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GATSINZI Gisa Jean de Dieu & Prof. Madichie Nnamdi

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Effect of Procurement Contract Management on Performance of Public Institutions in Rwanda. A Case of Gicumbi District-Rwanda

GATSINZI Gisa Jean de Dieu¹ & Prof. Madichie Nnamdi²

¹ Master of Business Administration in Procurement and Supply Chain Management,
University of Kigali, Rwanda

² Senior Lecturer, University of Kigali, Rwanda

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Abstract

The general objective of this research was to evaluate the effect of procurement contract management on performance of Gicumbi District. The study aimed to evaluate the effect of procurement contract planning, negotiation and execution on the performance of Gicumbi District. The population of this study was 127 staff of Gicumbi District. The study used a census inquiry method instead of sampling. This decision is based on the small size of the target population. The following instruments were utilized to gather data for the research: The researcher relied on document analysis, questionnaires, and interviews to collect data. The statistical analysis of the collected data was conducted using Statistical Package for Social Sciences (SPSS) which is a widely used tool for statistical computation in research. The researcher employed descriptive and correlational analysis in this approach. Descriptive and correlational research design were used. The coefficient for procurement contract planning is 0.237, indicating that for each unit increase in procurement contract planning, the performance of public institutions is expected to increase by 0.237, and this relationship is statistically significant ($\beta = 0.237$, Sig. = 0.000). This demonstrates that effective planning significantly enhances institutional performance. The procurement contract negotiation coefficient is 0.201, indicating a similar effect; a one-unit increase in effective negotiation is associated with an increase in performance of 0.201, and it is also statistically significant ($\beta = 0.201$, Sig. = 0.003). Additionally, the coefficient for procurement contract execution is 0.559, indicating that effective execution contributes substantially to performance ($\beta = 0.559$, Sig. = 0.003). The study recommends that Gicumbi District should enhance the capacity of its procurement personnel through targeted training, implement standardized templates for contract planning and adopt a collaborative negotiation framework.

1. Introduction

A contract is essentially an agreement where two or more parties commit to exchanging something valuable in Addis Ababa (Teferi, 2022). Njoki *et al.* (2021) looked at how contract management affected the efficiency of Kenyan state-owned companies. According to the study's findings, Contract Management is an essential component of public procurement processes since it guarantees openness, responsibility, and equitable management of contracts across government entities. Research in Kenya indicated that state businesses' performance was substantially affected by Contract Management, particularly by tasks like monitoring, documentation, and administration of contracts.

Similarly, Matto *et al.* (2021) looked into how contract management affected value-for-money procurement in Tanzania. According to the research, public procurement in Tanzania might be more cost-effective with well-managed contracts. Significant drivers of value for money were identified as key aspects such as contract structuring and quality control. There was no substantial relationship between value for money and characteristics such as contract management, time control, or cost control.

In research carried out by Dusabimana (2022) in Musanze District, the performance of procurement and disposal bodies within the Rwandan local government was examined in relation to contract management. According to the research, the success of entities involved in purchasing and selling depends on efficient contract administration. Similarly, Jolly (2022) conducted research on the effect of Contract Management Practices on Procurement Performance, demonstrating that procurement performance in Nyarugenge District was influenced by contract management practices.

Uwiringiyimana and Dushimimana (2024) investigated the impact of procurement contract management techniques on the operational efficiency of public institutions in Rwanda. This study included descriptive and correlation analysis as its main research methodologies. Descriptive research was employed to provide a detailed account of the participants' demographic information. Furthermore, a correlational analysis was conducted. A correlation analysis was conducted by the researcher to establish the connection between contract management and the functioning of public organizations. Due to the small size of the community being studied, the researcher has opted to employ a census inquiry method instead of sampling. The study included documentary sources, interviews, and questionnaires as data collection tools. The researcher employed SPSS to calculate descriptive statistics, including frequency distributions, percentages, means, and correlations. IPRC Musanze should improve its performance by enhancing its contract cycles, execution, relationships, and monitoring, with a specific focus on sustainability and integrating technology.

