

Revenue and Service Delivery in Uganda: A Case Study of Kisoro District

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Abstract

This study examined the relationship between revenue collection and service delivery in Kisoro District, Uganda, using statistical models, including regression and Pearson correlation analysis. Regression analysis results revealed that funding adequacy and infrastructure quality had negligible statistical significance in explaining variations in service delivery ($p > 0.05$). Similarly, revenue collected and infrastructure quality also showed no significant effects on service delivery outcomes ($p > 0.05$). The Pearson correlation analysis revealed a strong and statistically significant positive relationship between revenue and service delivery, with a correlation coefficient of 0.745 and a p-value of 0.000. The study concluded that while revenue collection correlates strongly with service delivery, other unmeasured factors likely contribute to variations in service outcomes. It identified limitations in data precision and methodological approaches, such as the broad confidence intervals and high standard errors, which underscored the need for more comprehensive data and robust analytical models. Key recommendations included improving revenue collection mechanisms through digital systems, expanding the revenue base, and enhancing taxpayer awareness. Additionally, the study advocated for better resource allocation prioritizing critical service areas, strengthening governance and accountability systems, and investing in high-quality infrastructure. Further research was recommended to explore the causal relationships between revenue collection and service delivery and incorporate broader contextual factors like governance and human resources.

Keywords: Revenue collection, service delivery, infrastructure quality, governance, Kisoro District, Uganda, correlation, regression analysis, public services.

Background of the study

Revenue generation and its efficient management are critical pillars for enhancing service delivery in Uganda's local governments, particularly in rural districts such as Kisoro (Amos et al., 2024). Local governments in Uganda are mandated to deliver essential services such as education, health, water, and infrastructure to their communities (F. Christopher et al., 2022). However, their performance is heavily influenced by their ability to mobilize, allocate, and utilize public revenues effectively. In Kisoro District, persistent challenges such as limited revenue bases, inefficiencies in resource allocation, and weak accountability mechanisms undermine the capacity to provide equitable and quality public services (Sarah & Audrey, 2024). Revenue mobilization in Kisoro District heavily relies on local taxes, grants from the central government, and donor contributions (Kazaara & Christopher, 2023). However, local tax revenue, a significant component of internally generated funds, remains insufficient to meet the growing demands for public services. The district faces structural issues such as a narrow tax base, limited industrial activities, and a predominantly agricultural economy, which restrict revenue collection potential (T. Christopher et al., 2024). Furthermore,

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compliance challenges due to mistrust in the local government's transparency exacerbate the issue. Nationally, only about 13% of Uganda's population pays taxes, leaving local governments like Kisoro to grapple with limited funding sources to meet their obligations (Nicholas & Nancy, 2024). These financial constraints significantly hinder infrastructure development and the provision of critical services, particularly in remote areas where demand for public interventions is highest.

Service delivery in Kisoro has often been characterized by inequities, inefficiencies, and underperformance, especially in the sectors of health, education, and water (Gracious, 2023). For instance, less than 50% of the district's population has access to clean water, and health facilities are often underfunded, understaffed, and poorly equipped to handle increasing patient loads (Edgar & Moses, 2023). According to a 2024 study, inadequate allocation of revenue to key sectors has contributed to deteriorating public trust in local authorities and widespread dissatisfaction among residents (T. Christopher et al., 2024). Budgeting and expenditure inefficiencies also impede service delivery, with significant proportions of funds being absorbed by administrative overheads rather than developmental projects. Empirical evidence highlights a strong correlation between effective revenue management and improved service delivery in Kisoro (Ntirandekura et al., 2022). Studies using mixed-method research designs reveal that budgeting constraints, lack of stakeholder participation, and weak accountability mechanisms are among the main impediments to delivering quality services. For example, a statistical analysis conducted between 2015 and 2020 in Kisoro District showed a strong positive correlation ($r = 0.805$) between stakeholder involvement and service delivery outcomes (F. Christopher et al., 2022). This result was statistically significant at a 99% confidence level ($p = 0.000$), indicating the critical role of community engagement in enhancing governance and service delivery outcomes (Gracious, 2023).

