteristics can be measured and analysed numerically (Sharma et al., 2023). Surveys allow data to be gathered from many respondents within a short time and at a relatively low cost.

In this study, a survey was used to collect quantitative data on the factors affecting the implementation of SWM strategies in Kampala Central Division. A structured questionnaire was administered to 160 respondents that belong to KCCA staff. Most items were closed-ended statements rated on a five-point Likert scale, from 5 (strongly agree) to 1 (strongly disagree). This format made it possible to measure perceptions of staff capacity, financial resources, stakeholder participation, and implementation of SWM strategies, and to summarise them using weighted means and percentages

2.13 Tools of Data Collection

Data collection tools refer to instruments used by a researcher to obtain information required to answer the research questions and achieve the study objectives (Taherdoost, 2021). Quantitative data was collected using questionnaire surveys to obtain comprehensive information on staff capacity, financial resources, stakeholder participation, and the implementation of solid waste management strategies in Kampala Central Division.

2.13.1 Questionnaire Survey

The questionnaire survey was primary tool of collecting quantitative data from operational staff involved in the implementation of solid waste management strategies within Kampala Central Division. The questionnaire was appropriate because the variables under investigation, including staff capacity, financial resources, stakeholder participation, and implementation of solid waste management strategies, couldn’t be directly observed but were measured through respondents' perceptions, opinions, attitudes, and experiences.

The questionnaire technique was adopted because it enabled the collection of large amounts of standardized information from many respondents within a relatively short period and at a lower cost (Campbell et al., 2020).

The questionnaires were administered using the drop-and-pick method. The researcher, assisted by trained research assistants, delivered the questionnaires to the selected operational

staff during working hours after obtaining permission from KCCA management. Respondents will be given sufficient time, approximately two working days, to complete the questionnaires before they are collected. This approach was expected to improve the response rate while allowing respondents adequate time to provide thoughtful and accurate responses.

2.14 Quality Control

Quality control refers to procedures undertaken to ensure that research instruments produce valid, reliable, credible, and dependable findings. Quantitative quality assurance measures were established before and during data collection.

2.14.1 Validity and Reliability of the Study Instruments

Validity refers to the extent to which a research instrument measures what it is intended to measure while reliability refers to the consistency and stability of research instruments in measuring study variables. To establish validity, the questionnaires were submitted to public health and students from civil and environmental engineering for evaluation at Makerere University. To ensure validity and reliability, the questionnaire was pilot tested to 10 employees of KMA. This helped the researcher to correct any ambiguity. Notwithstanding, some challenges faced during the research, it did not in any way affected the reliability, validity, credibility, and accuracy of the result.

Transferability was promoted through detailed descriptions of the study setting, respondent characteristics, research procedures, and implementation context so that future researchers can determine the applicability of the findings to similar urban local government settings. Dependability was ensured by maintaining detailed documentation of the research process, including interview procedures, field notes, coding decisions, and data analysis processes. The researcher ensured that findings derived directly from participants' views rather than personal opinions or preconceived assumptions.

2.15 Measurement of Variables

The variables of this study were measured using an interval scale based on a five-point Likert scale. According to (Joshi et al., 2015), the Likert scale enabled respondents to indicate the extent to which they agree or disagree with statements relating to the study variables. This scale was appropriate because it facilitated quantitative measurement of perceptions, attitudes, and opinions, which can subsequently be analyzed statistically.

The independent variable, staff capacity, was measured using indicators such as employee

competence, technical skills, training, staffing adequacy, supervision, and experience in solid waste management activities. Financial resources were measured using indicators including budget adequacy, timely release of funds, availability of operational resources, financing of waste management activities, and maintenance of equipment. The mediating variable, stakeholder participation, was also measured through stakeholder involvement in planning, community participation, and partnerships with private waste collectors, public awareness and sensitization, consultation mechanisms, and collaboration with development partners.

The dependent variable, implementation of solid waste management strategies was measured using indicators including waste collection coverage, frequency of waste collection, efficiency of waste transportation and disposal, compliance with waste management regulations, effectiveness of monitoring and enforcement, and overall implementation of waste management policies within Kampala Central Division. Each statement was rated using the following scale as shown in Table 2:

Table 2: The scores assigned to the response

Response Category	Score
Strongly Agree (SA)	5
Agree (A)	4
Neither Agree nor Disagree (N)	3
Disagree (D)	2
Strongly Disagree (SD)	1

2.16 Data Analysis

The quantitative data from respondents was analysed using descriptive statistics, specifically weighted means and percentages, which are presented in tables. For each statement, the weighted mean was calculated by multiplying every Likert score by the number of respondents who selected it, summing these products, and dividing the total by the sample size (n = 160). The weighted means were then combined with the quantitative findings to give a fuller picture of the factors influencing the implementation of solid waste management

strategies in Kampala Central Division.

