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Revenue streams strategies and financial sustainability of public parastatals in Uganda: Lessons from NWSC Jinja Area

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Abstract

The study was carried to investigate the effect of revenue streams strategies on the financial sustainability of public parastatals in Uganda, case of the National Water and Sewerage Corporation (NWSC) Jinja Area office. The study adopted descriptive and cross-sectional research designs based on both quantitative and qualitative approaches. A sample size of 46 respondents was used from a study population of 50 employees of NWSC Jinja Branch. The questionnaire and interview guide were the main data collection instruments. Correlation and regression analyses aided data analysis to establish relationships between revenue streams strategies and financial sustainability. Results revealed that there was a weak statistically significant positive relationship between tariff-based optimization and financial sustainability (r=.393**, Sig=0.007). Further, it was discovered that there was a strong and statistically significant positive relationship between non-tariff revenue streams strategies and financial sustainability (r = 0.628, Sig. = 0.000 ≤ 0.01). Similarly, the study revealed a strong and statistically significant positive relationship between external funding and partnerships and financial sustainability (r = 0.672**, Sig = 0.000 ≤ 0.01). It was thus concluded that non-tariff revenue streams strategies and external funding and partnerships were crucial for propelling financial sustainability of the NWSC. The study recommended that NWSC Jinja Area should consolidate the revenue streams strategies to establish strong financial sustainability and effective delivery of essential services to the public.

Keywords: ***Revenue streams strategies, Financial Sustainability, non-tariff revenue, external funding and partnerships and Medium-Sized Enterprise***

Introduction and Background

Globally, the concept of revenue streams has gained attraction as a strategy to enhance organizational resilience in public parastatals (Buyego, 2024). Revenue streams refers to expanding an organization's income sources beyond traditional funding to include earned income, investments, and alternative revenue streams strategies like consultancy or service fees (Ochuodho & Ngaba, 2020). In the United States, water parastatals have successfully adopted models such as public-private partnerships, fee-for-service expansions, and ancillary businesses to reduce dependency on subsidies (Anami, 2026; Carroll & Stater, 2009). In Uganda, however, the adoption of such strategies is still evolving, with many public parastatals struggling to balance service delivery objectives with financial viability (Rashid et al., 2021; Karanja & Karuti, 2014).

Financial sustainability, conversely, is an organization's capacity to maintain operations and fulfill its mission over time without sole reliance on external funding (Wekullo & Musoba, 2025; Teixeira & Koryakina, 2021; Bowman, 2011). It is measured through indicators like cost recovery, operational efficiency, capital investment and stake holder engagement through consistent program funding (Sukuku, 2023; Karanja & Karuti, 2014).

For public parastatals like NWSC Jinja Area, this may involve activities such as consultancy services, laboratory testing, septic tank emptying, or public-private partnerships (PPPs). Revenue streams are hypothesized to enhance NWSC Jinja Area's financial sustainability by reducing dependence on volatile donor funds and government subsidies, improving cash flow, and enabling long-term infrastructure planning. For instance, NWSC's consultancy and ancillary services generated contributed UGX 6.1 billion in FY 2023/24, to the company financial base (NWSC, 2024). Despite these potential benefits, NWSC continue to survive under strained financial landscape which has resulted in huge amounts of losses and inefficient service delivery.

