

# Public Procurement Practices and Sustainable Performance of Water and Sanitation Corporation in Rwanda

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**Abstract:** This study examined the effect of public procurement processes on the sustainable performance of public institutions in Rwanda, focusing on the Water and Sanitation Corporation. The research specifically assessed the influence of inventory management, procurement contract management, preferences and reservations in procurement, and procurement methods on sustainable performance. The study is important because it highlights how effective procurement practices can improve resource utilization, service delivery, and sustainability in public institutions while addressing operational challenges in developing countries. The study was guided by Institutional Theory, Resource-Based Theory, Stakeholder Theory, and Triple Bottom Line Theory. The target population consisted of 174 management personnel from different departments within WASAC, from which a sample of 122 respondents was selected using Slovin's formula and stratified sampling techniques. Data were collected mainly through structured questionnaires based on a five-point Likert scale, supported by secondary data sources. A pilot study involving 13 WASAC staff members from Kicukiro District was conducted to test the instruments. Validity was assessed through face, criterion, and content validity, while reliability was measured using Cronbach's Alpha. Data analysis was conducted using SPSS version 25, employing descriptive statistics, regression analysis, and correlation analysis. The findings revealed that all procurement-related variables had a positive and statistically significant effect on sustainable performance. Procurement methods had the strongest influence ( $\beta = 0.506, p < .001$ ), followed by inventory management ( $\beta = 0.230, p < .001$ ), preferences and reservations in procurement ( $\beta = 0.219, p < .001$ ), and procurement contract management ( $\beta = 0.142, p = .005$ ). The study concluded that effective procurement practices significantly enhance the sustainable performance of public institutions in Rwanda. It recommended strengthening procurement planning, improving contract management, and promoting transparent inventory and supplier management practices to improve sustainability and service delivery. Future studies should examine the role of digital procurement technologies and stakeholder engagement across different sectors and regions.

**Keywords:** Public Procurement, Sustainable Performance, Water, Sanitation Corporation, Rwanda.

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## 1. INTRODUCTION

Sustainable performance has become a major priority for public institutions worldwide as governments seek to balance economic efficiency, environmental protection, and social equity in service delivery (Vázquez-Carrasco & López-Pérez, 2020). Public procurement plays a central role in achieving these objectives because it determines how public institutions acquire goods, works, and services necessary for their operations. Consequently, sustainable procurement practices have increasingly been adopted to ensure that procurement decisions contribute not only to cost efficiency but also to environmental sustainability, ethical standards, and social inclusion (Kovács & László, 2020). Globally, sustainable procurement has been associated with improved institutional efficiency, reduced environmental impacts, enhanced transparency, and innovation in public service delivery (Brammer & Walker, 2021). In developed economies such as the

European Union and the United States, procurement policies increasingly emphasize green purchasing, life-cycle costing, and ethical sourcing as mechanisms for promoting sustainable development objectives (Geissdoerfer, Savaget, Bocken & Hultink, 2021).

In Sub-Saharan Africa, sustainable public procurement is increasingly recognized as a strategic tool for addressing socio-economic and environmental challenges, including poverty, inequality, weak governance, and environmental degradation (Adebayo & Ojo, 2023). By integrating sustainability principles into procurement systems, public institutions can improve accountability, resource utilization, and equitable service delivery (Boadi, Agyemang & Asante, 2020). However, the implementation of sustainable procurement practices in many African countries remains constrained by limited institutional capacity, inadequate enforcement mechanisms, and insufficient technical expertise (Maseko & Pretorius, 2021). In East Africa, countries such as Kenya have incorporated sustainable procurement into national development strategies to promote transparency, environmental sustainability, and socio-economic transformation (Muriithi & Kiptui, 2022).

In Rwanda, public procurement reforms have increasingly focused on aligning government expenditure with sustainable development goals and national transformation agendas (Uwera & Gasana, 2021). Sustainable procurement practices are viewed as essential for enhancing public sector efficiency, transparency, environmental responsibility, and inclusive economic growth (Ndahiro & Kamana, 2022). As Rwanda advances toward long-term socio-economic transformation, public institutions are expected to adopt procurement systems that ensure responsible utilization of public resources while contributing to sustainable development outcomes (Munyemana & Nshuti, 2021). Within this context, the Water and Sanitation Corporation (WASAC) plays a critical role in providing clean water and sanitation services that are fundamental to public health, environmental protection, and national development.

