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Assessing the Influence of Waste Disposal Regulation Awareness on Waste Management Practices in Kapchorwa Municipality, Uganda

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Abstract

The objective of this study was to assess the influence of waste disposal regulation awareness on waste management practices in Kapchorwa municipality, Uganda. A mixed-methods approach (qualitative and quantitative) was used. Qualitative approach was used to interview the municipal officials, waste management agencies, and market leaders while quantitative approach was used to survey information from the traders and customers to assess satisfaction with waste services. The study population comprised of 263 market traders/customers in markets and 6 market leaders, municipal officials, and waste management agencies. Slovin formula was used to determine the sample size for this research study. In this study, the researcher used questionnaire survey and interviews guide for the data collection. To test the reliability of the questionnaire as a research instrument, a test-retest technique was employed in which questionnaire was administered to a group of market traders and customers in markets outside Kapchorwa municipality but with similar characteristics. The result of reliability of the questionnaire was established with the use of test-retest reliability with a value of 0.82. validity was determined through face and content validity with a CVI value of 0.76. The findings revealed that there is a moderate positive significant relationship between waste disposal regulation awareness and waste management practices. It was recommended that Kapchorwa municipality should continuously improve waste disposal regulation awareness especially in all markets since it was found to be a moderate predictor.

Keywords: Waste disposal, regulation awareness, management practices, traders, customers

Introduction

Rapid industrialization and market expansion led to higher waste volumes of municipal solid waste generation (Hoornweg & Bhada-Tata,2012), necessitating formal waste collection systems. European and American cities introduced bylaws requiring market vendors to dispose of waste properly (Medina (2007). For example: United Kingdom's Public Health Act (1848, 1875) mandated waste removal to prevent epidemics. United states Cities (late 1800s), Municipal "scavenger departments" collected market waste, often using horse-drawn carts Melosi (2005).

Waste disposal regulations in municipal markets evolved from unregulated dumping to structured, eco-conscious systems. While developed nations emphasize sustainability and tech-driven solutions (Geissdoerfer et al., 2017), many developing regions still struggle with enforcement and infrastructure. Future progress hinges on stronger policies, public awareness, and investment in waste-to-resource innovations (smith and Lee,2023).

Waste management remains a critical challenge in urban and peri-urban areas of Uganda, including Kapchorwa Municipality. Despite existing policies such as the National Environment Act (2019) and the Public Health Act

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(2020), enforcement of waste disposal regulations remains weak, leading to poor sanitation in public markets (National Environmental Management Authority, 2020; Katusiime et al., 2018). Market areas, being major generators of organic and inorganic waste, require efficient service delivery mechanisms to mitigate health and environmental risks.

Several studies have examined waste management challenges in Ugandan municipalities, focusing on Kampala (Mwiganga & Katusiime, 2020), Mbale (Tukahirwa et al., 2018), and Jinja (Nabukeera, 2020). However, limited research has been conducted on smaller municipalities like Kapchorwa**,** where market waste management faces unique challenges due to topographical constraints, limited municipal capacity, and cultural practices affecting waste disposal behaviors.

This research gap calls for an in-depth investigation into how waste disposal regulations are implemented in Kapchorwa's markets, the efficiency of service delivery mechanisms, and potential policy improvements tailored to small municipalities. Addressing this gap will contribute to better waste management strategies that align with Uganda's Vision 2040 and Sustainable Development Goal (SDG) 11 on sustainable cities (United Nations. (2020).

Statement of the Problem

In Kapchorwa Municipality, Uganda, rapid urbanization and increasing market activities have led to growing waste generation, yet waste disposal regulations and service delivery remain inadequate (National Environment Management Authority, 2019). Markets such as Kapchorwa Central Market and smaller trading centers face challenges in waste collection, disposal, and compliance with environmental policies, leading to poor sanitation and environmental degradation (Kampala Capital City Authority Act, 2020). While national waste management policies exist, there is limited research on their implementation at the municipal level, particularly in market settings within Kapchorwa. Factors such as inadequate funding, weak enforcement, low public awareness, and insufficient infrastructure contribute to inefficiencies in waste service delivery (World Bank, 2022). A deeper understanding of these challenges is necessary to recommend policy adjustments and improve waste management practices. The study therefore aims to assess the relationship between waste disposal regulation practices and service delivery in markets within Kapchorwa municipality, Uganda.