Currently, NWSC revenue streams strategies seem unable to sustain the company`s service delivery objectives. This is evidenced from a 2021 Uganda Ministry of Water and Environment report which indicated that over 70% of water sector parastatals cite funding as their primary challenge, making them prone to external shocks like inflation and supply chain disruptions (NWSC, Annual Report, 2022/23). This dependency undermines consistent clean water and sewerage services, threatening infrastructure sustainability, public health, and operational efficiency (Namaliya, 2017). For instance, NWSC's consultancy and ancillary services generated UGX 6.1 billion in FY 2023/24 below the targeted 8 billion shillings, to the company financial base (NWSC, 2024). However, challenges like mission drift where income-generating activities may overshadow core service delivery pose risks (Rashid, et al., 2021; Ebrahim, 2010). High non-revenue water (33.9% in FY 2023/24) and customer arrears further complicate sustainability (NWSC, 2024). The above-mentioned challenges high light the value of strategically designing revenue streams that align with government development and service delivery priorities that will not only increase NWSC revenue but, also increase financial resilience and sustainability. Based on the above, there was a need for the study to be carried out to examine the effectiveness of revenue streams strategies on financial sustainability of public parastatals in Uganda using the case of National Housing and Sewerage Corporation (NWSC).

Main Objective

To evaluate the effect of revenue streams strategies on the financial sustainability of public parastatals in Uganda, using the case of National Water and Sewerage corporation (NWSC).

Specific Objectives

1. To examine the effect of tariff-based revenue optimization on the financial sustainability of NWSC.
2. To assess the effect of non-tariff-based revenue stream strategies on financial sustainability of NWSC.
3. To evaluate the effect of external funding and partnerships on financial sustainability of NWSC.

Literature review

The literature review was based on the three study objectives mentioned above that were conceptualized with the help of both the Resource Dependency and Institutional theories.

Theoretical review

Resource Dependence Theory by Pfeffer & Salancik (1978), posits that organizations rely on external resources such as funding, infrastructure, and legitimacy and must strategically manage these dependencies to survive. For NWSC Jinja Area, this involves navigating relationships with the government, donors (e.g., World Bank, AfDB), and customers. The theory emphasizes diversifying resource portfolios to mitigate risks from overreliance on single sources, such as donor grants or water tariffs, which makes NWSC vulnerable to economic shocks (NWSC, 2024).

Institutional Theory by DiMaggio & Powell (1983), asserts that organizations conform to institutional norms, regulations, and societal expectations to gain legitimacy. For NWSC Jinja Area, coercive pressures (e.g., government regulations), mimetic pressures (adopting successful utility models), and normative pressures (industry standards) shape revenue strategies. Streams aligns with legitimacy-seeking by adopting innovative practices like electronic billing to meet stakeholder expectations (Meyer & Rowan, 1977). However, critics note that Institutional Theory may downplay strategic agency, as NWSC's proactive revenue streams strategies reflects internal decision-making (Scott, 2014). The theory illuminates how NWSC navigates external pressures to ensure financial sustainability while maintaining its public service mandate

Tariff-based revenue streams strategies

Tariff-based revenue optimization involves enhancing the efficiency of tariff collection, adjusting tariff structures for cost recovery, and expanding the customer base to increase revenue from water and sewerage services (Anami, 2026; Mugisha & Berg, 2008). According to Revenue Streams Theory, optimizing primary revenue sources stabilizes income and reduces financial risks from single-source dependency (Carroll & Stater, 2009). In the water sector, effective tariff systems ensure parastatals recover operational and capital costs, supporting long-term sustainability (Sukuku, 2023; Whittington et al., 2015).

Studies on municipal water parastatals, for example, have shown a direct correlation between increasing block tariffs and revenue enhancement (Bhatia, 1999). This tariff structure, where the price per unit increases with consumption, not only generates more revenue from high-volume users but also incentivizes water conservation. Research on public transportation systems echoes this finding, with studies demonstrating that dynamic pricing models, such as charging higher fares during peak hours, can significantly boost revenue without necessarily deterring ridership (Qachora, 2021; Litman, 2017).

In the NWSC context, tariffs remain the primary revenue source, contributing significantly to its financial base. As of FY 2023/24, NWSC serves 943,984 connections across 276 towns, generating UGX 616 billion in billings, with collections reaching UGX 587 billion (95% efficiency) (NWSC, 2024). Strategies like electronic payment systems (e.g., mobile money, EFT, NWSC app) have improved collection efficiency by 30% in some areas, reducing cash-based transaction risks (Okello et al., 2020). However, challenges like network instability and transaction fees limit full optimization in some regions, such as Kabale, where electronic payments showed no significant statistical impact ($p>0.05$) despite strong correlation ($r=1.000$) (Niwagaba et al., 2021).