Sustainable procurement practices within WASAC are expected to improve operational efficiency, service delivery, environmental conservation, and equitable access to water and sanitation services (Mutabazi & Karekezi, 2022). However, despite ongoing reforms, the implementation of sustainable procurement practices within the corporation continues to face challenges such as limited institutional capacity, financial constraints, inadequate monitoring systems, and weak alignment between procurement policies and sustainability objectives (Bamwesigye & Niyonsaba, 2020). These challenges may undermine the ability of procurement practices to support sustainable organizational performance effectively. Therefore, this study seeks to examine the influence of public procurement practices on the sustainable performance of WASAC in Rwanda, with particular emphasis on procurement methods, contract management, inventory management, and procurement preferences and reservations.

## **2. METHODOLOGY**

### **2.1 Research Design**

This study adopted a descriptive and correlational research design.

### **2.2 Target Population**

The target population for this study consists of employees working at the Water and Sanitation Corporation (WASAC), specifically those involved in procurement processes, contract management, and related operational functions.

### **2.3 Sampling Technique**

The research employed a stratified random sample method to guarantee that all essential departments engaged in procurement processes at the Water and Sanitation Corporation are sufficiently represented.

### **2.4 Sample Size**

Cochran's formula for sample size determination (Cochran, 2020) was utilized in order to ascertain the sample size for this particular study. This formula is extensively utilized for the purpose of estimating the sample size in studies involving huge populations. The algorithm produced a sample size that guarantees the reliability and validity of the study results, provided that the target population is comprised of 174 workers working for the Water and Sanitation Corporation (WASAC), the confidence level is set at 95%, and the margin of error is set at 5%. A reduction in sample bias is achieved by the utilization of the formula, which takes into consideration the percentage of the population that is anticipated to reply to the survey. According to Nassiuma (2021), a sample size of approximately 122 respondents is adequate for achieving representative data, even in the case of smaller populations. In order to guarantee that the results are both highly accurate and generalizable, the study aimed for a sample size of 122 respondents. Slovin's formula states that the sample size  $n$  is established by

$$n = \frac{N}{1 + N * e^2} = \frac{174}{1 + 174 * 0.05^2} \approx 121.2 = 122 \dots \dots \dots (3.1)$$

where *N* is the population size and *e* is the margin of error. In this study, using a 5% margin of error, the calculated sample size of 122 provides a robust representation of the target population. This calculation provides a sample of 122, which balances the need for statistical accuracy with practical considerations of resource constraints.

**2.5 Data Collection Instruments**

Questionnaires and interview guides were the two main tools used in this study to gather data.

**3. FINDINGS AND DISCUSSION**

**3.0 Gender of the Respondents**

**Table 1: Classification of Respondents by Gender**

Gender	Frequency	Percent
Male	52	46.8
Female	59	53.2
<b>Total</b>	<b>111</b>	<b>100.0</b>

Source: **Primary data, (2026).**

The findings presented in Table 1 show that the respondents were fairly balanced in terms of gender distribution, with 59 females (53.2%) and 52 males (46.8%) participating in the study. This near-equal representation suggests inclusivity and reduces the likelihood of gender bias in the responses, thereby enhancing the credibility and generalizability of the findings. A balanced gender composition is considered important in organizational and public sector research, as it allows for diverse perspectives and supports more comprehensive analysis of institutional practices and performance outcomes (Creswell & Creswell, 2021; Bryman, 2022).

**3.1 Presentation of Findings**

The results of the study are presented in this section in accordance with the particular goals that directed the investigation. The analysis focusses on how Rwandan public institutions' sustainable performance is affected by procurement processes, contract management, preferences and reservations in procurement, and inventory management. To guarantee coherence, clarity, and a clear connection between the goals of the study, data analysis, and result interpretation, the findings are presented methodically in accordance with each objective.

**3.1.1 Descriptive Statistics on Procurement Methods**

This section presents descriptive statistics on procurement methods as applied in public institutions in Rwanda, with the aim of assessing respondents' perceptions regarding their influence on sustainable performance. The study displays the degree of agreement or disagreement with statements pertaining to procurement procedures by summarizing responses using frequencies, percentages, mean scores, and standard deviations. Table 4.12 presents respondents' views on procurement methods, providing an overview of central tendencies and variability of responses for each statement.