Statement of the problem

Effective revenue collection and its utilization for service delivery are critical to the socio-economic development of any district. In Uganda, local governments such as Kisoro District face significant challenges in aligning revenue generation with the provision of quality services to their residents (Nelson, 2024). Despite the decentralization policy introduced in the 1990s, which aimed to empower local governments to collect revenue and improve service delivery, the situation in Kisoro District indicates persistent inefficiencies in revenue mobilization and utilization (T. Christopher et al., 2024). According to the Uganda Bureau of Statistics (UBOS) report of 2022, Kisoro District generated only 45% of its projected revenue, heavily relying on central government transfers, which constituted approximately 88% of its total budget (Gloria et al., 2023). This over-reliance on central funding undermines the district's autonomy in addressing the unique needs of its residents (F. Christopher, 2024). The inadequacy of locally generated revenue has led to a gap in service delivery across various sectors such as health, education, water, and infrastructure development. For instance, the Ministry of Health (2023) reported that Kisoro District had one of the highest health facility absenteeism rates in Uganda, at 32%, partly due to insufficient funding for staff welfare and operational costs (Ronet et

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al., 2023). Similarly, primary education performance in the district has been consistently below the national average, with only 51% of pupils passing the Primary Leaving Examinations in 2023 compared to the national average of 65% (Ntirandekura et al., 2022).

Moreover, inadequate road infrastructure remains a pressing challenge, with over 60% of the district's feeder roads classified as impassable during the rainy season (Kazaara & Christopher, 2023). The weak link between revenue collection efforts and the provision of such essential services raises concerns about transparency, accountability, and efficiency in public fund management (Nicholas & Nancy, 2024). Despite initiatives such as the Local Government Revenue Enhancement Strategy (LGRES), the district continues to grapple with issues like tax evasion, limited taxpayer compliance, and poor administrative capacity. Given the reliance on agriculture as the primary economic activity in Kisoro District, which employs approximately 75% of the population (Allan et al., 2023), the underfunding of agricultural extension services further exacerbates poverty levels and food insecurity. The district's poverty rate stands at 38%, significantly higher than the national average of 20% (Faridah et al., 2023), highlighting the urgent need for improved revenue management and allocation to critical services. Therefore, it is imperative to investigate the intricate relationship between revenue collection and service delivery in Kisoro District (F. Christopher et al., 2022).

Specific objectives

1. To find out the extent of collecting revenue in Uganda, Kisoro District.
2. To find out the level of service delivery to the people of Uganda, Kisoro District
3. To find out the relationship between revenue and service delivery in Uganda, Kisoro District.

Methodology

The study employed a design for descriptive research, combining qualitative and quantitative methods (Nafiu et al., 2017). The foundation of the quantitative study was the description of the situation and the application of the investigator's personal measurements of statistics. Graphs, pie charts, and tables were used to convey quantitative data (Nafiu, 2012). In order to determine the distribution of variables in the study population, which aided in the collection of primary data, the descriptive research methodology was used. The descriptive character of the qualitative research approach helped the investigators achieve the study's goals. Variables that cannot be accurately quantified with numbers and statistics were assigned using expressions. Mathematics and statistics were employed in the quantitative study design to assign numbers to characteristics that might not be easily measured (Nafiu et al., 2012).

This refers to the aggregation of elements from which a sample is actually selected (Babbie, 200). Stratified sampling will be used to select respondents in this study. The population is divided into subgroups (called strata) basing on the relevant characteristics (for example gender, age, range, income bracket, job role) (Olanrewaju, Waititu, & Abiodun, 2021). Sampling procedure refers to choosing part of a population to use to test hypotheses about the entire population (George Stanley & Nafiu, 2020). The procedures included simple random

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sampling and purposive sampling and will be used to select respondents in the study (Olanrewaju, Waititu, & Abiodun, 2021). The percentage of the population chosen to represent the entire population in the study is what the investigator refers to as the sample size. A sample, according to Best and Kahn (2006), is a subset of the population with similar features that has been chosen for inspection and study. The study took into account a reachable population of 80 residents in the Kisoro District, which comprised the sample size of eighty participants. Using the predefined specifications on sample size by Krejcie Robert, V., and Morgan Daryle, W. (1970), the sample was calculated at a confidence level of 0.05.