2.17 Ethical Considerations

Participation in the study was entirely voluntary. Each respondent received adequate information regarding the purpose, objectives, procedures, potential benefits, and possible risks associated with the study before being requested to participate.

Written informed consent was obtained from all respondents prior to administering questionnaires or conducting interviews. Participants were informed of their right to decline participation or withdraw from the study at any stage without suffering any negative consequences.

Confidentiality and anonymity were maintained throughout the research process. Respondents' names did not appear on questionnaires, interview transcripts, or research reports for those who did not want. Instead, unique identification codes will be assigned to participants to protect their identities. All information collected were treated with strict confidentiality and will only be used for academic purposes.

Completed questionnaires, interview notes, consent forms, and electronic files will be stored in locked cabinets and password-protected computers accessible only to the researcher. Upon completion of the study and expiry of the required retention period, all research records were securely destroyed in accordance with institutional ethical guidelines. The research study upheld honesty and academic integrity by ensuring that all findings are reported accurately without fabrication, falsification, or misrepresentation.

All sources of information were appropriately acknowledged using the prescribed referencing style to avoid plagiarism. Finally, the researcher conducted the study with professionalism, respect, impartiality, and fairness to ensure that the findings accurately reflect the views and experiences of the respondents.

CHAPTER FOUR: Results

4 Introduction

This section presents the empirical findings of the study, focusing on solid waste management practices and factors precluding KCCA implementation strategies of solid waste management in Kampala central division. The analysis is based on quantitative data generated from surveys, key informant interviews, and field observations. Graphical figures and tables are used to summarize the results and findings.

4.1. Demographic Characteristics of Sample Respondents

Table 3 presents the demographic characteristics of respondents in Kampala central division Administration. A total of 160 respondents were surveyed for this study. All socio-demographic variables and their corresponding frequencies and percentages are presented in the table. These characteristics provide important background information on the respondents and serve as a basis for interpreting variations in solid waste management practices and perceptions across different demographic groups.

In terms of gender, the sample comprised 60 percent males and 40 percent females **(Table 3).** Men therefore made up the majority of respondents, which suggests that solid waste management (SWM) work and decision-making in Kampala Central Division are male-dominated. Women were still well represented, with 64 of the 160 respondents.

The respondents were mostly young adults. More than half (55 percent) were aged 25 to 34 years, followed by 25 percent aged 35 to 44 years. Only eight percent were below 25 years, eight percent were aged 45 to 54 years, and five percent were 55 years and above. Overall, 88 percent of respondents were below 45 years. This indicates a relatively young, economically active group that is well placed to take part in the implementation of SWM strategies.

Table 3: Socio demographic characteristics of respondents

Variables	Frequency	Percentage
Sex		
Male	96	60
Female	64	40
Total	160	100
Age		
Below 25 years	12	8
25 - 34 years	88	55
35 - 44 years	40	25
45 - 54 years	12	8
Above 55 years	8	5
Total	160	100
Position/Occupation		
KCCA staff	119	74
Private waste management worker	11	7
Business operator/trader	17	11
Residents/Community member	13	8
Total	160	100
Department of SWM		
Waste collection	48	30
Waste transportation	32	20
Waste disposal	39	24
Environmental health/sanitation	31	19
Administration/management	10	6
Total	160	100
Experience in SWM activities		
Less than 1 year	12	8
1 - 5 years	17	11
6 - 10 years	48	30
Above 10 years	83	52
Total	160	100
Monthly Income level		
Below UGX 500,000	71	44
UGX 500,000 - 1,000,000	40	25
UGX 1,000,000 - 2,000,000	21	13
Above UGX 2,000,000	28	18
Total	160	100
Training in SWM		
Yes	148	93
No	12	8
Total	160	100

Regarding position or occupation, the majority of respondents (74 percent) were Kampala Capital City Authority (KCCA) staff. Business operators or traders accounted for 11 percent, residents or community members for eight percent, and private waste management workers for seven percent. This composition shows that the study drew mainly on the views of officials directly responsible for implementing SWM strategies, complemented by those of the private sector and service users.

The respondents were also spread across the main departments of SWM. Waste collection had the largest share (30 percent), followed by waste disposal (24 percent), waste transportation (20 percent), and environmental health and sanitation (19 percent). Administration and management had the smallest share (six percent). This distribution means that the study captured perspectives from across the SWM value chain, from collection through transportation to final disposal, as well as from the supervisory and regulatory functions.

Respondents were highly experienced in SWM activities. More than half (52 percent) had worked in the field for over ten years, and 30 percent had six to ten years of experience. Only 11 percent had one to five years of experience, and eight percent had less than one year. Thus, 82 percent of respondents had more than five years of experience, which strengthens the reliability of the information they gave about the factors affecting SWM implementation.