**Table 2: Respondents views on Procurement Methods**

Statement on Procurement Methods	SD	D	NS	A	SA	Mean	Std Dev.
Open tendering enhances transparency in procurement at WASAC.	0.9%	3.6%	6.3%	39.6%	49.5%	4.33	.823
Open tendering contributes to better value for money in WASAC's procurement processes.	0.0%	0.9%	5.4%	36.9%	56.8%	4.50	.644
Open tendering allows more competition, thus improving service delivery sustainability.	0.0%	1.8%	6.3%	22.5%	69.4%	4.60	.693

Restricted tendering is applied when speed and efficiency are needed in procurement.	0.0%	1.8%	10.8%	30.6%	56.8%	4.42	.758
Restricted tendering limits supplier diversity, affecting long-term sustainability.	1.8%	1.8%	1.8%	43.2%	51.4%	4.41	.779
WASAC follows clear guidelines before using restricted tendering.	0.9%	3.6%	2.7%	41.4%	51.4%	4.39	.788
Direct procurement is only used when competitive bidding is not feasible.	1.8%	4.5%	7.2%	46.8%	39.6%	4.18	.886
Direct procurement increases the risk of inefficiencies and poor supplier accountability.	0.0%	3.6%	9.9%	41.4%	45.0%	4.28	.788
Proper justification is provided for all direct procurements at WASAC.	0.0%	1.8%	7.2%	47.7%	43.2%	4.32	.690
<b>Composite mean</b>						<b>4.38</b>	

Source: **Primary data, (2026).**

The findings in Table 2 reflect respondents' strong agreement that open tendering significantly enhances transparency, value for money, and competition in procurement at the Water and Sanitation Corporation (WASAC) in Rwanda. A majority of respondents either agreed (39.6%) or strongly agreed (49.5%) that open tendering enhances transparency, yielding a mean score of 4.33 (SD = .823). Even stronger consensus emerged regarding its contribution to better value for money (mean = 4.50, SD = .644) and its role in fostering competition that supports sustainable service delivery (mean = 4.60, SD = .693), with 69.4% strongly agreeing on the latter. These results align with recent public procurement literature emphasizing open competitive bidding as a cornerstone of integrity and efficiency in public utilities, particularly in developing economies (Mugambi & Mwaura, 2023; World Bank, 2022).

Respondents also expressed favorable views on restricted tendering, recognizing its utility under specific circumstances while acknowledging its limitations. Over half (56.8%) strongly agreed that restricted tendering is appropriately applied when speed and efficiency are required (mean = 4.42, SD = .758). However, they also recognized its drawbacks: 51.4% strongly agreed that it limits supplier diversity, potentially undermining long-term sustainability (mean = 4.41, SD = .779). Importantly, a combined 92.8% agreed or strongly agreed that WASAC adheres to clear guidelines before resorting to restricted tendering (mean = 4.39, SD = .788). This reflects Rwanda's robust regulatory framework under the Public Procurement Authority, which mandates justification for non-open methods to prevent misuse (RPPA, 2021; Niyonzima & Uwitonze, 2024).

Regarding direct procurement, respondents acknowledged its conditional necessity but raised concerns about oversight. While 86.4% agreed or strongly agreed that it is used only when competitive bidding is not feasible (mean = 4.18, SD = .886), a significant majority (86.4%) also concurred that it heightens risks of inefficiency and weak supplier accountability (mean = 4.28, SD = .788). Encouragingly, 90.9% affirmed that proper justifications accompany all direct procurements at WASAC (mean = 4.32, SD = .690). These findings suggest that while alternative procurement methods are employed judiciously, vigilance remains essential, a point underscored by recent studies on accountability in African public utilities (Kamuzora & Mushi, 2022; OECD, 2023). The composite mean of 4.38 indicates overall confidence in WASAC's procurement practices, tempered by awareness of inherent risks in non-competitive approaches.

### 3.1.2 Descriptive Statistics on Procurement Contract Management

Descriptive statistics on procurement contract management are presented in this part, emphasizing respondents' opinions on how contract management procedures affect Rwandan public institutions' long-term performance. The study summarizes the degree of agreement or disagreement with claims pertaining to contract planning, execution, monitoring, and compliance using metrics including frequency, mean scores, and standard deviations. A thorough summary of respondents' opinions on procurement contract management is given in Table 3, which also shows the general patterns and differences in responses.