Non-Tariff based revenue streams strategy

Non-tariff revenue streams strategies are a diverse category of income that public parastatals generate outside of their primary service fees or tariffs (Sukuku, 2023). They are often categorized based on their source and nature. One common classification distinguishes between commercial revenue (e.g., rentals, advertising), financial revenue (e.g., interest income, dividends from investments), and regulatory or administrative fees (e.g., licensing fees, penalties). A primary finding across the literature is that non-tariff revenue streams strategies can significantly enhance the financial sustainability of public parastatals by providing a stable and often growing source of income (Buyego, 2024). This stream reduces the entity's vulnerability to fluctuations in user demand or politically motivated tariff freezes (Sukuku, 2023). While the above is true, the literature also identifies several risks and challenges associated with non-tariff revenue streams strategies (Anami, 2026). Further, one major concern is the potential for mission drift. A public entity's focus might shift from its core mission of providing an essential public service to maximizing commercial profits (Ochuodho &Ngaba 2020). Effective governance and robust regulatory frameworks are crucial for managing the benefits and risks of non-tariff revenue streams strategies. The literature consistently emphasizes that for these revenue sources to contribute to financial sustainability without compromising public mission, they must be subject to clear rules and oversight. A study on certain public universities found that an aggressive pursuit of commercial partnerships and endowments led to a neglect of core academic programs and a widening gap between their financial and educational goals (Gorelick, 2016).

External Funding and partnerships

The financial sustainability of public parastatals is a critical concern, and in an era of fiscal austerity and increasing service demands, reliance on traditional revenue sources like tariffs and taxes is often insufficient (Estache & Gomez-Lobo, 2005). As a result, public parastatals are increasingly turning to external funding (e.g., grants, donations) and

partnerships (e.g., Public-Private Partnerships, corporate social responsibility initiatives) to bridge funding gaps and enhance their long-term financial health. This review of literature explores the multifaceted effects of these alternative funding models on the financial sustainability of public parastatals, highlighting both the significant benefits and the inherent risks.

Grants often support specific initiatives like infrastructure development, technology upgrades, and public health programs, thereby building capacity and strengthening the entity's operational framework (Abubakar et al., 2021). Furthermore, a heavy reliance on a single donor or a small number of grants exposes the entity to significant financial risk if that funding is suddenly withdrawn (Koryakina, 2020; Hung & Hager, 2019). The literature, therefore, advises public parastatals to use grant funding strategically to build long-term, self-sustaining capabilities rather than for covering ongoing operational costs.

The primary benefit of Public-Private Partnerships (PPPs) for public parastatals is the ability to leverage private capital and expertise to undertake large-scale projects that they could not afford on their own (IMF, 2004). This transfers significant financial and operational risks to the private sector, as the private partner is often responsible for cost overruns, construction delays, and maintenance (Wekullo & Musoba, 2020; Investopedia, 2025). However, a key concern highlighted in the literature is the risk of commercialization and mission drift (Wangenege-Ouma & Kupe, 2020; Kapasa & Kilolo, 2026). Correspond, when a public entity accepts corporate funding, it may feel pressured to align its priorities with the corporate partner's interests, which may not always align with the public good (.

While the literature provides context-specific insights, limitations include limited generalizability across regions and sectors due to Uganda's unique socio-economic conditions. Key gaps include insufficient analysis of interactions between multiple revenue streams strategies, lack of comparative cross-regional studies, and limited focus on adapting to dynamic economic shocks, such as donor funding fluctuations. These gaps highlight the need for broader, more comprehensive research to understand how revenue streams strategies can optimize financial sustainability for public parastatals like NWSC Jinja Area.