In terms of monthly income, 44 percent of respondents earned below UGX 500,000, and a further 25 percent earned between UGX 500,000 and 1,000,000. Thirteen percent earned between UGX 1,000,000 and 2,000,000, and only 18 percent earned above UGX 2,000,000. Hence, about 69 percent of respondents earned below UGX 1,000,000 per month. This reflects the modest earnings of many people working in SWM and may have implications for motivation, retention, and the resources available for effective service delivery.

Finally, the majority of respondents (93 percent) had received training in SWM, while only eight percent had not. The high level of training suggests that there are sufficient knowledge and skills among respondents for implementing SWM strategies. This points instead to other factors, such as funding, equipment, infrastructure, and public attitudes, which the subsequent sections examine.

4.2. Factors precluding KCCA implementation strategies of SWM in Kampala Central Division

The study sought to establish the factors precluding KCCA implementation strategies of SWM in Kampala central division. Respondents answered 32 questions divided into four categories that is; Staff capacity, financial resources, stakeholder participation, and the implementation of the strategies by KCCA. Each category included eight statements. Each statement was scored by respondents using a five-point Likert scale that went from strongly agree to strongly disagree.

Table 4: Frequency results of staff factors affecting waste management survey, N= 160

Variables	5	4	3	2	1	Wt. Mean
Staff Capacity Factors						
KCCA has adequate numbers of staff to effectively implement SWM strategies.	77	21	62	0	0	4.09
KCCA staff involved in SWM possess the necessary technical skills and competencies.	98	33	17	12	0	4.36
KCCA provides regular training and development opportunities for solid waste management staff	106	41	10	3	0	4.56
Staff members have adequate knowledge of solid waste management and regulations.	21	88	40	9	2	3.73
KCCA staff have sufficient experience to manage SW collection and disposal activities effectively.	14	72	60	8	6	3.50
There are effective supervision and monitoring of staff involved in SWM activities.	3	13	121	23	0	2.98
Staff motivation influences the effective implementation of SWM strategies.	0	0	143	16	1	2.89
KCCA has competent managers who coordinate solid waste management Operations.	0	0	121	38	1	2.75
Average	39.88	33.50	71.75	13.63	1.25	3.61

(Source: Author's Fieldwork 2026).

4.2.1. Staff Factors

The total mean for staff capacity was 3.61, which is higher than 3.00 as shown in Table 4. This implies that Kampala Central Division's implementation of SWM techniques is not significantly hampered by personnel capabilities. The majority of respondents concurred that KCCA has enough employees (mean = 4.09), that employees possess the required technical abilities (4.36), and that frequent training is given (4.56). In line with the finding that 93% of respondents have received SWM training, 92% of respondents agreed or strongly agreed that training opportunities exist. Positive ratings were also given to experience (3.50) and regulatory knowledge (3.73).

However, the means for staff motivation (2.89), competent managers directing activities (2.75), and supervision and monitoring (2.98) were at or below 3.00. The majority of respondents (121 to 143 out of 160) were neutral in each instance. This suggests that despite having a large number of skilled and experienced employees, managerial coordination, motivation, and supervision are still lacking. These could be more significant than technical ability.

Table 5: Frequency results of financial factors affecting waste management survey, N= 160

Variables	5	4	3	2	1	Wt. Mean
Financial Resources Factors						
KCCA allocates adequate financial resources for implementing SWM strategies.	5	12	15	40	88	1.79
Funds for solid waste management activities are released in a timely manner.	0	0	0	44	116	1.28
KCCA has sufficient funds to waste collection and transportation activities.	0	0	0	63	97	1.39
Financial resources are adequate for maintaining waste management and infrastructure.	0	0	29	54	77	1.70
KCCA has funding for waste management monitoring and enforcement activities.	0	0	0	76	84	1.48
Available financial resources are efficiently to achieve solid waste management objectives.	0	0	0	105	55	1.66
KCCA has adequate resources to support public awareness and sensitization programs on waste management.	0	0	0	74	86	1.46
Limited financial resources negatively affect the implementation of SWM strategies.	142	18	0	0	0	4.89
Average	18.38	3.75	5.50	57.00	75.38	1.95

(Source: Author's Fieldwork 2026).

4.2.2. Financial factors

Financial resources recorded the lowest overall mean (1.95), indicating that inadequate funding is a major challenge to implementing SWM strategies. Seven of the eight items had means between 1.28 and 1.79 (Table 5). For example, no respondent agreed that funds are released on time (1.28) or that KCCA has enough funds for collection and transportation (1.39). All respondents also disagreed that there is funding for monitoring and enforcement (1.48), that resources are used efficiently (1.66), and that there is funding for public awareness (1.46). In addition, 80% of respondents (mean = 1.79) disagree that financial resources are adequate for maintaining infrastructure (82%; mean = 1.71).