(Olanrewaju, Waititu, & Nafiu, 2021), defines sampling as the act or process of selecting a suitable sample of the population for the purpose of determining parameters of characteristics of the whole population, and these can be either probability or non- probability sampling techniques. The simple random sample means that every case of the population has an equal probability of inclusion in sample (Aslam et al., 2022). The respondents in this study includes 32 market vendors, 14 property tax payers and 24 Boda and Vehicle drivers while the 10 staff from Uganda Revenue Authority were the key informants. Specific attention was paid to inclusion of both male and female respondents in the study area (George Stanley & Nafiu, 2020).

Purposive sampling technique was used to select units into the sample which included 10 staff from Uganda Revenue Authority. This technique is based on characteristics of a population and the objective of the study (George Stanley & Nafiu, 2020). The researcher used this technique because it is very useful in situations when you need to reach a targeted sample quickly, and where sampling for proportionality is not the main concern (Abiodun et al., 2022). According to Syed Muhammad Sajjad Kabir (2016), data collection is the process of acquiring data and measuring information on relevant variables in a predetermined systematic way that allows one to respond to specified research questions, test hypotheses, and assess results. The researcher will utilize both secondary and primary data methods to gather information about both qualitative and quantitative data. Consequently, other techniques were utilized to gather data, such as interview, survey, and observation (Abiodun et al., 2022). The two main techniques for gathering data were questionnaires and interviewing protocols. All tax payers (market sellers, property tax payers, boda riders, vehicle drivers, small- and large-scale retailers) will have their information collected using these (George Stanley & Nafiu, 2020). The edited data underwent the following quantitative and qualitative analyses: For easier comprehension, quantitative data was organized, and statistical representations like tables showing percentages and frequencies, pie charts, and graphs were employed. Data analysis was aided by the use of Microsoft Excel and the Statistical Package for Social Sciences (SPSS) (Nelson et al., 2022). But responses from participants that are pertinent to the research subject were identified through the analysis of the qualitative data. To explain the facts that were gathered from the context in which the investigator was able to cite responses from participants, this type of data was mostly examined.

RESULTS

Table 1: Extent of Revenue Collection in Kisoro District

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Predictor	Coefficient (β)	Standard Error	z-value	p-value	95% Confidence Interval
Constant	-8.6873	1.026	-8.465	0	[-10.699, -6.676]
Tax Compliance	6.1105	0.804	7.601	0	[4.535, 7.686]
Public Awareness	5.1537	0.663	7.771	0	[3.854, 6.454]
Administrative Efficiency	5.3367	0.707	7.547	0	[3.951, 6.723]

The positive coefficient indicates that improved tax compliance significantly increases the likelihood of successful revenue collection. A one-unit improvement in tax compliance raises the log-odds of efficient revenue collection by 6.11. This implies that efforts to reduce tax evasion and ensure adherence to tax obligations, such as through stricter enforcement or incentives, would markedly enhance revenue performance. Public awareness about the importance of taxes and their role in funding public services also has a substantial impact. A one-unit increase in public awareness raises the log-odds of revenue collection success by 5.15. This suggests that education campaigns and transparent communication about tax use can increase citizens' willingness to pay taxes. Administrative efficiency in tax collection, such as streamlined procedures, reduced bureaucratic delays, and corruption mitigation, significantly enhances revenue collection. A one-unit improvement in administrative efficiency increases the log-odds of success by 5.34.

Table 2. Level of Service Delivery in Kisoro District

Predictor	Coefficient (β)	Standard Error	z-value	p-value	95% Confidence Interval
Constant	-24.639	8971.79	-0.003	0.998	[-17600, 17600]
Funding Adequacy	23.7049	8971.79	0.003	0.998	[-17600, 17600]
Infrastructure Quality	23.5022	8971.79	0.003	0.998	[-17600, 17600]

The constant in the regression model has a coefficient value of -24.639, which theoretically represents the baseline level of service delivery when the values of all predictors are zero. However, it's extremely high standard error (8971.79) and the resulting z-value of -0.003 demonstrate a negligible statistical impact. The p-value of 0.998 indicates that this coefficient is not statistically significant. This implies that the baseline service delivery level cannot be reliably interpreted or predicted without considering other significant factors. The coefficient for funding adequacy is 23.7049, suggesting that an increase in funding adequacy might positively influence service delivery in Kisoro District. However, this impact is not statistically meaningful given the high standard error of 8971.79 and the p-value of 0.998. The 95% confidence interval spans an extremely wide range from -17600 to 17600, indicating high uncertainty in the estimate. This suggests that while funding adequacy is an important theoretical factor, the current dataset fails to demonstrate a significant relationship between it and service delivery.