Findings related to revenue streams strategies in public parastatals in Uganda revealed that very few studies are documented though most find a positive association between revenue streams and financial sustainability. Relatedly, the studies reviewed in regard to non- revenue streams strategies largely were carried out in West Africa, Europe, Asia, Southern Africa, Americas and some parts of East Africa (Kapasa & Kilolo, 2026; Buyego, 2024; Qachora, 2021). On this basis, it was difficult to replicate their findings in the case of Uganda due to contextual factors. Moreover, many studies were found to have been carried out on external finding and partnerships; this was not surprising because Uganda like many developed countries largely depend on donor funding for public service delivery (Wekullo & Musoba, 2020). As such, there was scanty literature on internal funding especially home-grown revenue in developing countries like Uganda. There was therefore need to carry out this study in order to investigate how tariff and non-tariff-based revenue streams influence financial sustainability in public parastatals in Uganda. This study would hence align with the quantitative research approach which is fit for large sample sizes and application of statistical tools for data analysis.

Methodology

A cross-sectional survey design was used to establish the relationship between the variables (revenue streams and financial sustainability). It was preferred because it allowed a large amount of data to be collected over a short time period. Furthermore, since it observed a representative subset at one specific point in time, thereby minimizing problems which would arise from recurrent mistakes in data collection instruments (Nwabuko et al., 2024. This study adopted a quantitative research approach, which involved the generation of data in quantitative form that could be subjected to rigorous quantitative analysis in a formal and rigid fashion (Nwabuko et al., 2024). Using the survey method, self-administered questionnaires were used to collect quantitative data from 46 participants selected through simple random sampling from a population of 50 employees of NWSC Jinja branch. Data quality control was ensured through application of validity and reliability tests. The Correlational and regression analyses were employed to examine data into meaningful statistics to validate the study findings.

Validity

The study utilized triangulation to ensure validity of the findings. Data collection instruments were presented to peers for review and to two Ndejje University lecturers for face and construct validity. The questionnaires were pre-tested with 10 employees of Stabex International possessing similar characteristics with the actual participants. The responses from the 10 employees were used to measure content validity indicated in the table 1 below.

The Content Validity Index (CVI) was calculated as:

$$\text{CVI} = \frac{\text{Number of items rated relevant}}{\text{Total number of all items}} \times 100$$ Therefore, CVI= 0.86

A CVI of 0.7 and above is recommended to be the considered as good content validity that should be acceptable.

Reliability

The study employed the Cronbach`s Alpha to measure internal consistency reliability of the data collection tool and the results are presented in the table 1 below.

Table 1: Reliability Test Statistics

Variables	Number of items	Cronbach's alpha
Tariff-Based Revenue Optimization	9	0.872
Non-Tariff Revenue streams strategies	10	0.870
External Funding and Partnerships	10	0.850
Financial Sustainability	10	0.871
Overall score	**39**	**.791**

The Cronbach alpha value of .791 was achieved which was above 0.7 implied that data under analysis were reliable in accordance to Amin, (2005).

Results and analysis

Correlation and regression analyses were used to establish whether a relationship between revenue streams strategies and financial sustainability existed. The results were obtained with the help of SPSS version 6.0 software as presented below.

Tariff- based revenue optimization

Table 2: Correlation between Tariff-Based Revenue optimization and Financial Sustainability

		Tariff-Based Revenue Optimization	Financial Sustainability
Tariff-Based Revenue Optimization	Pearson Correlation	1	.393**
	Sig. 2-tailed		.007
	N	46	46
Financial Sustainability	Pearson Correlation	.393**	1
	Sig. 2-tailed	.007	
	N	46	46

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

A correlation analysis was conducted where findings in the table above indicate a significant weak positive relationship r=.393**, Sig=0.007 between Tariff-Based Revenue Optimization and Financial Sustainability in National Water and Sewerage Corporation Jinja Area. The results revealed a weak positive correlation of 0.393, which is equivalent to 39.3%. This implies that the more the organization optimizes its revenue through effective tariff strategies, the higher the level of financial sustainability. In other words, any improvement or positive change in tariff-based revenue optimization is likely to lead to a corresponding improvement in financial sustainability within the Jinja Area although with a weak impact.