Songa and Akumuntu (2024) investigated the relationship between contract management techniques and public procurement performance at MINEDUC in Rwanda. The data show that the effectiveness of contract negotiation, contract execution, and contract monitoring and assessment, all with a success rate of less than 10%, determines the long-term performance of public procurement in MINEDUC. Conducting a basic regression analysis to determine the impact of each component on the performance of public procurement in MINEDUC. Based on the research findings, there is a strong positive correlation of 0.952 (95.2%), which falls within the interval of [0.75–1.00]. This correlation is classified as extremely high. This confirms the existence of a substantial correlation between contract management techniques and public procurement performance in MINEDUC. The study recommended to foster a culture of continuous improvement within the procurement department at MINEDUC.

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2. Literature review

Hassan and Omwenga (2023) performed a study on contract management and procurement efficacy of state corporations in Kenya. The research utilized a cross-sectional design. The study sample comprised 157 individuals employed by one of the four state corporations in Kenya, namely within the departments of management/vote holders, procurement, finance and accounting, or ICT. A sample size of 113 was calculated utilizing the sample size methods established by Yamane in 1967. The sample approximately reflects the proportion of the specified criterion in the research population, owing to the application of the stratified random sampling method. The primary data was obtained using a questionnaire. The instrument's reliability was evaluated by pilot testing, employing the Cronbach Alpha Reliability Coefficient. The reliability of the research instrument was assessed at 0.839, a figure that is within the acceptable range. The inquiry utilized both descriptive and inferential statistics. The statistical analysis utilized the Pearson correlation coefficient and multiple linear regression analysis with a significance level of 0.05. The Statistical Package for the Social Sciences, version 26, was used for the data analysis. Administration, dispute resolution, relationship management, monitoring, and evaluation of contracts were found to be positively associated with procurement performance in a statistically significant way.

Ampumuza *et al.* (2020) conducted a study examining the influence of contract life cycle management on procurement performance of Local Governments in Uganda, using Bugiri District as the case study. The researcher employed a descriptive case study research design. Using a researcher-made five-point Likert scale questionnaire, data was collected from a sample of respondents. The response rate was 94.3%, with 70 out of 80 respondents chosen using purposive and random selection approaches. Means and regression analysis were used to analyze the data. The results showed that there was a moderate relationship between contract analysis and procurement performance ($r^2 = 0.44$, Sig. Value = 0.001), a low relationship between contract execution and performance ($r^2 = 0.34$, Sig. Value = 0.003), and a low relationship between contract creation and performance ($r^2 = 0.36$, Sig. Value = 0.000). Conversely, research showed that contract management had a significant and beneficial effect on procurement performance in Uganda's Bugiri District ($R^2 = 0.779$, Sig. Value = 0.000). Treating the three factors of contract formation, execution, and analysis independently does not affect procurement performance. The results show that holistic management can achieve high procurement performance (78%). The researcher has come to the conclusion that practitioners, managers, and civil officials in Bugiri District should embrace a comprehensive approach to contract management in order to maximize procurement performance.

2.1 Principal-Agent Theory

American economists Michael Jensen and William Meckling first proposed the principal-agent issue in 1976. Public sector performance may be enhanced by the execution of incentive-based contracts among diverse players, according to the principal-agent theory of enterprises (Meckling & Jensen, 1976; Cheffins, 2021). The field of public administration and policy has been profoundly influenced by agency theory since its start in the 1970s. It was a driving force behind often-dramatic changes to the public sector in many industrialized nations with high incomes in the 1980s and 1990s. Its influence is still felt today in many government agencies (Mitnick, 2019).

Salim *et al.* (2022) stated that principal-agent problem arises when there is a separation between ownership and control, leading to potential conflicts of interest between parties. In public administration, this situation may occur between elected officials (principals) and bureaucrats or public servants (agents). Elected officials may seek to implement policies that align with their electoral promises, while agents may prioritize their job security, personal objectives, or

institutional norms. This misalignment can result in inefficiencies, inadequate service delivery, and a lack of accountability.

