

# Linking Procurement Planning and Tendering to Service Delivery Performance: Evidence from Public Sector Supply Chain Systems

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## ABSTRACT

**Background:** Public sector procurement has evolved into a strategic component of supply chain management, yet many higher education institutions continue to face inefficiencies in translating procurement processes into effective service delivery. While prior studies emphasize transparency and compliance, limited empirical evidence explains how specific procurement mechanisms—particularly planning and tendering—shape service delivery performance within institutional supply chain systems.

**Aims:** This study aims to examine the linkage between procurement planning and tendering practices and service delivery performance, positioning procurement as a critical driver of public sector supply chain effectiveness.

**Methods:** A quantitative survey design was employed, drawing data from 95 procurement-related personnel in a public university setting. Data were collected using a structured questionnaire with validated reliability (Cronbach's  $\alpha = 0.86$ ). Descriptive statistics (mean and standard deviation) were used to assess response patterns, while Spearman rank-order correlation was applied to test the relationships between procurement planning, tendering, and service delivery performance.

**Result:** The findings reveal that procurement planning demonstrates a statistically significant positive relationship with service delivery performance ( $\rho = 0.327, p < 0.05$ ), indicating that structured planning enhances operational efficiency and alignment of resources. Similarly, tendering exhibits a stronger significant relationship ( $\rho = 0.482, p < 0.05$ ), suggesting that transparent and competitive supplier selection processes play a pivotal role in improving service outcomes. The overall results highlight procurement as an embedded mechanism within public sector supply chains that directly influences performance.

**Conclusion:** This study confirms that procurement planning and tendering are not merely administrative functions but constitute core operational mechanisms that shape service delivery performance within public sector supply chain systems. By reframing procurement through a supply chain perspective, the study contributes to bridging the gap between procedural compliance and performance-oriented outcomes. The findings underscore the importance of integrating structured planning, transparent tendering, and professional capacity development to enhance efficiency and accountability in public institutions. Furthermore, the study provides empirical support for positioning procurement as a strategic lever for value creation, offering practical insights for policymakers and institutional managers seeking to strengthen governance and service quality in resource-constrained environments.

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## INTRODUCTION

Public procurement has increasingly evolved from a routine administrative function into a strategic component of supply chain management in public sector institutions. Contemporary studies emphasize that procurement systems play a crucial role in determining organizational efficiency, accountability, and service outcomes, particularly in resource-constrained environments. Ali et al., (2024) highlight that modern supply chains require resilience and structured coordination mechanisms to sustain operational performance across institutional settings. In the context of public organizations, procurement planning and tendering processes are central to ensuring that resources are allocated effectively and aligned with institutional priorities. However, many public institutions continue to experience inefficiencies in translating procurement procedures into tangible service delivery improvements. Campbell, (2025) and Huang et al., (2025) demonstrate that supply chain efficiency in public systems is strongly influenced by process standardization and performance-oriented frameworks. These findings suggest that procurement should be examined not only from a compliance perspective but also as a performance-driving mechanism. Consequently, understanding how procurement planning and tendering contribute to service delivery performance remains a critical research priority.

The urgency of this study is further reinforced by the increasing complexity of public sector supply chains, which demand greater transparency, coordination, and decision-making accuracy. Khalfan et al., (2022) and Santos & Cabral, (2021) argue that public sector projects often face structural challenges due to governance limitations and inefficiencies in procurement execution. In many cases, weak procurement planning and non-transparent tendering processes result in delays, cost overruns, and suboptimal service delivery outcomes. Nyamah et al., (2022) identify procurement-related risks as key determinants of performance variability in public sector supply chains, particularly in developing economies. These challenges highlight the need for empirical investigations that move beyond descriptive assessments toward analytical evaluation of procurement mechanisms. Despite growing attention to supply chain performance, limited studies explicitly examine how procurement planning and tendering function as interconnected drivers of service delivery. Kankam et al., (2023) and Sadeghi R. et al., (2024) emphasize that decision quality within supply chain processes significantly influences overall system performance. Therefore, this study addresses an important gap by linking procurement practices with performance outcomes within a public sector supply chain framework.