Table 3: Model Summary of Tariff-Based Revenue Optimization and Financial Sustainability

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.393[a]	.154	.135	.41898

a. Predictors: Constant, Tariff-Based Revenue Optimization

The adjusted R-Square value of 0.135 in the model summary above implies that Tariff-Based Revenue Optimization contributes 13.5% influence on Financial Sustainability, while the remaining 86.5% is influenced by other factors like government policies, operational efficiency, social and economic conditions, and stakeholder engagement among others. This finding underscores the importance of optimizing tariff-based revenue to enhance financial sustainability, as it has the ability to influence the organization`s financial stability. However, this finding reveals that the other factors beyond tariff optimization play a more substantial role in influencing the financial sustainability of NWSC.

Table 3: Model Summary of Tariff-Based Revenue Optimization and Financial Sustainability

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.410	1	1.410	8.033	.007[b]
	Residual	7.724	44	.176		
	Total	9.134	45			

a. Dependent Variable: Financial Sustainability

b. Predictors: Constant, Tariff-Based Revenue Optimization

The regression results indicate that there is a significance value of 0.007, which is less than 0.05. This confirms that there is a significant relationship between Tariff-Based Revenue Optimization and Financial Sustainability, with an F-value of 8.033. Although the F-value is relatively low, it is statistically significant, showing that tariff optimization does have an influence on financial sustainability. However, the residual mean square value is larger compared to the regression mean square, indicating some variability. Therefore, this suggests that while tariff-based revenue optimization contributes to financial sustainability, other factors play a substantial role and should be considered in the organization`s financial related decisions.

Table 5: Coefficients of variation of Tariff-Based Revenue Optimization and Financial Sustainability

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	Constant	2.130	.471			
	Tariff-Based Revenue Optimization	.389	.137	.393	2.834	.007

a. Dependent Variable: Financial Sustainability

Table 5 shows a Beta coefficient value of 0.393, which implies that a unit improvement in Tariff-Based Revenue Optimization leads to an improvement in Financial Sustainability by 0.393. Further, the t-value of 2.834, which is greater than 1.96, indicates that Tariff-Based Revenue Optimization is statistically significant in influencing Financial Sustainability within the National Water and Sewerage Corporation Jinja Area. The coefficient confirms the positive relationship between tariff-based revenue optimization and financial sustainability, showing that a unit change in tariff optimization will result in a corresponding change of 0.393 in financial sustainability (Beta value 0.393). This finding highlights the importance of effective tariff strategies in improving the organization's financial sustainability, although other factors beyond tariffs also contribute to overall financial performance.

Non-tariff-based revenue streams strategies

The study correlated the non-tariff revenue streams strategies with financial sustainability and the results are indicated in the table 6 below.

Table 6: Correlations between non-tariff revenue streams strategies and financial sustainability

		Non-Tariff Revenue streams strategies	Financial Sustainability
Non-Tariff Revenue streams strategies	Pearson Correlation	1	.628**
	Sig. 2-tailed		.000
	N	46	46
Financial Sustainability	Pearson Correlation	.628**	1
	Sig. 2-tailed	.000	
	N	46	46

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

Pearson correlation results, established that there was a strong positive and statistically significant relationship between non-tariff revenue streams strategies and financial sustainability which generated r = 0.628 at p = 0.000, the result was less than the 0.01 significance level. This indicated that non-tariff revenue streams strategies had a significant influence on financial sustainability to that extent that when there is one unit increase in non-tariff revenue streams, the same proportionate increase will be realized in financial sustainability.