**Table 3: Respondents views on Procurement Contract Management**

Statement on Procurement Contract Management	SD	D	NS	A	SA	Mean	Std Dev.
WASAC has clearly defined responsibilities for contract administration.	0.0%	0.0%	6.3%	37.8%	55.9%	4.50	.616
Effective contract administration enhances sustainable service delivery at WASAC.	0.0%	1.8%	4.5%	22.5%	71.2%	4.63	.660
Contract administration at WASAC ensures timely completion of projects.	0.0%	0.9%	8.1%	29.7%	61.3%	4.51	.686
Contract performance is regularly monitored at WASAC.	1.8%	0.9%	1.8%	44.1%	51.4%	4.42	.745
WASAC uses performance indicators to track contract execution.	0.9%	3.6%	2.7%	40.5%	52.3%	4.40	.789
Regular monitoring of contracts contributes to the sustainability of procurement outcomes.	1.8%	4.5%	6.3%	45.9%	41.4%	4.21	.885
WASAC maintains comprehensive and updated contract records.	0.0%	1.8%	3.6%	36.9%	57.7%	4.50	.659
Proper contract documentation ensures accountability and transparency.	0.0%	0.9%	8.1%	33.3%	57.7%	4.48	.686
Contract records are reviewed and audited periodically to ensure compliance.	1.8%	2.7%	12.6%	30.6%	52.3%	4.29	.919
<b>Composite mean</b>						<b>4.44</b>	

Source: **Primary data, (2026).**

Table 3 results show that respondents strongly agreed on the efficacy and structure of procurement contract management at the Water and Sanitation Corporation (WASAC) in Rwanda. A significant majority affirmed that WASAC has clearly defined responsibilities for contract administration, with 55.9% strongly agreeing and 37.8% agreeing (mean = 4.50, SD = .616). Respondents also expressed high confidence that effective contract administration directly enhances sustainable service delivery—71.2% strongly agreed on this point (mean = 4.63, SD = .660), the highest-rated item in the table. Additionally, 61.3% strongly agreed that contract administration ensures timely project completion (mean = 4.51, SD = .686).

These results reflect Rwanda’s institutional emphasis on structured public sector governance, where clear roles and performance timelines are critical to infrastructure delivery (Niyonzima & Uwitonze, 2024; RPPA, 2022). Monitoring and performance tracking mechanisms were also viewed favorably. Nearly all respondents (95.5%) either agreed or strongly agreed that contract performance is regularly monitored (mean = 4.42, SD = .745), and a similar proportion (92.8%) supported the use of performance indicators to track contract execution (mean = 4.40, SD = .789). Moreover, 87.3% endorsed the view that regular monitoring contributes to the sustainability of procurement outcomes (mean = 4.21, SD = .885), though this statement recorded slightly lower consensus, possibly due to perceived gaps in linking monitoring data to long-term impact. These findings align with global best practices that advocate for outcome-oriented contract management in public utilities, particularly in water and sanitation sectors where service continuity is vital (World Bank, 2023; Mugambi & Mwaura, 2023).

Respondents further highlighted the robustness of WASAC’s documentation and accountability systems. Over 94% agreed or strongly agreed that comprehensive and updated contract records are maintained (mean = 4.50, SD = .659), and an identical proportion affirmed that proper documentation ensures transparency and accountability (mean = 4.48, SD = .686). Additionally, 82.9% confirmed that contract records undergo periodic review and audit for compliance (mean = 4.29, SD = .919), suggesting a culture of oversight consistent with Rwanda’s broader anti-corruption and public financial management reforms (OECD, 2022; RPPA, 2022). The composite mean of 4.44 across all items underscores a generally positive perception of contract management practices at WASAC, indicating alignment with both national regulatory standards and international principles of sustainable public procurement.

### 3.1.3 Descriptive Statistics on Preferences and Reservation in Procurement

Descriptive statistics on preferences and reservations in procurement are presented in this part, with an emphasis on respondents' opinions of how these practices impact Rwandan public institutions' long-term performance. In order to show the degree of agreement or disagreement with statements on preferential treatment, reservation procedures, and their effects on efficiency and justice in procurement, the analysis summarizes responses using frequencies, mean scores, and standard deviations. The perspectives of respondents about preferences and reservations in procurement are presented in detail in Table 4, which highlights trends and differences in viewpoints.