Research Objective

The study assessed the influence of waste disposal regulation awareness on waste management practices in Kapchorwa municipality, Uganda.

Research Hypothesis

There is no significant influence of waste disposal regulation awareness on waste management practices in Kapchorwa municipality, Uganda.

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Methods Used For The Study

Research Design

The study employed a descriptive survey research design focusing on market traders, customers, market leaders, municipal officials, and waste management agencies in Kapchorwa municipality, Uganda. A descriptive survey design is the research design that focuses on either identifying the characteristics of a studies phenomenon or investigating possible links to correlations among two or more phenomena.

The study majorly aimed at providing detailed data on the subject under study for the entire population under investigation. A survey gives a description of some pertinent characteristics of the population as well as allow for inferences of cause and impact. A survey focused on a set of market traders, customers, market leaders, municipal officials, and waste management agencies in Kapchorwa municipality, Uganda.

According to Cooper & Schindler (2000), a descriptive survey design thus enables the researcher to collect in depth data on the population being studied and allowed the researcher to be more focused in giving specific and relevant recommendations.

Research Approach

A mixed-methods approach (qualitative and quantitative) was used. Qualitative approach was used to interview the municipal officials, waste management agencies, and market leaders while quantitative approach was used to survey information from the traders and customers to assess satisfaction with waste services.

Study Area

The reason for selecting markets in Kapchorwa municipality, Uganda for the study is due to its proximity to the researcher's home area. The sample for the study was drawn from market traders, customers, market leaders, municipal officials, and waste management agencies. Since the accuracy of the sample depended mostly on the sampling frame, the researcher ensured a high degree of correlation between the sampling frame and the sample population.

Study Population

The population of the study consists of all market traders, customers, market leaders, municipal officials, and waste management agencies in Kapchorwa municipality, Uganda. A total of 767 market traders and customers were targeted for the study.

Sampling Procedures

This study applied sampling technique in order to collect the required information. Both probability and non-probability sampling techniques were used in this study.

Purposive sampling was used for key informants (municipal officers, market leaders and waste management agencies) while stratified random sampling was used for traders and customers (ensuring representation across different market sections).

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Sample Size

To determine the appropriate sample size, Slovin (1960) is used to determine the sample size for the research and the formula is;

$n = N/(1+Ne^2)$.

Here, n represents the sample of respondents for this study, N is the study population and e denotes level of precision (0.05).

The researcher determines the size of the sampled participants from the markets from which data were collected for comparison purposes as indicated below;

- $n = 767/(1+767(0.05^2)$
- $n = 767/(1+767(0.0025)$
- $n=767/(1+1.9175)$
- $n=767/(2.9175)$
- $n=263$

Thus, the calculated sample size is 263 market traders and customers in markets within Kapchorwa municipality, Uganda.

Results of the Data Analysis

Response Rate

The researcher distributed 263 questionnaires to the respondents and 237 were returned to the researcher for analysis. This gave a response rate of 90.11%.

Descriptive Analysis

Table 1: Waste Disposal Policies

Responses	**SA**		**A**		**N**		**D**		**SD**		**TOTAL**	
	5		**4**		**3**		**2**		**1**			
	F	%	F	%	F	%	F	%	F	%	F	%
I understand the waste disposal rules and regulations that apply in this market.	102	43	88	37	25	12	14	6	5	2	237	100
Waste disposal policies in this market are well communicated to vendors and customers.	76	32	113	48	19	8	24	10	5	2	237	100