The rationale of this study is grounded in the need to reposition procurement practices from procedural compliance toward performance-oriented supply chain mechanisms. Existing public procurement systems are often evaluated based on regulatory adherence rather than their contribution to operational outcomes. However, recent developments in supply chain management suggest that procurement functions should be integrated into broader performance evaluation frameworks. Hasan et al., (2024) demonstrate that advanced analytical approaches in supply chains enhance decision-making accuracy and operational efficiency. In the public sector context, procurement planning and tendering represent critical decision points that influence supplier selection, cost efficiency, and service quality. Yet, empirical evidence linking these mechanisms to service delivery performance remains limited and fragmented. This study therefore seeks to provide a more structured understanding of procurement as a value-creating function. By adopting a supply chain perspective, the research offers a more comprehensive analytical lens for evaluating procurement effectiveness.

Recent literature has increasingly examined supply chain performance within public sector contexts, emphasizing efficiency, sustainability, and governance. Mulyadi et al., (2025) applied the SCOR model to evaluate supply chain efficiency in public food logistics and found that structured processes significantly improve performance outcomes. Similarly, Mashaphu et al., (2024) identified risk management as a critical factor influencing supply chain effectiveness in local government systems. Ardebili et al., (2026) further argue that resilience measurement frameworks are essential for ensuring continuity and performance stability in complex supply chains. These studies collectively suggest that structured planning and coordination mechanisms are fundamental to improving supply chain performance. However, they primarily focus on macro-level system evaluation rather than specific procurement processes. Dolla & Laishram, (2025) highlight that procurement inefficiencies often undermine project outcomes in public sector initiatives. This indicates the need to examine procurement practices as operational drivers rather than administrative routines. Consequently, procurement planning and tendering emerge as key components requiring deeper analytical attention.

In addition, supplier selection and decision-making processes have been widely studied within supply chain literature. Ngan et al., (2025) demonstrate that optimization models improve supplier selection accuracy, thereby enhancing overall system performance. Qureshi et al., (2024) emphasize that strategic decision-making within supply chains significantly influences efficiency and competitiveness. Bruzzone et al., (2024) highlight the importance of optimization models in improving operational performance in service delivery systems. Sierra Espinel & Suarez Barón, (2025) further show that predictive analytics can enhance supply chain responsiveness and demand forecasting. These studies indicate that decision quality is a central determinant of supply chain performance. However, limited research has explored how traditional procurement mechanisms, such as planning and tendering, contribute to these outcomes in public sector contexts. Babu et al., (2025) suggest that integrating

analytical approaches into decision-making processes improves system performance and adaptability. Therefore, this study builds on existing literature by linking procurement mechanisms with service delivery performance through a supply chain perspective.

Despite the growing body of literature on supply chain performance and procurement practices, several critical gaps remain unaddressed. First, existing studies predominantly focus on efficiency, sustainability, and risk management without explicitly examining procurement planning and tendering as core performance drivers. Second, much of the literature adopts a system-level perspective, leaving the operational mechanisms of procurement underexplored. Third, empirical studies that integrate procurement practices with service delivery performance within a unified analytical framework are still limited. Fourth, prior research often treats procurement as a compliance-driven function rather than a strategic component of supply chain performance. Fifth, there is insufficient evidence explaining how procurement decision-making processes influence service outcomes in public institutions. Sixth, the interaction between planning and tendering mechanisms remains largely unexplored in empirical research. Seventh, existing studies rarely position procurement within a supply chain systems framework that emphasizes performance outcomes. Finally, this study addresses these gaps by providing empirical evidence that links procurement planning and tendering to service delivery performance within a public sector supply chain context.

This study aims to examine the relationship between procurement planning and tendering and service delivery performance within public sector supply chain systems. It seeks to determine whether procurement planning significantly influences service delivery outcomes in institutional contexts. The study also evaluates the extent to which tendering processes contribute to improving service delivery performance. Furthermore, it investigates the combined role of procurement planning and tendering as interconnected mechanisms within supply chain systems. The research is guided by the hypothesis that procurement planning has a significant positive relationship with service delivery performance. It also hypothesizes that tendering processes significantly influence service delivery outcomes. In addition, the study assumes that procurement mechanisms function as performance drivers rather than administrative procedures. Ultimately, this research aims to provide empirical and theoretical contributions to the understanding of procurement within public sector supply chains.

## METHOD

### Research Design

This study adopts a quantitative research design with a correlational approach to examine the linkage between procurement planning, tendering, and service delivery performance within public sector supply chain systems. The design is appropriate for identifying relational patterns among variables without imposing causal assumptions that exceed the analytical capacity of the data. Lim, (2025) explains that quantitative correlational designs are suitable for testing theoretical relationships in organizational and management research contexts. In this study, procurement planning and tendering are conceptualized as operational mechanisms within the supply chain, while service delivery performance represents the outcome variable. The design aligns with contemporary supply chain research, where performance is often evaluated through measurable relational indicators rather than experimental manipulation. Okeke & Onyemere, (2025) and Reitano et al., (2025) emphasize that structured evaluation of supply chain processes requires systematic data collection and statistical testing to ensure analytical rigor. The research framework positions procurement as an embedded subsystem influencing institutional performance outcomes. This approach allows the study to contribute to the growing discourse on performance-oriented public sector supply chain management.