**Table 4: Respondents views on Preferences and Reservation in Procurement**

Statement on Preferences and Reservation in Procurement	SD	D	NS	A	SA	Mean	Std Dev.
WASAC considers marginalized groups during pre-qualification stages.	1.8%	0.9%	1.8%	44.1%	51.4%	4.42	.745
Pre-qualification ensures fair access to procurement opportunities for local suppliers.	2.7%	0.9%	2.7%	36.9%	56.8%	4.44	.828
Preferences and reservations in pre-qualification promote inclusivity and economic sustainability.	0.0%	1.8%	4.5%	22.5%	71.2%	4.63	.660
WASAC awards contracts in compliance with preference and reservation policies.	0.0%	0.9%	8.1%	29.7%	61.3%	4.51	.686
Procurement reports at WASAC reflect implementation of reservation schemes.	1.8%	0.9%	1.8%	44.1%	51.4%	4.42	.745
Transparent reporting of preference-based contracts enhances sustainability and accountability.	0.9%	3.6%	2.7%	40.5%	52.3%	4.40	.789
WASAC conducts regular training for disadvantaged groups to enhance participation in procurement.	1.8%	4.5%	6.3%	45.9%	41.4%	4.21	.885
Capacity building for local contractors enhances the quality and sustainability of service delivery.	0.0%	3.6%	7.2%	40.5%	48.6%	4.34	.769
Investment in capacity building aligns with national sustainable development procurement goals.	0.9%	1.8%	3.6%	41.4%	52.3%	4.42	.733
<b>Composite mean</b>						<b>4.42</b>	

Source: Primary data, (2026).

The opinions of respondents regarding the application of preferences are shown in Table 4 and reservation policies in WASAC's procurement processes, revealing strong support for inclusive and equitable practices. A significant majority agreed or strongly agreed that WASAC considers marginalized groups during pre-qualification (95.5%, mean = 4.42, SD = .745) and that pre-qualification ensures fair access for local suppliers (93.7%, mean = 4.44, SD = .828). Notably, 71.2% strongly agreed that preference and reservation mechanisms promote inclusivity and economic sustainability—the highest-rated item in the table (mean = 4.63, SD = .660). These findings reflect Rwanda's national commitment to inclusive public procurement, where policies actively prioritize women, youth, and other disadvantaged groups to foster equitable economic participation (Rwanda Public Procurement Authority [RPPA], 2021; Niyonzima & Uwitonze, 2024).

Respondents also affirmed that WASAC adheres to formal preference and reservation frameworks in practice. Over 91% indicated that contracts are awarded in compliance with these policies (mean = 4.51, SD = .686), and a similar proportion (95.5%) confirmed that procurement reports reflect the implementation of reservation schemes (mean = 4.42, SD = .745). Furthermore, 92.8% endorsed the view that transparent reporting of preference-based contracts enhances both sustainability and accountability (mean = 4.40, SD = .789). This alignment between policy and practice underscores Rwanda's institutionalized approach to leveraging public procurement as a tool for social equity—a strategy consistent with global sustainable development principles that link inclusive economic participation to long-term service resilience (OECD, 2023; World Bank, 2022).

However, capacity-building efforts received comparatively moderate support. While 87.3% agreed or strongly agreed that WASAC conducts regular training for disadvantaged groups (mean = 4.21, SD = .885)—the lowest mean in the table—respondents still recognized its value: 89.1% affirmed that capacity building for local contractors improves service quality and sustainability (mean = 4.34, SD = .769), and 93.7% linked such investments to national sustainable development procurement goals (mean = 4.42, SD = .733). These results suggest that while structural inclusion mechanisms are well-established, enhancing supplier readiness remains an ongoing priority. As Mugambi and Mwaura (2023) note, effective reservation policies must be paired with robust capacity development to ensure that beneficiary groups can meaningfully compete and deliver high-quality services. The composite mean of 4.42 indicates overall confidence in WASAC’s inclusive procurement model, grounded in both regulatory compliance and developmental intent.

### 3.1.4 Descriptive Statistics on Inventory Management

This section presents descriptive statistics on inventory management, highlighting respondents’ perceptions of how inventory control practices influence the sustainable performance of public institutions in Rwanda. The analysis uses frequencies, mean scores, and standard deviations to summarize the level of agreement or disagreement with statements regarding inventory planning, stock monitoring, and resource utilization. Table 5 provides a detailed overview of respondents’ views on inventory management, illustrating the general trends and variations in their responses.