To address the principal-agent problem, incentive-based contracts have proved beneficial for aligning the motivations of agents with the goals of principals. For instance, bonuses for achieving specific performance targets can motivate agents to excel in their duties. However, implementing these contracts is not without challenges. Designing effective incentive systems requires careful consideration of measurable outcomes, as well as the potential for unintended consequences. Overemphasis on quantifiable results may incentivize agents to prioritize short-term goals or manipulate data to appear more successful than they are. Additionally, the complexity of government operations can make it difficult to measure performance accurately (Zhang et al., 2024).

Moreover, transparency plays a crucial role in mitigating the principal-agent problem. By enhancing information flow between principals and agents, public institutions can reduce information asymmetry and foster trust. Regular audits, public reporting, and stakeholder engagement initiatives can empower citizens to hold agents accountable for their actions. Ultimately, while Principal-Agent Theory provides valuable insights into the dynamics of public sector performance, its practical application must be approached thoughtfully. Balancing incentives with ethical considerations and a focus on long-term goals is essential for creating an efficient, effective, and accountable public sector that serves the interests of society as a whole (Nwajei *et al.*, 2022).

Principal-Agent Theory declares governments and contractors should share the same goals. In Gicumbi District, Rwanda, it helped to see if public institutions stick to their agreements with contractors. This showed how well both sides work together and how it affects how well things are done.

3. Research methodology

Research design

A research design is the overarching methodological framework for a study. It specifies how the data gathered and analyzed, as well as how inferences and conclusions were reached. There is no way to do research without first developing a plan, and this is where the study design comes in. Descriptive analysis simplifies and presents key aspects of a dataset, assisting in pattern recognition and understanding data trends. Correlation analysis examines the relationships between variables to determine their degree of association or independence

Target population

The term population is used to describe the whole group of individuals under whose data is collected. A population consists of all the people, things, or quantities that share a set of characteristics that can be seen (Lohr, 2021). The Target population of this study was 127 Gicumbi District staff

Data collection Instruments

Participants were sent a survey with short, Disagree/Agree answers for this research. With response options, the responders were presented with a number of options from which to choose an answer. For this study, participants were given the questionnaires and expected to fill it out independently, before returning it to the researcher through the same method and in the specified time frame.

Documentary technique involves analyzing existing documents, records, or archival materials to extract relevant information for research purposes. Documents include reports, letters, memos, articles, or any written or recorded material. Documentary technique was used to obtain secondary information about a phenomenon that wishes to study; and the documents targeted were the available reports (secondary data).

Data analysis procedures

For this study, data analysis as the process through which a participant's perspective is translated into a coherent written document. The researcher was able to do both theoretical and practical analyses with the aid of this. The statistical approach may be thought of as a toolkit for putting numbers on study findings.

4. Research findings

Multiple correlation analysis was used to examine the study's dependent and independent variables in order to find out how the correlations were formed and whether the projected linkages were statistically significant. This was evaluated using the field data at a 5% significance level. The tables below show the findings of the many correlations.

Table 1: Correlations

		Procurement contract planning	Procurement contract negotiation	Procurement contract execution	Performance of public institutions
Procurement contract planning	Pearson Correlation Sig. (2-tailed) N	1 .000 116	.817** .000 116	.601** .000 116	.767** .000 116
Procurement contract negotiation	Pearson Correlation Sig. (2-tailed) N	.817** .000 116	1 .000 116	.618** .000 116	.769** .000 116
Procurement contract execution	Pearson Correlation Sig. (2-tailed) N	.601** .000 116	.618** .000 116	1 .000 116	.844** .000 116
Performance of public institutions	Pearson Correlation Sig. (2-tailed) N	.767** .000 116	.769** .000 116	.844** .000 116	1 .000 116

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

Source: Primary data, 2024.

Table 1 illustrates the correlation between procurement contract management practices and the performance of Gicumbi District.