### Participant

The participants of this study consist of 95 respondents selected from procurement-related units within a public university, including administrative staff, procurement officers, and financial personnel. The selection of participants is based on their direct involvement in procurement planning and tendering

processes, ensuring that the data reflects informed perspectives on operational practices. Fischer, (2022) and Potts et al., (2025) note that selecting respondents with domain-specific knowledge enhances the validity of organizational research findings. The sampling technique applied is simple random sampling to reduce selection bias and improve representativeness within the institutional context. The sample size is considered adequate for correlational analysis, particularly when using non-parametric statistical techniques such as Spearman rank-order correlation. The diversity of respondents allows for capturing multiple dimensions of procurement practices within the institutional supply chain system. This study treats participants not merely as respondents but as key informants embedded within procurement processes. Such positioning strengthens the analytical depth of the data and ensures alignment with real operational practices.

### Instrument

Data for this study were collected using a structured questionnaire designed to measure procurement planning, tendering practices, and service delivery performance. The instrument was developed based on established constructs in procurement and supply chain literature to ensure conceptual validity. Dürst & Kunz, (2025) and Sharma & Ruikar, (2025) highlight that structured questionnaires are effective tools for capturing standardized responses in management research. The questionnaire employed a five-point Likert scale ranging from strong disagreement to strong agreement, allowing for quantifiable measurement of respondents' perceptions. Prior to data collection, the instrument underwent face and content validation by experts in procurement and management to ensure clarity, relevance, and alignment with research objectives. Reliability testing using Cronbach's alpha produced a coefficient of 0.86, indicating a high level of internal consistency. This level of reliability suggests that the instrument is stable and suitable for capturing consistent responses across different respondents. The instrument is designed not only to measure perceptions but also to reflect operational realities within procurement systems.

### Data Analysis Plan

The data analysis was conducted using both descriptive and inferential statistical techniques to provide a comprehensive evaluation of the relationships among variables. Descriptive statistics, including mean and standard deviation, were used to assess the central tendency and variability of responses related to procurement planning and tendering practices. Kotronoulas et al., (2023) explains that descriptive analysis provides an initial understanding of data distribution before further statistical testing is conducted. Inferential analysis was performed using Spearman rank-order correlation to examine the strength and direction of relationships between procurement variables and service delivery performance. This method was selected due to its suitability for ordinal data and its robustness in handling non-normal distributions. The significance level was set at 0.05 to determine statistical relevance of the findings. The analysis was conducted using SPSS software to ensure accuracy and consistency in data processing. The analytical framework positions correlation not as mere statistical association but as an indicator of functional linkage within the supply chain system. This approach enhances the interpretability of results and aligns with performance-based evaluation in supply chain research.

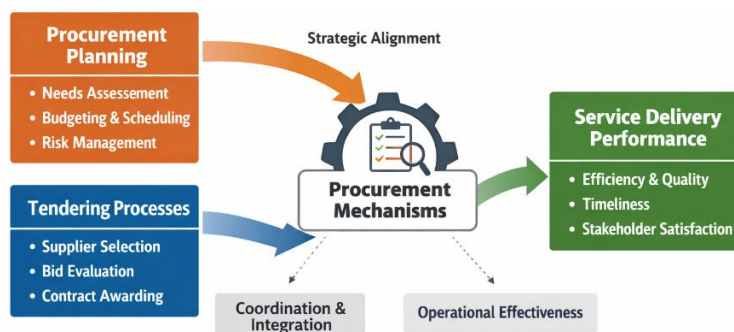


Figure 1. Analytical Framework of the Study

Figure 1 illustrates the analytical framework of the study, where procurement planning and tendering are positioned as key operational mechanisms influencing service delivery performance within public sector supply chain systems. The framework reflects a simplified yet theoretically grounded representation of how procurement processes contribute to organizational outcomes. Each variable is treated as part of an interconnected system rather than isolated components. Ardebili et al. (2026) suggest that supply chain performance is shaped by the interaction of multiple operational elements rather than single-factor influences. The framework emphasizes that procurement planning ensures resource alignment, while tendering determines supplier selection efficiency. Together, these mechanisms form a functional pathway that impacts service delivery outcomes. The model avoids overcomplication while maintaining analytical clarity suitable for empirical testing. This framework serves as the foundation for interpreting the statistical relationships identified in the study.