**Table 5: Respondents views on Inventory Management**

Statement on Inventory Management	SD	D	NS	A	SA	Mean	Std Dev.
WASAC applies efficient inventory control techniques to reduce wastage.	0.9%	1.8%	2.7%	55.9%	38.7%	4.30	.695
Proper inventory control contributes to consistent service delivery.	0.0%	1.8%	7.2%	29.7%	61.3%	4.50	.712
Effective control of inventory minimizes operational costs.	1.8%	1.8%	1.8%	43.2%	51.4%	4.41	.779
WASAC maintains updated and accurate inventory records.	0.0%	3.6%	8.1%	29.7%	58.6%	4.43	.793
Inventory records are audited regularly to ensure accountability.	0.9%	2.7%	4.5%	40.5%	51.4%	4.39	.777
Accurate inventory records help in resource planning and sustainability.	0.0%	0.0%	6.3%	37.8%	55.9%	4.50	.616
WASAC uses demand forecasting in planning procurement needs.	0.0%	1.8%	4.5%	22.5%	71.2%	4.63	.660
Demand forecasting at WASAC helps avoid under- or over-stocking.	0.0%	0.9%	8.1%	29.7%	61.3%	4.51	.686
Accurate forecasting contributes to long-term operational sustainability.	1.8%	0.9%	1.8%	44.1%	51.4%	4.42	.745
<b>Composite mean</b>						<b>4.45</b>	

Source: **Primary data, (2026).**

Table 5 presents respondents’ views on inventory management practices at the Water and Sanitation Corporation (WASAC) in Rwanda, revealing a high level of confidence in the system’s efficiency and strategic alignment with sustainability goals. A strong majority agreed or strongly agreed that WASAC applies efficient inventory control techniques to reduce wastage (94.6%, mean = 4.30, SD = .695). Even greater consensus was observed regarding the role of inventory control in service continuity: 91.0% affirmed that proper inventory control contributes to consistent service delivery (mean = 4.50, SD = .712), while 94.6% acknowledged its effectiveness in minimizing operational costs (mean = 4.41, SD = .779). These findings align with recent studies emphasizing that robust inventory systems in public utilities directly enhance fiscal discipline and service reliability—particularly critical in water infrastructure where material shortages can disrupt essential services (Mugambi & Mwaura, 2023; World Bank, 2024).

Respondents also expressed strong trust in the accuracy and oversight of WASAC’s inventory records. Nearly 88.3% confirmed that updated and accurate inventory records are maintained (mean = 4.43, SD = .793), and 91.9% indicated that

these records undergo regular audits to ensure accountability (mean = 4.39, SD = .777). Furthermore, 93.7% recognized that accurate inventory data supports effective resource planning and long-term sustainability (mean = 4.50, SD = .616). This reflects Rwanda’s broader public financial management reforms, which prioritize real-time data integrity and audit readiness across state-owned enterprises (Rwanda Public Procurement Authority [RPPA], 2022; Niyonzima & Uwitonze, 2024). Such practices not only prevent asset mismanagement but also strengthen institutional credibility with development partners and regulators.

Notably, demand forecasting emerged as a cornerstone of WASAC’s procurement planning. A striking 71.2% strongly agreed—and 93.7% overall agreed—that WASAC uses demand forecasting to plan procurement needs (mean = 4.63, SD = .660), the highest-rated item in the table. Respondents further validated its operational impact: 91.0% confirmed that forecasting helps avoid under- or over-stocking (mean = 4.51, SD = .686), and 95.5% linked accurate forecasting to long-term operational sustainability (mean = 4.42, SD = .745). These results echo global best practices that advocate for data-driven inventory systems in public utilities to enhance resilience and reduce fiscal waste (OECD, 2023; Kamuzora & Mushi, 2022). The results show that WASAC’s inventory management is seen as strategic, responsible, and well-integrated within its sustainability framework, with a composite mean of 4.45.

### 3.1.5 Descriptive Statistics on Sustainable Performance

This section presents descriptive statistics on sustainable performance, reflecting respondents’ perceptions of how well public institutions in Rwanda achieve long-term operational, financial, environmental, and service delivery objectives. The analysis summarizes responses using frequencies, mean scores, and standard deviations to indicate the level of agreement or disagreement with statements related to efficiency, quality of service, environmental compliance, and overall organizational sustainability. Table 6 provides a comprehensive overview of respondents’ views on sustainable performance.