The only item with a high mean (4.89) was the statement that limited financial resources negatively affect implementation. All 160 respondents agreed with it, and 89 percent strongly agreed. This is the negatively worded item, so a high mean here also signals a problem. Excluding it, the mean of the other seven items is 1.54. Both calculations show that finance is the most serious constraint.

Table 6: Frequency results of stakeholder participation factors affecting waste management survey, N= 160

Variables	5	4	3	2	1	Wt. Mean
Stakeholder Participation Factors						
KCCA involves residents and waste service providers in planning SWM activities.	44	51	45	20	0	3.74
Stakeholders are regularly consulted when developing waste management strategies.	22	48	88	2	0	3.56
Communities participate in waste management awareness and sensitization programs.	89	27	33	11	0	4.21
Stakeholders have opportunities to provide feedback on solid waste management services.	17	21	19	59	44	2.43
KCCA collaborates effectively with private waste collection companies and community groups.	93	36	31	0	0	4.39
Stakeholders participate in monitoring and evaluating solid waste management activities.	45	65	38	12	0	3.89
Stakeholder involvement improves compliance with waste management regulations.	89	54	14	3	0	4.43
Stakeholder participation increases ownership and sustainability of SWM initiatives.	104	51	5	0	0	4.62
Average	62.88	44.13	34.13	13.38	5.50	3.91

(Source: Author's Fieldwork 2026).

4.2.3. Stakeholder Participation factors

Stakeholder participation recorded the highest overall mean (3.91), suggesting that stakeholder involvement is relatively strong and is not a major barrier (Table 6). Respondents agreed that KCCA collaborates effectively with private waste collection companies and

community groups (4.39), that communities participate in awareness programs (4.21), and that stakeholders take part in monitoring and evaluation (3.89). They also strongly believed that stakeholder involvement improves compliance (4.43) and increases ownership and sustainability (4.62). This shows that respondents see participation as valuable.

The exception was the opportunity for stakeholders to give feedback on SWM services (2.43), where 64 percent of respondents disagreed. This suggests that while stakeholders are involved in activities, formal feedback channels are weak.

Table 7: Frequency results of implementation of SWM strategies survey, N= 160

Variables	**5**	**4**	**3**	**2**	**1**	**Wt. Mean**
Implementation of Solid Waste Management Strategies						
KCCA effectively implements solid waste collection strategies in Kampala Central Division.	20	36	45	38	21	2.98
Waste collection services are provided consistently and reliably.	14	67	39	27	13	3.26
KCCA effectively monitors private waste service providers.	26	41	88	4	1	3.54
Solid waste management regulations are effectively enforced by KCCA.	4	13	32	68	43	2.17
Waste transportation and disposal systems are efficiently managed.	3	9	11	88	49	1.93
Waste segregation and recycling are effectively implemented.	2	7	21	45	85	1.73
Public awareness programs have improved solid waste management practices.	43	75	33	6	3	3.93
Overall, KCCA solid waste management strategies achieve their intended objective.	0	0	31	45	84	1.67
Average	14.00	31.00	37.50	40.13	37.38	2.65

(Source: Author's Fieldwork 2026).

4.2.4. Implementation of SWM strategies

Implementation recorded an overall mean of 2.65, below 3.00 (Table 7), indicating that SWM strategies are not being implemented effectively. Respondents were mixed on collection: collection strategies (2.98) were rated as moderate, while the reliability of services (3.26) and monitoring of private providers (3.54) were slightly above 3.00. Public awareness programs were the strongest area (3.93), with 74 percent agreeing that they have improved practices.

Implementation was weakest on regulation enforcement (2.17), efficient transportation and disposal (1.93), and segregation and recycling (1.73). Of the respondents, 69 percent disagreed that regulations are enforced, 86 percent disagreed that transportation and disposal are efficiently managed, and 81 percent disagreed that segregation and recycling are effective. Likewise, 81 percent disagreed that KCCA's strategies achieve their intended objectives (1.67).

4.3. Key challenges to implementation of solid waste management strategies

4.3.1. Insufficient logistics and funds

All the financial factors recorded a mean value below 2 which implies that financing waste management is a major headache for solid waste managers of Kampala central division. From the key informant interviews with the top officials, they attributed this to limited funds which makes it extremely difficult to acquire logistics. They further complained of insufficient equipment's that are needed to collect, segregate waste. They argued that KCCA is unable to provide sufficient logistic support to workers and private waste company. Furthermore, while having a conversation with a waste laden truck driver responded that, "The trucks used to transport the waste are very old and always break down". While field observation I saw several trucks transporting waste to final disposal sites breaking down and unable to carry out the operation effectively.

4.3.2. Limited supervision and monitoring of the staff

Supervision and monitoring of staff emerged as a concern in the division. The survey recorded a mean of 2.98 for effective supervision and monitoring, marginally below the midpoint of 3.00, with 76 percent of respondents remaining neutral. Observations, key informant interviews, and focus group discussions supported this finding, indicating that some parts of the division receive little or no supervision.