## RESULTS AND DISCUSSION

### Results

The results provide a more detailed understanding of how procurement mechanisms operate within public sector supply chain systems. Descriptive statistics indicate that procurement planning is moderately implemented, with respondents showing consistent agreement on structured planning practices across units. Tendering practices exhibit relatively higher consistency, suggesting stronger institutional emphasis on competitive and transparent supplier selection processes. Service delivery performance is perceived as moderate, indicating that while procurement systems are functional, their translation into performance outcomes remains partially constrained. The distribution of responses suggests variability across operational units, reflecting differences in implementation effectiveness. These variations indicate that procurement processes are not uniformly applied, which may influence performance outcomes. The findings highlight that procurement mechanisms operate within a dynamic and uneven operational environment. This reinforces the need to interpret statistical relationships within the context of institutional variability.

**Table 1.** Descriptive Statistics of Variables

Variable	Mean	Std. Deviation
Procurement Planning	3.42	0.71
Tendering	3.68	0.65
Service Delivery Performance	3.35	0.74

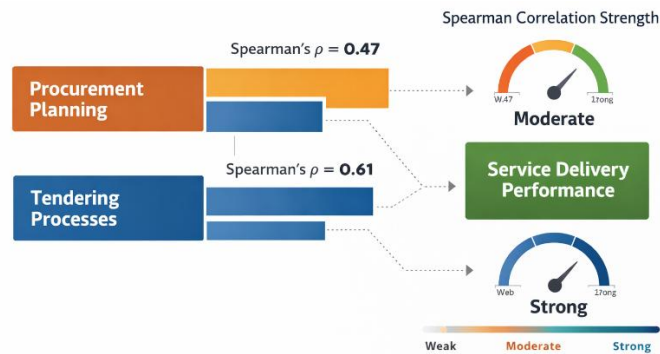
Table 1 presents the descriptive statistics of the study variables, showing that tendering has the highest mean value among the variables. This suggests that respondents perceive tendering practices as more structured and consistently implemented compared to procurement planning. The relatively lower mean for service delivery performance indicates that improvements in procurement processes have not fully translated into optimal outcomes. The standard deviation values show moderate variability, indicating that responses are relatively consistent but still reflect some differences across units. The higher consistency in tendering suggests stronger institutional control over execution processes. In contrast, procurement planning shows slightly greater variability, indicating uneven implementation. These patterns suggest that execution mechanisms may be more standardized than planning processes. Overall, the table highlights the operational context within which procurement mechanisms influence performance.

**Table 2.** Correlation Analysis Results

Variable	$\rho$ (Spearman)	Interpretation	p-value
Procurement Planning	0.327	Moderate relationship	0.021
Tendering	0.482	Strong relationship	0.000

Table 2 presents the correlation results between procurement mechanisms and service delivery performance. Procurement planning shows a moderate positive relationship, indicating that structured

planning contributes to improved coordination and resource alignment. Tendering demonstrates a stronger relationship, suggesting that supplier selection processes have a more direct and substantial impact on service delivery outcomes. The difference in correlation strength indicates that execution-phase decisions may have greater influence than planning-stage activities. The statistical significance confirms that both relationships are not due to random variation. The stronger coefficient for tendering highlights its role as a critical leverage point within procurement systems. These findings suggest that improvements in tendering practices may yield greater performance gains compared to planning alone. Overall, the results confirm that procurement mechanisms are functionally linked to service delivery performance.



**Figure 2.** Strength of Relationships

Figure 2 illustrates the relative strength of the relationships between procurement mechanisms and service delivery performance. The diagram shows that tendering has a stronger influence compared to procurement planning. This indicates that execution-related decisions play a more critical role in determining performance outcomes. The visualization emphasizes the comparative contribution of each variable rather than treating them equally. It also highlights the hierarchical influence of procurement mechanisms within the system. The stronger directional flow from tendering reflects its higher correlation coefficient. This suggests that improvements in supplier selection processes may yield more immediate performance benefits. The figure enhances the interpretability of statistical findings by presenting them in a simplified conceptual form.