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Vendors and customers are aware of their responsibilities regarding waste disposal.	59	25	104	44	42	18	21	9	11	5	237	100
The market authorities provide enough information about proper waste management practices.	97	41	107	45	14	6	19	8	0	0	237	100
There are awareness campaigns or training on waste management in the markets.	95	40	97	41	10	4	21	9	14	6	237	100
Waste disposal policies have improved the cleanliness of the market environment.	59	25	104	44	43	18	21	9	9	4	237	100
Iam satisfied with how waste disposal policies are implemented in Kapchorwa municipal markets.	76	32	109	46	26	11	19	8	7	3	237	100

Source: Primary Data (2025)

From the table 1, shows that the response on the item "I understand the waste disposal rules and regulations that apply in this market" shows that 43% of the respondents strongly agreed, 37% agreed with the statement, 12% were neutral and 6% disagreed, 2% strongly disagreed which means that majority of respondents agreed with the statement.

Another item asked was that "Waste disposal policies in this market are well communicated to vendors and customers", and findings showed that 76 respondents with 32% strongly agreed, 113 of the respondents agreed with 48%, 8% were neutral 10% disagreed while 2% strongly disagreed.

Respondents were further presented with item that "Vendors and customers are aware of their responsibilities regarding waste disposal", and responses revealed that 25%of the respondents strongly agreed with the statement and most of the respondents 44% agreed, 18% were neutral and only 9% disagreed and 5% strongly disagreed.

On the item that "The market authorities provide enough information about proper waste management practices" shows that 41% of the respondents strongly agreed with the statement, 45% agreed, 6% were neutral and 8% disagreed.

The response on the item "There are awareness campaigns or training on waste management in the markets" shows that 40% of the respondents strongly agreed with the statement, 41% agreed, 4% neutral and 9% disagreed while 6% strongly disagreed. This implies that there are awareness campaigns or training on waste management in the markets.

The response on the item "Waste disposal policies have improved the cleanliness of the market environment" shows that 25% of the respondents strongly agreed while 44% agreed with the statement, 18% were neutral and 9% disagreed

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and 4% strongly disagreed. Therefore, it can be observed that respondents are satisfied with how waste disposal policies are implemented in Kapchorwa municipal markets.

Another Item asked was that "Iam satisfied with how waste disposal policies are implemented in Kapchorwa municipal markets". and findings showed that 76 respondents with 32% strongly agreed, 109 of the respondents agreed with 46%, 11% were neutral, while 8% disagreed and 7% strongly disagreed.

Table 2: Mean Score Analysis for waste disposal policies

Responses	N	Minimum	Maximum	Mean	Std. Deviation
I understand the waste disposal rules and regulations that apply in this market.	237	1	7	1.17	.379
Waste disposal policies in this market are well communicated to vendors and customers	237	1	7	1.26	.439
Vendors and customers are aware of their responsibilities regarding waste disposal	237	1	7	1.31	.464
The market authorities provide enough information about proper waste management practices.	237	1	7	1.22	.415
There are awareness campaigns or training on waste management in the markets.	237	1	7	1.39	.489
Waste disposal policies have improved the cleanliness of the market environment.	237	1	7	1.31	.467
I am satisfied with how waste disposal policies are implemented in Kapchorwa municipal markets	237	1	7	1.41	.491

The study findings in table 2 on the I understand the waste disposal rules and regulations that apply in this market using mean, the respondents agreed that the I understand the waste disposal rules and regulations that apply in this market with very low mean=1.17 and Std=0.379. The respondents agreed that the Waste disposal policies in this market are well communicated to vendors and customers mean=1.26 and Std=0.439. Vendors and customers are aware of their responsibilities regarding waste disposal with mean=1.31 and Std=0.464. The market authorities provide

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enough information about proper waste management practices with mean=1.22 and Std=0.415 and there are awareness campaigns or training on waste management in the markets (mean=1.39 and Std=.489). Waste disposal policies have improved the cleanliness of the market environment (mean=1.31 and Std=0.467). They are satisfied with how waste disposal policies are implemented in Kapchorwa municipal markets (mean=1.41 and Std=0.491). The standard deviation represented the variation of responses from the mean with the highest variation being 0.491 an indication that the variations in responses were acceptable since the standard deviations were less than 1.