The competence of managers who coordinate SWM operations was also rated low (mean = 2.75), which may have contributed to the low staff motivation reflected in the findings (mean = 2.89). Most of the workers who worked on different disposal sites cited the work to be tedious and infectious one as no proper incentives and safety instruments are provided to them. So, the attitude of laborers towards managing solid waste in the city greatly affects the SWM activities. This is one of the major problems that confronts waste management authorities in the city. The department of waste management also lacks staff who are responsible for accounting works and who suggest measures to generate revenue from local sources.

4.3.3. Stakeholder participation

Stakeholder's participation is a critical element in strategy transparency. In fact, stakeholders' participation is one of the significant indicators of a good governance practice. A study by (Udessa et al., 2026) showed that stakeholders' participation in the policy implementation is important in order to increase their knowledge and awareness of the policy. The survey found that 64 percent of respondents disagreed that stakeholders have opportunities to give feedback on SWM services. This suggests that stakeholders may take part in SWM activities but are not told what happens as a result of their input. The focus group discussions pointed the same way, with participants noting that stakeholder participation and feedback are frequently not treated as a serious concern.

CHAPTER FIVE: Discussions, Conclusion and Recommendations

5 Discussion

The demography of the respondents showed most of them were male, young aged 25 to 44 years and experienced which confirms that Uganda's population is comprised of youths who are able to carry out day-to-day SWM operations well (Tumwesigye et al., 2023). This study explored the factors precluding the implementation of solid waste management strategies in Kampala central division using a quantitative approach. Most of Kampala's central division discussion on solid waste management highlighted the apparent breakdown of the regulatory agencies assigned to deal with solid waste management in the city. This is based on the fact that poor policy implementation, inadequate funding, and poor technical know-how are some of the factors contributing to the breakdown of regulations on waste management and sanitation in the city.

The study found that limited infrastructure and capacity to manage solid waste; lack of skilled workforce; perceived low sense of responsibility towards collecting and disposing of solid waste, low-risk perception towards the harmful effects of waste, and poor attitudes towards solid waste management in the community adversely affect the effective management of solid waste in the study setting. Overall, the study findings corroborate existing literature that shows a city's staff, financial resources and stakeholder involvement are essential for implementing effective waste management strategies.

Among the staff factors, weak supervision and monitoring, low motivation, and limited managerial competence constrained the effective implementation of SWM strategies in Kampala Central Division. Supervision and monitoring of staff recorded were largely neutral which may reflect limited incentives and rewards for staff. Pay is a likely contributor: 44 percent of respondents earned below UGX 500,000 per month and 69 percent earned below UGX 1,000,000, which is modest given the high cost of living in the city. For instance, in a study to assess the factors affecting the sustainable solid waste management the case of shashemene city, Ethiopia, it was reported that city's collection services covered only 45.96% of total waste generated and this was attributed to limited staff in the city (Udessa et al., 2026). In addition, incompetent managers to coordinate and supervise SWM operations further disrupt the strategy implementation, a challenge that impacts negatively on waste management in the city. Similar findings have been reported in other studies (Kinobe et al., 2015). Furthermore, a study on municipal solid waste management under decentralization in

Uganda also found that urban ciities lacked the capacity to meet the demands of waste management (Okot-Okumu & Nyenje, 2011).

The findings suggest that financial factor is a major challenge of waste management in Kampala central division and this was attributed to inequitable distribution of resources between the central government and KCCA; that leads to inefficient and ineffective solid waste management in the city. Inadequate funding is also a common problem in other cities of developing countries. In Kumasi, for example, respondents disagreed that the Metropolitan Assembly has sufficient budgetary funds for SWM (mean = 2.08), and financial factors were identified as a major challenge (Fianko Otchere et al., 2014). A study of the challenges to solid waste management in urban local authorities in Uganda, using Arua Municipality as a case, likewise identified inadequate funding for solid waste handling and disposal as one of the causes of urban waste management problems (Adebuason, 2024).

Furthermore, the perceived low level of feedback from stakeholder may be attributed to the low levels of social trust among the different stakeholders. Different stakeholders have different interests which may result to biased decisions that could affect SWM operations. Similar findings have been reported in the study to explore the implementation analysis of solid waste management in Ludhiana city of Punjab where it was observed limited stakeholder involvement significantly affect all SWM operations in the city (Mir et al., 2021).