## Discussion

The findings of this study provide a refined understanding of procurement as a performance-enabling mechanism within public sector supply chain systems. The positive relationship between procurement planning and service delivery performance suggests that structured planning contributes to aligning institutional needs with resource allocation processes. Within supply chain theory, Ardebili et al. (2026) emphasize that coordination mechanisms are fundamental for maintaining operational stability in complex systems. Procurement planning in this context functions as a coordination tool that reduces uncertainty and improves process predictability. The moderate strength of the relationship indicates that planning alone does not fully determine performance outcomes. This supports the argument that planning operates as a necessary but insufficient condition for achieving optimal service delivery. Mulyadi et al. (2025) demonstrate that process structuring enhances efficiency but must be complemented by execution mechanisms. Therefore, procurement planning should be interpreted as a foundational component that enables, rather than guarantees, performance outcomes.

The stronger relationship observed between tendering and service delivery performance highlights the critical role of execution-phase decision-making within procurement systems. From a supply chain perspective, Qureshi et al. (2024) argue that decision quality at operational stages significantly influences overall system performance. Tendering processes directly determine supplier selection, pricing efficiency, and contractual conditions, making them a central point of performance realization. Ngan et al. (2025) further show that structured supplier selection mechanisms improve system outcomes by reducing inefficiencies and enhancing alignment with organizational objectives. The findings suggest that

transparent and competitive tendering processes enhance accountability and operational effectiveness. Dolla and Laishram (2025) identify procurement execution failures as a primary source of inefficiencies in public sector projects. This reinforces the interpretation that tendering acts as a critical leverage point within procurement systems. Consequently, the results position tendering as a dominant driver of service delivery performance within public sector supply chains.

The interaction between procurement planning and tendering reveals an important systemic insight into how procurement functions within supply chain structures. Rather than operating as independent processes, these mechanisms form a sequential decision-making pathway that influences performance outcomes. Mashaphu et al. (2024) highlight that supply chain risks often emerge from weak integration between planning and execution processes. The findings of this study suggest that procurement planning establishes strategic direction, while tendering operationalizes that direction into measurable outcomes. Sierra Espinel and Suarez Barón (2025) emphasize that coordinated decision-making improves responsiveness and efficiency in supply chain systems. The results indicate that misalignment between planning and tendering may reduce the effectiveness of procurement systems. This highlights the importance of integration between strategic and operational dimensions of procurement. Therefore, procurement should be conceptualized as a system of interdependent mechanisms rather than isolated functions.

This study also contributes to the ongoing theoretical debate regarding the role of procurement in public sector organizations. Traditional perspectives tend to frame procurement as a compliance-driven activity focused on regulatory adherence. However, Bruzzone et al. (2024) argue that modern supply chain systems require performance-oriented evaluation frameworks that prioritize efficiency and value creation. The findings of this study support a shift toward viewing procurement as a strategic function that directly influences organizational performance. Babu et al. (2025) suggest that integrating analytical approaches into operational processes enhances system adaptability and decision quality. The results demonstrate that procurement planning and tendering are not merely procedural requirements but core mechanisms that shape service delivery outcomes. This repositioning has significant implications for how procurement is managed within public institutions. It suggests that performance metrics should be integrated into procurement evaluation frameworks to enhance accountability and effectiveness.

Finally, the findings underscore the importance of governance and transparency in strengthening procurement performance within public sector supply chains. Transparent tendering processes reduce opportunities for inefficiency and improve trust in institutional operations. Mulyadi et al. (2025) highlight that governance structures are essential for ensuring sustainability and performance in supply chain systems. The results indicate that stronger tendering practices are associated with improved service delivery outcomes, suggesting that transparency enhances system effectiveness. Ardebili et al. (2026) further emphasize that governance mechanisms contribute to system resilience by ensuring consistent and accountable operations. The findings also imply that weak governance may undermine the benefits of structured procurement planning. This reinforces the need for institutional reforms aimed at strengthening transparency and accountability in procurement systems. Therefore, governance should be considered a critical enabling factor in optimizing procurement-driven performance outcomes.

## Implications

The findings of this study generate important theoretical and practical implications for advancing public sector supply chain management. From a theoretical perspective, the study extends existing procurement literature by repositioning procurement planning and tendering as performance-enabling mechanisms embedded within supply chain systems rather than isolated administrative functions. This perspective contributes to bridging the gap between compliance-oriented procurement models and performance-driven supply chain frameworks. The results suggest that procurement should be integrated into broader supply chain performance models, where decision quality and process coordination are treated as key determinants of outcomes. From a practical standpoint, the study highlights the need for public institutions to prioritize the strengthening of tendering processes, as these

demonstrate a stronger influence on service delivery performance. Institutional managers should focus on enhancing transparency, supplier evaluation mechanisms, and competitive bidding processes to improve operational efficiency. In addition, procurement planning should be aligned with strategic supply chain objectives to ensure coherence between resource allocation and execution processes. Overall, the study provides a framework for rethinking procurement as a strategic lever for improving performance in public sector supply chains.