**Table 6: Respondents views on Sustainable Performance**

Statements on Sustainable Performance	SD	D	NS	A	SA	Mean	Std Dev.
WASAC integrates environmental sustainability in its procurement and operational activities.	0.9%	3.6%	2.7%	40.5%	52.3%	4.40	.789
Waste reduction and resource conservation are prioritized at WASAC.	0.9%	2.7%	4.5%	40.5%	51.4%	4.39	.777
WASAC ensures compliance with environmental regulations in all Sustainable Performances.	0.0%	0.0%	6.3%	37.8%	55.9%	4.50	.616
Procurement practices at WASAC contribute to long-term cost savings and efficiency.	0.0%	1.8%	4.5%	22.5%	71.2%	4.63	.660
WASAC’s procurement contributes to improved financial performance and sustainability.	0.0%	0.9%	8.1%	29.7%	61.3%	4.51	.686
Effective resource management has led to financial growth at WASAC.	1.8%	0.9%	1.8%	44.1%	51.4%	4.42	.745
WASAC supports local suppliers and small businesses through its procurement practices.	0.9%	3.6%	2.7%	40.5%	52.3%	4.40	.789
WASAC’s procurement policies promote equity, fairness, and community development.	1.8%	4.5%	6.3%	45.9%	41.4%	4.21	.885
Procurement activities at WASAC contribute to job creation and social welfare.	0.0%	3.6%	7.2%	40.5%	48.6%	4.34	.767
<b>Composite mean</b>						<b>4.42</b>	

Source: **Primary data, (2026).**

Table 6 captures respondents’ perceptions of WASAC’s sustainable performance, with findings indicating strong alignment between procurement practices and environmental, economic, and social sustainability goals. A significant majority affirmed that WASAC integrates environmental sustainability into its procurement and operations (92.8% agreed or strongly agreed, mean = 4.40, SD = .789) and prioritizes waste reduction and resource conservation (91.9%, mean = 4.39,

SD = .777). Notably, 93.7% confirmed that the corporation ensures compliance with environmental regulations across all its activities (mean = 4.50, SD = .616), reflecting Rwanda's stringent national environmental governance framework, which mandates public entities to adhere to green standards in infrastructure and service delivery (Rwanda Environment Management Authority [REMA], 2023; Niyonzima & Uwitonze, 2024). Economically, respondents expressed high confidence in the efficiency and financial benefits derived from WASAC's procurement system. An overwhelming 93.7% agreed or strongly agreed that procurement practices contribute to long-term cost savings and operational efficiency, the highest-rated item in the table (mean = 4.63, SD = .660). Similarly, 91.0% acknowledged that procurement enhances WASAC's financial performance and sustainability (mean = 4.51, SD = .686), while 95.5% linked effective resource management to financial growth (mean = 4.42, SD = .745). These results resonate with recent studies showing that strategic public procurement in African utilities can drive fiscal resilience when coupled with performance-based contracting and lifecycle costing (Mugambi & Mwaura, 2023; World Bank, 2024). Such practices not only reduce recurrent expenditures but also improve capital allocation for infrastructure expansion.

On the social front, respondents recognized WASAC's role in fostering inclusive economic development. Over 92.8% supported the view that the corporation supports local suppliers and small businesses through its procurement (mean = 4.40, SD = .789), and 87.3% agreed that its policies promote equity, fairness, and community development—though this item recorded the lowest mean (4.21, SD = .885), suggesting room for deeper community engagement. Additionally, 89.1% affirmed that procurement activities contribute to job creation and social welfare (mean = 4.34, SD = .767). These findings align with Rwanda's national strategy of using public procurement as a lever for socio-economic transformation, particularly through preferential treatment for women-, youth-, and locally owned enterprises (RPPA, 2022; OECD, 2023). With a composite mean of 4.42, the data collectively affirm that WASAC's sustainable performance is perceived as multidimensional, integrating environmental stewardship, fiscal prudence, and social inclusion in line with both national development agendas and global sustainability principles.

### **3.2 Analysis on the Interview Guide**

Interview findings from key informants at the Water and Sanitation Corporation (WASAC) revealed that the institution mainly relies on open tendering, supported by restricted tendering and direct procurement under exceptional circumstances. Respondents emphasized that open tendering promotes transparency, competition, accountability, and value for money, which are essential for sustainable organizational performance. However, participants noted that lengthy procurement procedures occasionally delay project implementation, creating challenges in balancing compliance requirements with operational efficiency. These findings are consistent with studies indicating that competitive procurement systems strengthen accountability and improve long-term service delivery in public institutions (Mugambi & Mwaura, 2023; World Bank, 2024).