5.1. Conclusion

In summary, KCCA has the staff and stakeholder support needed to implement SWM strategies, but inadequate financing constrains its capacity to turn these strengths into effective service delivery, particularly in enforcement, transportation and disposal, and segregation and recycling. What may be lacking is not people or partnerships but the financial resources and supervisory systems to support them. Therefore, resources should be adequately allocated in SWM services so as to create a green and clean city

5.2. Recommendation

For KCCA to implement sustainable solid waste management (SWM) strategies, the following issues need to be addressed;

5.2.1. Motivation to the staff

The workforce's contribution to garbage collection, waste segregation, waste disposal, and recycling should be strengthened. The workers should be provided with adequate instruction,

a morale program, additional benefits, incentives and rewards.

5.2.2. Providing adequate resources to municipal corporation

National government needs to improve the allocations to KCCA and make these allocations regular in order to avoid delayed payments which hinder the regular services of waste management. The timely payments will improve staff motivation that will lead to a sustainable commitment among the workers. The city should seek for different mechanisms for creating revenues from the local sources such as through resource recovery schemes of composting, black soldier fly farming. methods of generating and mobilizing revenue from local sources.

5.3. Areas for future study

Future studies should be conducted in the following areas;

5.3.1. Examine the interrelationships among staff capacity, financial resources, and stakeholder participation and their combined effect on the implementation of SWM strategies, using both qualitative and quantitative approaches.

5.3.2. Investigate the financial viability of waste recovery options (composting, recycling, and waste-to-energy) in Kampala, including their costs, revenue potential, and market demand.

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APPENDICES

Appendix A: Consent Form for survey

I am conducting research on the factors that hinder the implementation of solid waste management strategies by KCCA in Kampala Central Division. You have been identified as a respondent for this study because of your role/experience relevant to this topic. The survey will help us better understand key issues relating to financial resources, staffing, and stakeholder participation in solid waste management. The survey should take no more than one hour to complete. Your participation is entirely voluntary. You may decline to answer any question or withdraw from the study at any time, without penalty or loss of benefit to which you are otherwise entitled. All information you provide will be treated as confidential and used solely for academic purposes. Your responses will not be linked to your name in any report or publication arising from this study. Data will be stored securely and accessed only by the research team. By completing and submitting this survey, you indicate that you have read this information and voluntarily agree to participate. If you have any questions or concerns about this study, please contact:

Researcher Name
Mr. Aijuka Nicholas
Phone: +256 778600932
Email:

Research Supervisor Name
Dr. Anthony Tibaingana

Participant Name
……
Phone: ……
Email: ……

Appendix C: Survey questionnaire

Section A: Socio-Demographic Characteristics of Respondents

Please tick (✓) the appropriate response.

No.	Variable	Response Options
1.	Gender	☐ Male ☐ Female ☐ Prefer not to say
2.	Age group	☐ Below 25 years ☐ 25–34 years ☐ 35–44 years ☐ 45–54 years ☐ 55 years and above
3.	Highest level of education attained	☐ Certificate ☐ Diploma ☐ Bachelor's degree ☐ Postgraduate degree ☐ Other (Specify) _____
4.	Position/Occupation	☐ KCCA staff ☐ Private waste management worker ☐ Business operator/trader ☐ Resident/community member ☐ Other (Specify) _____
5.	Department/Area of involvement in solid waste management	☐ Waste collection ☐ Waste transportation ☐ Waste disposal ☐ Environmental health/sanitation ☐ Administration/management ☐ Other (Specify) _____
6.	Length of experience in solid waste management-related activities	☐ Less than 1 year ☐ 1–5 years ☐ 6–10 years ☐ Above 10 years
7.	Monthly income level (optional)	☐ Below UGX 500,000 ☐ UGX 500,001–1,000,000 ☐ UGX 1,000,001–2,000,000 ☐ Above UGX 2,000,000
8.	Previous training in solid waste management	☐ Yes ☐ No

A **5-**point Likert scale is used to rate the degree of agreement or disagreement with

statements in sections B, C, D and E

Scale	**Response**
1	Strongly Disagree (SD
2	Disagree (D)
3	Neutral (N)
4	Agree (A)
5	Strongly Agree (SA)

Section B: Staff Capacity and Implementation of Solid Waste Management Strategies

No.	Statement	1	2	3	4	5
SC1	KCCA has adequate numbers of staff to effectively implement solid waste management strategies.	☐	☐	☐	☐	☐
SC2	KCCA staff involved in solid waste management possess the necessary technical skills and competencies.	☐	☐	☐	☐	☐
SC3	KCCA provides regular training and professional development opportunities for solid waste management staff.	☐	☐	☐	☐	☐
SC4	Staff members have adequate knowledge of solid waste management policies and regulations.	☐	☐	☐	☐	☐
SC5	KCCA staff have sufficient experience to manage solid waste collection and disposal activities effectively.	☐	☐	☐	☐	☐
SC6	There is effective supervision and monitoring of staff involved in solid waste management activities.	☐	☐	☐	☐	☐
SC7	Staff motivation influences the effective implementation of solid waste management strategies.	☐	☐	☐	☐	☐
SC8	KCCA has competent managers who effectively coordinate solid waste management operations.	☐	☐	☐	☐	☐