Table 7: Model summary on non-tariff revenue streams strategies and financial sustainability

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.628[a]	.394	.380	.35461

a. Predictors: Constant, Non-Tariff Revenue streams strategies

The adjusted R-Square value of 0.380 indicates that the independent variable, non-tariff revenue streams strategies, accounts for 38.0% of the variation in financial sustainability. This suggests that non-tariff revenue streams strategies have a moderate influence on financial sustainability, while the remaining 62.0% of the variation is explained by other factors that were not included in this model.

Table 8: ANOVA[b] values between non-tariff revenue streams strategies and financial sustainability

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.601	1	3.601	28.639	.000[b]
	Residual	5.533	44	.126		
	Total	9.134	45			

a. Dependent Variable: Financial Sustainability
b. Predictors: Constant, Non-Tariff Revenue streams strategies

Non-tariff revenue streams strategies collectively predict financial sustainability at the studied organization (Sig = 0.000, F-value = 28.639). The F-value of 28.639 is statistically significant (Sig at 0.000 ≤ 0.001), showing that the model is a good fit for the data.

Table 9: Coefficients of variations of non-tariff revenue streams strategies and financial sustainability

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	Constant	1.126	.438		2.571	.014
	Non-Tariff Revenue streams strategies	.631	.118	.628	5.352	.000

a. Dependent Variable: Financial Sustainability

A Beta coefficient value of 0.628, which implies that a unit improvement in non-tariff revenue streams strategies leads to the same proportionate improvement in financial sustainability by 0.628. Further, the t-value of 5.352 is greater than 1.96, indicating that non-tariff revenue streams strategies are statistically significant in influencing financial sustainability. This finding suggests that enhancing non-tariff revenue collection mechanisms can meaningfully improve the financial sustainability of NWSC.

External funding and partnerships and financial sustainability

Table 10: Correlation between external funding and partnerships and financial sustainability

		External funding and partnerships	Financial Sustainability
External funding and partnerships	Pearson Correlation	1	.672**
	Sig. 2-tailed		.000
	N	46	46
Financial Sustainability	Pearson Correlation	.672**	1
	Sig. 2-tailed	.000	
	N	46	46

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

A correlation analysis test was run, and the findings in Table 6.2 above indicate a strong positive and significant relationship of r = 0.672 with a significance level (Sig. 2-tailed) = 0.000 ≤ 0.01 between external funding and partnerships and financial sustainability in NWSC. This result implies that as external funding and partnerships improve, financial sustainability also improves in the same positive direction.

Table 11: Model summary on external funding and partnerships and financial sustainability

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.672[a]	.452	.439	.33740

a. Predictors: Constant, external funding and partnerships

The table 11 above reveals that adjusted R-Square value of 0.439 in the model summary implies that external funding and partnerships contributes to 43.9% of the variance in financial sustainability. This suggests that these external support mechanisms play a significant role in determining the financial sustainability at National Water and Sewerage Corporation Jinja Area.

Table 12: ANOVA results on external funding and partnerships and financial sustainability

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.125	1	4.125	36.237	.000[b]
	Residual	5.009	44	.114		
	Total	9.134	45			

a. Dependent Variable: Financial Sustainability
b. Predictors: Constant, external funding and partnerships

According to result in table 12 above, external funding and partnerships significantly predict financial sustainability at National Water and Sewerage Corporation Jinja Area. (Sig = 0.000, F-value = 36.237). The F-value of 36.237 is statistically significant at p < 0.01, indicating a strong predictive relationship.

Table 13: Coefficients of variations of External funding and partnerships and financial sustainability

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	Constant	1.798	.280		6.432	.000
	external funding and partnerships	.487	.081	.672	6.020	.000

a. Dependent Variable: Financial Sustainability

Table 13 above reveals a Beta coefficient value of 0.672, which implies that a unit improvement in external funding and partnerships leads to an increase in financial sustainability by 0.672. This suggests a strong positive relationship between external funding and partnerships and the financial sustainability at National Water and Sewerage Corporation Jinja Area.