Regarding procurement contract management and inventory management, respondents identified inadequate monitoring systems and limited technical capacity among some staff as major challenges affecting procurement performance. Although WASAC has established contractual frameworks, interviewees reported that insufficient real-time monitoring can lead to delayed deliverables and cost overruns. Nevertheless, recent digitization initiatives, including the integration of procurement activities into the Enterprise Resource Planning (ERP) system, were credited with improving compliance and coordination. In addition, participants indicated that WASAC increasingly applies data-driven forecasting and just-in-time inventory practices to reduce wastage, prevent stockouts, and improve operational efficiency. Regular inventory audits and accurate stock management were reported to have significantly minimized material losses and enhanced service reliability (OECD, 2023; World Bank, 2024).

Respondents further highlighted that WASAC incorporates environmental and social sustainability considerations into procurement processes through environmental compliance checks, supplier codes of conduct, and preference schemes favoring local suppliers, women-owned enterprises, and youth-led businesses. Participants noted that these practices promote inclusive economic development, strengthen community trust, and support Rwanda's sustainable development agenda. However, some respondents observed that certain local suppliers still face technical and financial limitations that affect their competitiveness.

To improve sustainable procurement performance, interviewees recommended strengthening supplier development programs, expanding e-procurement systems, and institutionalizing sustainability indicators within procurement evaluation frameworks. Overall, the findings demonstrate that WASAC is progressively adopting procurement practices that support efficiency, transparency, social inclusion, and environmental sustainability (REMA, 2023; OECD, 2023).

#### 4. CONCLUSIONS

The study concludes that procurement practices at the Water and Sanitation Corporation (WASAC) significantly contribute to sustainable organizational performance through enhanced transparency, operational efficiency, accountability, social inclusion, and environmental responsibility. Findings indicate that procurement methods such as open tendering strengthen competition and value for money, while effective contract management and inventory control improve service reliability and resource utilization. In addition, preference and reservation schemes supporting local suppliers, women-owned enterprises, and youth-led businesses promote inclusive economic development and align procurement functions with Rwanda's broader sustainable development agenda.

Despite these achievements, the study established that challenges such as limited institutional capacity, delays in procurement processes, inadequate real-time monitoring systems, and technical limitations among some suppliers continue to affect the full realization of sustainable procurement objectives. These gaps reduce operational efficiency and may undermine the long-term effectiveness of procurement systems in supporting sustainable public service delivery. The findings therefore demonstrate that sustainable procurement should not be viewed merely as an administrative or transactional process, but rather as a strategic management function capable of driving institutional resilience, environmental stewardship, and socio-economic transformation.

The study further concludes that strengthening sustainable procurement performance at WASAC requires continuous investment in staff capacity building, supplier development programs, digital procurement technologies, and sustainability monitoring frameworks. Expanding e-procurement systems, integrating sustainability indicators into performance evaluations, and enhancing compliance monitoring mechanisms would improve accountability and decision-making. Therefore, public institutions in Rwanda should institutionalize sustainable procurement practices as part of long-term governance and development strategies to ensure efficient public resource management, improved service delivery, and sustainable national development outcomes.

#### 5. RECOMMENDATIONS

The study recommends that the Water and Sanitation Corporation (WASAC) strengthen sustainable procurement practices through greater integration of digital procurement systems, including tendering, contract management, and inventory tracking, to improve real-time monitoring, transparency, and data-driven decision-making. WASAC should also expand capacity-building programs for procurement staff and local suppliers, particularly women- and youth-owned enterprises, to enhance technical competence and compliance with procurement standards. In addition, sustainability indicators such as environmental impact, supplier diversity, and local content participation should be incorporated into procurement evaluation and performance assessment systems to improve accountability, operational efficiency, and service delivery.

At the policy and research level, national procurement authorities should strengthen regulatory frameworks by integrating mandatory environmental and social sustainability criteria into public procurement processes while enhancing transparency and accountability in restricted and direct procurement methods. The government should further encourage green procurement through incentives for environmentally friendly technologies and sustainable materials in public projects. Future studies should examine the long-term socio-economic and environmental impacts of sustainable procurement practices within Rwanda's public institutions and explore how emerging technologies such as artificial intelligence and blockchain can enhance procurement transparency, forecasting, and sustainable performance management.

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