Section C: Financial Resources and Implementation of Solid Waste Management Strategies

No.	Statement	1	2	3	4	5

FR1	KCCA allocates adequate financial resources for implementing solid waste management strategies.	☐	☐	☐	☐	☐
FR2	Funds for solid waste management activities are released in a timely manner.	☐	☐	☐	☐	☐
FR3	KCCA has sufficient funds to support waste collection and transportation activities.	☐	☐	☐	☐	☐
FR4	Financial resources are adequate for maintaining waste management equipment and infrastructure.	☐	☐	☐	☐	☐
FR5	KCCA has adequate funding for waste management monitoring and enforcement activities.	☐	☐	☐	☐	☐
FR6	Available financial resources are efficiently utilized to achieve solid waste management objectives.	☐	☐	☐	☐	☐
FR7	KCCA has adequate resources to support public awareness and sensitization programs on waste management.	☐	☐	☐	☐	☐
FR8	Limited financial resources negatively affect the implementation of solid waste management strategies.	☐	☐	☐	☐	☐

Section D: Stakeholder Participation

No.	Statement	1	2	3	4	5
SP1	KCCA involves residents and waste service providers in planning solid waste management activities.	☐	☐	☐	☐	☐
SP2	Stakeholders are regularly consulted when developing solid waste management strategies.	☐	☐	☐	☐	☐
SP3	Communities participate in waste management awareness and sensitization programs.	☐	☐	☐	☐	☐
SP4	Stakeholders have opportunities to provide feedback on solid	☐	☐	☐	☐	☐

	waste management services.					
SP5	KCCA collaborates effectively with private waste collection companies and community groups.	☐	☐	☐	☐	☐
SP6	Stakeholders participate in monitoring and evaluating solid waste management activities.	☐	☐	☐	☐	☐
SP7	Stakeholder involvement improves compliance with waste management regulations.	☐	☐	☐	☐	☐
SP8	Stakeholder participation increases ownership and sustainability of solid waste management initiatives.	☐	☐	☐	☐	☐

Section E: Implementation of Solid Waste Management Strategies

No.	Statement	1	2	3	4	5
ISW1	KCCA effectively implements solid waste collection strategies in Kampala Central Division.	☐	☐	☐	☐	☐
ISW2	Waste collection services are provided consistently and reliably.	☐	☐	☐	☐	☐
ISW3	KCCA effectively monitors private waste collection service providers.	☐	☐	☐	☐	☐
ISW4	Solid waste management regulations are effectively enforced by KCCA.	☐	☐	☐	☐	☐
ISW5	Waste transportation and disposal systems are efficiently managed.	☐	☐	☐	☐	☐
ISW6	Waste segregation and recycling initiatives are effectively implemented.	☐	☐	☐	☐	☐
ISW7	Public awareness programs have improved solid waste management practices.	☐	☐	☐	☐	☐
ISW8	Overall, KCCA solid waste management strategies achieve their intended objectives.	☐	☐	☐	☐	☐

Appendix C: Letter of Introduction

MAKERERE UNIVERSITY

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COLLEGE OF BUSINESS AND MANAGEMENT SCIENCES

School of Business

Office of the Dean

10/09/2026

TO WHOM IT MAY CONCERN

Dear Sir/Madam

INTRODUCING MR. NICHOLAS AIJUKA TO YOUR ORGANISATION FOR RESEARCH SUPPORT.

This is to introduce to you Mr. Nicholas Aijuka, a Master of Business Administration student, **registration number - 2024/HD06/25340U,** who is currently conducting a **Plan B** research study on **"Factors Precluding KCCA Implementation Strategies of Solid Waste Management in Kampala Central Division."** for research support. Your support towards Nicholas will enable him to fulfil a key requirement for the award of the Degree of Master of Business Administration at Makerere University.

While the research being pursued is mainly for academic purposes, upon its completion is expected to inform policy and contribute to the overall operations of organisations. Therefore, Nicholas is reaching out to your organisation for assistance in the realisation of the aforementioned endeavours.

Any research assistance extended to him will be our pleasure, and we look forward to your continued support.