Overall Multi-regressions of Revenue Streams and Financial Sustainability

Table 14: Model Summary of Revenue Streams and Financial Sustainability

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.745[a]	.555	.523	.31117

a. Predictors: (Constant), external funding and partnerships, Tariff-Based Revenue Optimization, Non-Tariff Revenue streams strategies

Results in table 14 above indicate that all aspects of revenue streams (external funding and partnerships, tariff-based revenue optimization, and non-tariff revenue streams strategies) reflect 52.3% influence on financial sustainability of NWSC. This implies that the contribution of revenue streams towards financial sustainability is above average. However, the remaining 47.7% is explained by other factors outside the model that require further investigation.

Table 15: ANOVA values of Revenue Streams and Financial Sustainability

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.067	3	1.689	17.446	.000[b]
	Residual	4.067	42	.097		
	Total	9.134	45			

a. Dependent Variable: Financial Sustainability

b. Predictors: (Constant), external funding and partnerships, Tariff-Based Revenue Optimization, Non-Tariff Revenue streams strategies

The regression results in table 15 above indicate an F-value of 17.446 with a p-value of .000 ($p \leq 0.01$), suggesting that the model is statistically significant. This means that revenue streams factors jointly explain variations in financial sustainability among the studied parastatals. The relatively high F-value (17.446) implies that the predictors (external funding and partnerships, tariff-based revenue optimization, and non-tariff revenue streams strategies) strongly influence financial sustainability.

Table 16: Coefficients of Revenue Streams and Financial Sustainability

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.664	.472		1.406	.167
	Tariff-Based Revenue Optimization	.121	.114	.122	1.059	.296
	Non-Tariff Revenue streams strategies	.372	.125	.370	2.969	.005
	External funding and partnerships	.296	.099	.408	2.999	.005

a. Dependent Variable: Financial Sustainability

Findings in table 16 above revealed that external funding and partnerships emerged as the highest contributing and most influential factor of revenue streams strategy towards financial sustainability ($\beta = 0.408$, Sig. = 0.005, $t = 2.999 > 1.96$). This implies that external funding and partnerships have a statistically significant and strong positive effect on financial sustainability.

The second strongest contributor was non-tariff revenue streams strategies ($\beta = 0.370$, Sig. = 0.005, $t = 2.969 > 1.96$). This indicates that streams through non-tariff income sources (such as service charges, investments, or other business activities) significantly enhances financial sustainability.

The above was followed by tariff-based revenue optimization ($\beta = 0.122$, Sig. = 0.296, $t = 1.059 < 1.96$) which was found to have no statistically significant influence on financial sustainability. Although it shows a positive relationship, the effect is weak and not significant at the 5% level.

Discussion of results

The Pearson correlation results ($r = 0.393$, $p = 0.007$) indicated a weak but positive relationship between tariff-based revenue streams and financial sustainability of NWSC, suggesting that any improvements in tariff management strategies are associated with improvements in financial sustainability. However, the modest contribution of 13.5% highlights that tariffs alone cannot guarantee financial sustainability. Other elements such as operational efficiency, infrastructure investment, customer satisfaction, government policy support, and economic stability must complement tariff-based revenue strategies. This particular finding is not isolated as Marginson (2021), agrees that tariff-based revenue streams can propel improved financial sustainability of public parastatals. Similarly, the above finding highlights the importance of optimizing tariffs to enhance financial sustainability, as it has a measurable effect on the organization's ability to maintain stable finances (Chouhdho & Ngaba, 2020). However, the relatively low percentage explaining the variance in financial sustainability indicated that other factors beyond tariff optimization play a more substantial role and therefore should be considered when making financial decisions to enhance sustainability.