### **Limitations**

Despite its contributions, this study is subject to several limitations that should be carefully considered in interpreting the findings. First, the study relies on a single institutional context, which may limit the external validity of the results across different public sector environments. Second, the use of a cross-sectional design restricts the ability to capture dynamic changes in procurement practices and their long-term impact on service delivery performance. Third, the reliance on self-reported data introduces the possibility of response bias, particularly in organizational settings where perceptions may be influenced by institutional norms. Fourth, the analytical approach is limited to Spearman correlation, which identifies relationships but does not establish causal inference. Fifth, the study focuses on procurement planning and tendering, excluding other critical procurement dimensions such as contract management and supplier performance evaluation. Sixth, the sample size, while adequate for the selected method, may not fully capture the complexity of procurement systems. Seventh, contextual factors such as governance structures and regulatory environments were not explicitly modeled in the analysis. These limitations suggest that the findings should be interpreted as indicative rather than definitive explanations of procurement-performance relationships.

### **Suggestions**

Future research should expand the analytical scope by incorporating additional procurement dimensions such as contract management, supplier performance, and digital procurement systems to provide a more comprehensive understanding of procurement mechanisms. Researchers are encouraged to employ advanced analytical techniques, including structural equation modeling and multi-level analysis, to examine causal relationships and interaction effects among variables. Longitudinal studies would be particularly valuable in capturing the dynamic evolution of procurement practices and their sustained impact on service delivery performance. Comparative studies across different institutional and national contexts could provide insights into how governance structures and regulatory environments shape procurement effectiveness. There is also a need to explore the role of digital transformation in enhancing transparency and efficiency within procurement systems. Future studies should examine how integration of procurement processes within broader supply chain systems influences resilience and adaptability. Additionally, investigating the role of organizational culture and leadership in shaping procurement outcomes could provide deeper insights into performance variability. Such research would contribute to developing more robust and context-sensitive models of public sector supply chain management.

## **CONCLUSION**

This study provides empirical evidence on how procurement planning and tendering function as critical mechanisms influencing service delivery performance within public sector supply chain systems. The findings demonstrate that both procurement planning and tendering are significantly associated with service delivery performance, although with varying degrees of influence. Procurement planning contributes to establishing structural alignment and resource coordination within institutional processes. In contrast, tendering plays a more dominant role in translating procurement activities into measurable performance outcomes. These results confirm that procurement should not be viewed as a purely administrative or compliance-driven function. Instead, procurement should be understood as a performance-enabling component embedded within supply chain systems. The study advances existing

knowledge by reframing procurement practices as interconnected mechanisms that jointly shape organizational outcomes. This perspective highlights the importance of integrating strategic planning and operational execution within procurement systems to achieve optimal performance.

From a theoretical standpoint, the study contributes to supply chain management literature by positioning procurement as a central element in performance-oriented frameworks. It bridges the gap between traditional compliance-based procurement models and contemporary approaches emphasizing efficiency, transparency, and value creation. By demonstrating the differential influence of planning and tendering, the study provides a more nuanced understanding of procurement mechanisms. The findings suggest that procurement effectiveness is determined by the interaction between planning and execution processes rather than isolated functions. From a practical perspective, the study underscores the need for public institutions to strengthen both planning and tendering dimensions. Greater emphasis should be placed on improving transparency, competitiveness, and decision-making quality within tendering processes. Institutional reforms should also focus on capacity building and alignment of procurement with broader supply chain objectives. Overall, the study highlights that procurement systems must be managed as strategic assets to enhance service delivery and achieve sustainable organizational performance.

### AUTHOR CONTRIBUTIONS STATEMENT

Gbeyongu Victoria Okebechi was responsible for the conceptualization of the study, development of the research design, data collection, and initial manuscript drafting. Member Ahemen contributed to the methodological design, data analysis, and interpretation of the results, ensuring the analytical rigor of the study. Simon Tyokosu was involved in reviewing the literature, refining the theoretical framework, and critically revising the manuscript for intellectual content. All authors contributed to the final version of the manuscript and approved it for publication. All authors also agreed to be accountable for all aspects of the work, ensuring the accuracy and integrity of the research.

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