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Similarly, the coefficient for infrastructure quality is 23.5022, implying a positive but non-significant relationship with service delivery. The standard error is again 8971.79, leading to a z-value of 0.003 and a p-value of 0.998. The confidence interval, identical to that of funding adequacy, ranges from -17600 to 17600. This wide range highlights that the data does not provide sufficient precision to draw meaningful conclusions about the effect of infrastructure quality on service delivery.

Table 3. Relationship Between Revenue and Service Delivery

Predictor	Coefficient (β)	Standard Error	z-value	p-value	95% Confidence Interval
Constant	-39.848	2137.81	-0.019	0.985	[-4229.871, 4150.176]
Revenue Collected	37.714	2137.81	0.018	0.986	[-4152.310, 4227.738]
Infrastructure Quality	21.2665	1616.71	0.013	0.99	[-3147.418, 3189.951]

The constant has a coefficient value of -39.848, representing the baseline level of service delivery when revenue collected and infrastructure quality are at zero. The standard error is exceptionally high (2137.81), leading to a z-value of -0.019 and a p-value of 0.985, which indicates no statistical significance. The 95% confidence interval ranges broadly from -4229.871 to 4150.176, reflecting a lack of precision in the estimate. This result implies that the baseline service delivery level cannot be meaningfully interpreted without the influence of other factors. The coefficient for revenue collected is 37.714, which theoretically indicates a positive relationship between increased revenue collection and improved service delivery. However, the high standard error (2137.81) and a p-value of 0.986 reveal that this relationship is not statistically significant. The 95% confidence interval (-4152.310 to 4227.738) spans an extensive range, indicating that the dataset does not provide sufficient evidence to affirm any meaningful association between revenue collection and service delivery. The coefficient for infrastructure quality is 21.2665, suggesting a marginal positive relationship with service delivery. Nonetheless, the standard error (1616.71) and p-value of 0.99 render this relationship statistically insignificant. The confidence interval (-3147.418 to 3189.951) indicates a high degree of uncertainty in the estimate, further confirming that the data does not support a reliable conclusion about the impact of infrastructure quality on service delivery.

Table 4: Relationship between revenue and service delivery

		Service delivery	Revenue
Service delivery	Pearson Correlation	1	0.745
	Sig. (2-tailed)		0.000
	N	59	59

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Revenue	Pearson Correlation	0.745	1
	Sig. (2-tailed)	0.000	
	N	59	59

The Pearson correlation coefficient between service delivery and revenue is 0.745. This indicates a strong positive relationship, meaning that as revenue increases, service delivery tends to improve significantly. The value of 0.745 is close to 1, which represents a perfect positive correlation. Thus, the data strongly supports the idea that higher revenue collection is associated with enhanced service delivery in Kisoro District. The p-value for the correlation is 0.000, which is below the standard significance threshold of 0.05. This result is highly significant, confirming that the observed relationship between revenue and service delivery is unlikely to be due to random chance. In other words, the correlation is statistically meaningful and provides robust evidence for the relationship.

Conclusion of the findings

The regression analysis examining the level of service delivery in Kisoro District reveals that the predictors (funding adequacy and infrastructure quality) show negligible statistical significance. This suggests that the current model or data may not sufficiently capture the complexity of factors influencing service delivery. The broad confidence intervals and high standard errors highlight considerable uncertainty, indicating potential issues such as small sample sizes, multicollinearity, or omitted variable bias.

A separate regression analysis on the relationship between revenue and service delivery also found no statistically significant predictors, further underscoring the need to refine data collection and model specifications. However, the Pearson correlation analysis demonstrated a strong positive and statistically significant correlation ($r = 0.745$, $p = 0.000$) between revenue collection and service delivery. This finding confirms that higher revenue is associated with better service delivery, even though causation could not be established.

Infrastructure quality and revenue collection emerge as critical components in influencing service delivery. However, the inability of these factors to achieve statistical significance in regression models suggests the existence of other unmeasured variables (e.g., governance, human resources, or community engagement) that substantially impact service delivery in Kisoro District.

Recommendations of the study

Local authorities should prioritize revenue generation through reforms such as digitization of revenue systems, better tax enforcement mechanisms, and taxpayer education programs. A well-structured revenue collection system will enhance local capacity to fund essential public services.

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