The Pearson correlation coefficient between procurement contract planning and the performance of public institutions is 0.767, indicating a strong positive relationship. This indicates that effective procurement contract planning is associated with improved performance of Gicumbi District. This correlation is statistically significant, with a significance level of 0.000 ($p = 0.000 < 0.05$), reinforcing the notion that well-structured planning can substantially enhance institutional outcomes. Similarly, the correlation between procurement contract negotiation and performance is 0.769, reflecting a very strong positive relationship. This indicates that effective negotiation practices in procurement are closely linked to better

performance of Gicumbi District, and this relationship is also statistically significant ($p = 0.000 < 0.05$).

The relationship between procurement contract execution and performance is particularly strong, with a Pearson correlation coefficient of 0.844. This highlights that efficient execution of procurement contracts is critical for achieving high performance of Gicumbi District, supported by a significance level of 0.000 ($p = 0.000 < 0.05$).

The findings align well with Shimele (2021) investigated the determinants influencing the management of public procurement contracts within the Federal Public Procurement Service. This parallels the strong correlations identified in Gicumbi District, where procurement contract planning, negotiation and execution significantly impact the performance of public institutions. Both studies show the importance of robust procurement practices in achieving improved outcomes and enhancing institutional effectiveness.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.913 ^a	.833	.828	.27427

a. Predictors: (Constant), Procurement contract execution, Procurement contract planning, Procurement contract negotiation

Source: Primary data, 2024.

Table 2 presents the model summary for the analysis of procurement contract management practices and their effect on the performance of public institutions in Gicumbi District.

The correlation coefficient (R) is 0.913, indicating a very strong positive relationship between the predictors and the performance outcome. The R Square value of 0.833 signifies that approximately 83.3% of the variance in the performance of public institutions explained by the four procurement contract management practices: procurement contract planning, procurement contract negotiation, and procurement contract execution. The Adjusted R Square value is 0.828, which adjusts for the number of predictors in the model, indicating that the model remains strong even when accounting for the degree of freedom. This further reinforces the strength of the effect of the procurement contract management on performance of Gicumbi District.

The findings align with Matto, Ame, and Nsimbila (2021), who investigated the influence of contract management on value for money in Tanzania's public procurement. Their research emphasized that effective and efficient contract management significantly contributes to achieving value for money, highlighting the importance of key factors such as contract formation and quality control. Similarly, the strong correlation observed in Gicumbi District, where procurement contract management practices account for a substantial portion of the variance in institutional performance, underscores the critical role these practices play in enhancing overall effectiveness. Both studies suggest that robust contract management frameworks are essential for improving public sector performance and ensuring optimal resource utilization.

Table 3: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41.967	3	13.989	185.970	.000 ^b
	Residual	8.425	112	.075		
	Total	50.392	115			

a. Dependent Variable: Performance of public institutions

b. Predictors: (Constant), Procurement contract execution, Procurement contract planning, Procurement contract negotiation

Source: Primary data, 2024.

Table 3 presents the Analysis of Variance (ANOVA) for the regression model assessing the effect of procurement contract management practices on the performance of public institutions in Gicumbi District.

The F-statistic for the model is 185.970, which indicates a very strong level of significance in how well the predictors explain the performance of public institutions. The significance level (Sig.) of 0.000 confirms that the effect of procurement contract management practices on performance is statistically significant, indicating that at least one of the predictors contributes meaningfully to explaining changes in performance outcomes.

The findings align with Jolly (2022), who conducted research on the effect of contract management practices on procurement performance, demonstrating that such practices significantly influence procurement outcomes in Nyarugenge District. The study emphasizes the importance of effective contract management for achieving positive performance results. This consistency highlights the critical role that strong procurement contract management practices play across various districts in Rwanda, reinforcing the necessity for public institutions to prioritize effective contract management to enhance their overall performance and service delivery.