Inferential Analysis

Table 3: Shows the Correlation coefficient between waste disposal regulation awareness on waste management practices

Correlations		Waste disposal regulation awareness	Waste management practices
Waste disposal regulation awareness	Pearson Correlation	1	.621**
	Sig. (2-tailed)		.000
	N	237	237
Waste management practices	Pearson Correlation	.621**	1
	Sig. (2-tailed)	.000	
	N	237	237

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

According to table 3, Pearson correlation of waste disposal regulation awareness and waste management practices, results revealed the significance positive responses relation between waste disposal regulation awareness and waste management practices that is 0.621^{**} significant at 0.01 level of a two tailed test with 237 degrees of freedom.

This implies that there is a moderate positive significant relationship between waste disposal regulation awareness and waste management practices.

Qualitative Analysis

From the interviews on the above items, it was clearly confirmed by one of the key respondents that

"Community members, market men and women understand the waste disposal rules and regulations that apply in their markets in Kapchorwa municipality, they also understand the waste disposal rules and regulations that apply in their markets. Waste disposal policies in the markets are well communicated to vendors and customers. Management in Kapchorwa municipality should ensure that waste segregation at the part of generation to reduce volumes and hence ease waste management. There should be a continuous community sensitization in the markets across Kapchorwa municipality. Management of Kapchorwa municipality should provide temporary storage equipment at specific parts of the different markets within the municipality".

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Discussion of the Study Finding

The finding revealed that the respondents were satisfied with how waste disposal policies are implemented in Kapchorwa municipal markets. Vendors and customers are aware of their responsibilities regarding waste disposal. The market authorities provide enough information about proper waste management practices and there are awareness campaigns or training on waste management in the markets. Waste disposal policies have improved the cleanliness of the market environment. They are satisfied with how waste disposal policies are implemented in Kapchorwa municipal markets. Studies indicate that compliance levels vary based on awareness, infrastructure, and economic factors. Research by Afroz et al. (2013) found that market traders in Dhaka, Bangladesh, had low compliance with waste disposal laws due to insufficient knowledge of regulations. Public awareness campaigns were recommended to improve adherence.

A study by Oguntoyinbo (2012) in Nigerian markets revealed that poor waste collection infrastructure led to unlawful disposal of trash, despite existing laws. Traders often resorted to open burning or indiscriminate disposal due to inadequate bins and collection services. According to Guerrero et al. (2013), markets with economic incentives (e.g., tax rebates for proper waste disposal) showed higher compliance rates. Conversely, weak penalty systems led to persistent violations.

Enforcement plays a crucial role in ensuring compliance, yet many jurisdictions struggle with implementation due to resource constraints and corruption. A study by Katusiime et al. (2013) found that enforcement agencies lacked sufficient personnel and funding to monitor market waste disposal effectively in Kampala. Corruption among inspectors further undermined enforcement.

Research by Wilson et al. (2012) highlighted that participatory enforcement, involving market associations in monitoring, improved compliance in Indonesia. Such community-based approaches reduced reliance on government enforcement alone.

A comparative study by Hoornweg & Bhada-Tata (2012) noted that countries with stringent legal penalties (e.g., Singapore) had higher compliance rates due to strict enforcement, whereas lax laws in other regions led to poor adherence.

Conclusion

According to Pearson correlation of waste disposal regulation awareness and waste management practices, results revealed the significance positive responses relation between waste disposal regulation awareness and waste management practices that is 0.621^{**} significant at 0.01 level of a two tailed test with 237 degrees of freedom. This implies that there is a moderate positive significant relationship between waste disposal regulation awareness and waste management practices.

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Recommendation

The researcher found out that there is a moderate positive significant relationship between waste disposal regulation awareness and waste management practices. Kapchorwa municipality should continuously improve waste disposal regulation awareness especially in all markets since it was found to be a moderate predictor, and has a positive relationship with waste management practices in markets in the municipality.

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