The study established that non-tariff revenue streams strategies have a strong positive and statistically significant relationship with financial sustainability ($r = 0.628$, Sig. = $0.000 \leq 0.01$). The regression results in table 6. revealed that non-tariff revenue streams strategies explain 38.0% of the variation in financial sustainability, while the remaining 62.0% is accounted for by other factors not included in the model. Kimathi & Irungu (2024), in their findings agree that non-tariff revenue streams strategies can act as diversified avenues for an organization`s financial well-being. The above findings confirm to the fact that these non-tariff revenue streams have potential to help bridge funding gaps, supporting infrastructure development and long-term investments, which the literature identifies as a key benefit of revenue streams (Eberhard et al., 2008; Litman, 2017). The regulatory frameworks are perceived as reasonably clear, aligning with literature emphasizing the need for rules to balance revenue generation with public accountability (World Bank, 2004; OECD, 2009).

The study revealed that external funding and partnerships are critical drivers of financial sustainability at NWSC Jinja Area. The strong correlation ($r = 0.672$) demonstrates that improved collaborations with development partners and donors positively impact financial stability. Sukuku (2023), concurs with the findings that effective governance, accountability, and integrated systems are vital to improving transparency and efficiency in financial management when external funding is involved. Moreover, the findings aligns with literature advocating for impact-oriented financial management in public parastatals, especially when managing grant-funded projects where social outcomes are often as critical as financial ones (Hung & Hager, 2019). Correspondingly, effective partnerships whether through PPPs, CSR initiatives, or in-kind support can significantly enhance public parastatals' financial capabilities (Alesina et al., 2001), but only when strategic are well-managed. Therefore, study results revealed external grants as contributing positively to financial sustainability, consistent with literature emphasizing that grants enable public parastatals to undertake projects that would otherwise be constrained by budget limitations (Abubakar et al., 2021; Estache & Gomez-Lobo, 2005).

Conclusions and recommendations

NWSC should design tariffs that balance cost recovery with customer affordability to ensure both sustainability and social equity. Diversify Revenue Sources: Since tariff optimization contributes only 13.5% to financial sustainability, the corporation should explore other revenue streams strategies such as non-tariff income, investment in commercial ventures, and donor partnerships.

Enhance Operational Efficiency: Improving efficiency in service delivery,

reducing water losses (non-revenue water), and strengthening billing and collection systems will complement tariff-based revenues. Policy and Regulatory Engagement: NWSC should engage regulators and policymakers to advocate for flexible tariff reviews that reflect operational costs, inflation, and investment needs. Customer Engagement and Transparency: Continuous stakeholder engagement is necessary to build public trust and willingness to pay tariffs. Clear communication about how tariff revenues are utilized can improve compliance and reduce resistance to tariff adjustments. The study concludes that tariff-based revenue optimization is a key driver of financial sustainability at NWSC Jinja Area.

Basing on the findings on objective two; the study therefore emphasizes NWSC Jinja Area should prioritize the development and expansion of non-tariff revenue streams strategies to improve its financial sustainability. This can be achieved through, namely: 1) streams of revenue sources such as consultancy services, sale of by-products, and public–private partnerships; 2) strengthening internal revenue collection mechanisms to reduce leakages and inefficiencies; 3) capacity building and regular training for staff to enhance their ability to manage and innovate around non-tariff revenue opportunities; 4) investment in technology and digital systems to improve transparency, accountability, and efficiency in managing non-tariff revenues; 5) policy support and stakeholder engagement to ensure that non-tariff initiatives are sustainable and aligned with organizational and community needs.

The corporation should avoid over-reliance on external funding by reinforcing internal revenue streams strategies (e.g., tariff optimization, non-tariff revenues) to balance financial risks. Staff training and expertise development should be prioritized to ensure that external resources are effectively utilized, reported, and audited. Regular M&E frameworks should be developed to assess the impact of external funding on service delivery and financial sustainability.

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