Table 4: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.177	.146		1.215	.227
	Procurement contract planning	.237	.063	.258	3.774	.000
	Procurement contract negotiation	.201	.065	.213	3.064	.003
	Procurement contract execution	.559	.050	.557	11.084	.000

a. Dependent Variable: Performance of public institutions

Source: Primary data, 2024.

Table 4 presents the coefficients from the regression analysis examining the impact of procurement contract management practices on the performance of Gicumbi District. The unstandardized coefficients (β) indicate the change in the dependent variable for a one-unit change in each predictor variable, holding all other variables constant. The constant term is 0.177, which represents the expected performance of public institutions when all predictor variables are zero.

The coefficient for procurement contract planning is 0.237, indicating that for each unit increase in procurement contract planning, the performance of public institutions is expected to increase by 0.237, and this relationship is statistically significant ($\beta = 0.237$, Sig. = 0.000). This demonstrates that effective planning significantly enhances institutional performance. The procurement contract negotiation coefficient is 0.201, indicating a similar effect; a one-unit increase in effective negotiation is associated with an increase in performance of 0.201, and it is also statistically significant ($\beta = 0.201$, Sig. = 0.003).

Additionally, the coefficient for procurement contract execution is 0.559, indicating that effective execution contributes substantially to performance ($\beta = 0.559$, Sig. = 0.003).

The findings are supported by Njoki *et al.* (2021), who examined the impact of contract management on the performance of state corporations in Kenya. Their research indicated that effective contract management is crucial in public procurement, contributing to transparency, accountability, and fair administration among state agencies. This aligns well with the results from Gicumbi District, where procurement contract management practices, specifically planning, negotiation and execution, significantly enhance the performance of public institutions. Both studies underline the importance of robust contract management frameworks in improving overall institutional effectiveness and ensuring successful procurement outcomes.

5. Conclusion

The primary aim of this study was to assess the influence of procurement contract management practices on the performance of public institutions in Gicumbi District, Rwanda. The research focused on evaluating the effects of four key practices: procurement contract planning, negotiation and execution on institutional performance. The study found that a significant number of respondents held positive views on the effectiveness of these procurement management practices, agreeing that they were instrumental in enhancing the overall performance of Gicumbi District.

Respondents reported strong agreement on the effectiveness of procurement contract planning in improving institutional performance. They noted that effective planning facilitated clear objectives and detailed scopes of work, enabling better resource allocation and project execution. Similarly, participants expressed favorable views on procurement contract negotiation, emphasizing that successful negotiations helped secure favorable terms and conditions, which positively impacted the performance of public institutions.

Procurement contract execution was another area where respondents showed strong positive agreement. They highlighted the importance of timely execution and adherence to contractual obligations as critical factors contributing to successful outcomes. Respondents recognized that efficient execution processes directly affected the quality of deliverables and institutional performance, reinforcing the need for a robust execution strategy.

The findings led to the rejection of the null hypotheses. The null hypothesis suggesting no significant effect of procurement contract planning on performance was rejected, as the results demonstrated a substantial relationship between planning practices and institutional outcomes. Similarly, the null hypothesis related to procurement contract negotiation was also rejected, highlighting its significant positive impact on performance. The null hypothesis regarding procurement contract execution was dismissed, with evidence showing that efficient execution significantly enhances performance of Gicumbi District.

6. Recommendations

Recommendations are drawn in line with the set objectives of the study as follows:

- Gicumbi District should enhance the capacity of its procurement personnel through targeted training programs that focus on effective contract planning techniques, ensuring that staff are equipped with the necessary skills to articulate clear objectives and detailed scopes of work.
- It is recommended that Gicumbi District implement standardized templates and guidelines for procurement contract planning, which can facilitate consistency and

carefulness in the planning process across all projects.

- Gicumbi District is recommended to adopt a collaborative negotiation framework that encourages open communication between stakeholders, aiming to enhance better relationships and more favorable contract terms that align with institutional goals.
- It should also establish a negotiation strategy that includes comprehensive market research and analysis, enabling negotiators to be well-prepared and informed about industry standards, thereby securing advantageous positions during contract discussions.

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