Yours sincerely,

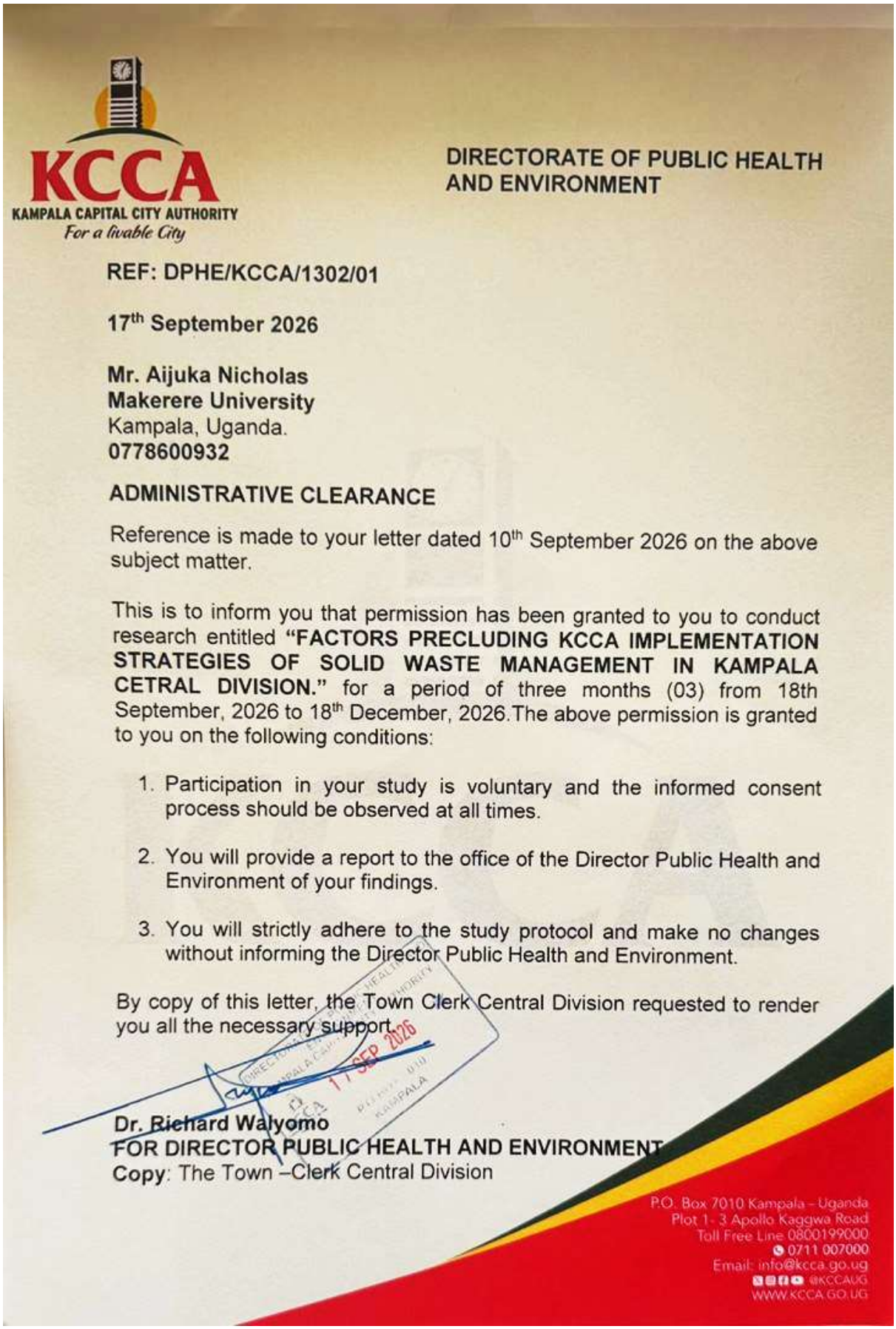
Dr. Diana L.K Ssekiboobo,

Co-ordinator, Graduate Programmes and Research. Telephone: 0782757734/0704904492

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Leveraging 100 years of Excellence in Building a Transformed Society

Appendix C: Administrative Clearance by KCCA



KCCA
KAMPALA CAPITAL CITY AUTHORITY
For a livable City

DIRECTORATE OF PUBLIC HEALTH AND ENVIRONMENT

REF: DPHE/KCCA/1302/01

17th September 2026

Mr. Aijuka Nicholas
Makerere University
Kampala, Uganda.
0778600932

ADMINISTRATIVE CLEARANCE

Reference is made to your letter dated 10th September 2026 on the above subject matter.

This is to inform you that permission has been granted to you to conduct research entitled **"FACTORS PRECLUDING KCCA IMPLEMENTATION STRATEGIES OF SOLID WASTE MANAGEMENT IN KAMPALA CETRAL DIVISION."** for a period of three months (03) from 18th September, 2026 to 18th December, 2026.The above permission is granted to you on the following conditions:

1. Participation in your study is voluntary and the informed consent process should be observed at all times.
2. You will provide a report to the office of the Director Public Health and Environment of your findings.
3. You will strictly adhere to the study protocol and make no changes without informing the Director Public Health and Environment.

By copy of this letter, the Town Clerk Central Division requested to render you all the necessary support.

17 SEP 2026

Dr. Richard Walyomo
FOR DIRECTOR PUBLIC HEALTH AND ENVIRONMENT
Copy: The Town –Clerk Central Division

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