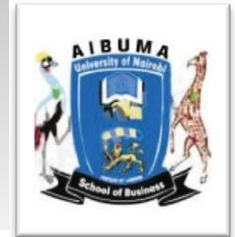




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**EXAMINING THE COMBINED EFFECT OF PROCUREMENT GOVERNANCE,
INTEGRATIVE SUPPLY CHAIN TECHNOLOGY AND PROCUREMENT
PERFORMANCE ON SERVICE DELIVERY IN IN MINISTRIES, DEPARTMENTS AND
AGENCIES IN KENYA**

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Abstract

The overall goal of the study was to examine the combined effect of procurement governance, integrative supply chain technology and procurement performance on service delivery in MDAs in Kenya.. To fulfill this goal, a conceptual model was developed based on previously examined literature. A partial least squares structural equation modeling (PLS-SEM) model that corresponded to the conceptual model was also created. This study adopted a descriptive cross-sectional survey research design. To test the proposed relationship, a survey was done and data collected. This study's population included all public procuring institutions in Kenya. A total of 157 questionnaires were issued. PLS-SEM was used to evaluate the relationship proposed in the conceptual and SEM model of the study. A software with graphical user interface for variance-based structural equation modeling (SEM) using the partial least squares (PLS) path modeling method known as SmartPLS 3.3.3 software was used in the analysis. The objective of the study was to examine the combined effect of procurement governance, integrative supply chain technology and procurement performance on service delivery in MDAs in Kenya. Results indicated that there is a relationship between procurement governance and service delivery; that the relationship between procurement governance and service delivery is mediated by procurement performance; that the relationship between procurement governance and service delivery is not moderated by integrative supply chain technology; that the effect of procurement governance, integrative supply chain technology and procurement performance have a significant combined effect on service delivery. Studying service delivery in public entities was limited to the fact that these entities utilize public funds to provide those services. Further research is critical to find out the characteristics of service delivery in the private sector. This will provide information about decision making variables in that environment.

Keywords: *Procurement Governance, Integrative Supply Chain Technologies, Procurement Performance, Service Delivery, PLS-SEM*

Introduction

Procurement efficiency promotes good relationships with suppliers which encourages important feedback to serve the user more effectively (Magawa & Karanja, 2019); however earlier studies had posited that procurement performance was negatively affected by inability to use e-procurement platforms (Barsemoi, Mwangangi, & Asienyo, 2014). Use of integrative supply chain technology promotes procurement governance leading to procurement efficiency and thus enhancing service delivery (Power, 2003; Lysons & Farrington, 2012; Murphy & Wood, 2010). However, evidence proves that lack of effective information systems policies in the procurement processes affect accountability which renders service delivery unreliable (Mousavi, Pimenidis, & Jahankhani, 2008). Linking integrative supply chain technology to procurement processes improves visibility and transparency enhancing service delivery (Shileswa, 2017; Angeles et al., 1998). A study was crucial to establish the combined effect of integrative supply chain technology, procurement governance, and procurement performance for Kenyan MDAs. This study thus sought to address the following study question: how does procurement governance, integrative supply chain technology, and procurement performance affect service delivery in Kenyan MDAs?

Literature review

Good governance is premised on integrity, accountability and transparency which in procurement process can be supported by integrative supply chain technology to simplify firms' operations (Christopher et al., 2004; Wittig, 2003). However, studies reveal that some procurement proceedings

do not follow regulations, because some members are not motivated to complete some processes; there are coordination issues; there is imminent bureaucracy and a lack of open tendering (Mburu & Njeru, 2014). Integrated technologies in e-procurement enhance transparency and accountability collectively between the procuring entity and the suppliers, leading to satisfactory service levels (Croxtan, Garcia-Dastugue, Lambert, & Rogers, 2001). Electronic procurement agendas enforce compliance as drivers of procurement performance due to visibility of procurement processes (Knight et al., 2007).

Procuring entities in Kenya have implemented integrative supply chain technologies in procurement and transactional processing. Throughout the procurement proceeding, compliance with the procurement regulations, adherence to the procurement plan, formulating sound evaluation criteria and good record keeping are sustained in order to achieve performance in procurement (Lysons & Farrington, 2012). Nyakundi et al. (2012) identify procurement as a central operation in every institution that needs to be scrutinized thoroughly. Kioko and Were (2014) found out that staff capacity, compliance with legal framework, integrative technology and institutional culture lead to organizational efficiency in service delivery. Matunga, Nyanamba and Okibo (2013) however established that e-procurement processes faced inadequate funding, inability to adopt dynamic strategies for change management and lack of trained resources to apply integrative technologies.

In the practice of procurement governance, non-compliance in procurement processes can be identified at an early stage (Carter & Rogers, 2008). A well performing procurement function, will in return ensure that all the networking activities implemented through a framework of integrated technology application lead to governance practices and promote equity and fairness among partners (O'Brien et al., 2006). Procurement governance encompasses procurement planning, evaluation processes, inspection and acceptance, procedures, record management. The information technology in itself plays a key role in enhancing the

processes integration and sharing information (Baily et al., 2015). From literature this study made the proposition that there is a significant combined effect of procurement governance, integrative supply chain technology and procurement performance on service delivery.

The conceptual framework for the study is shown in Figure 1. The key independent variable is procurement governance and the dependent variable is service delivery.

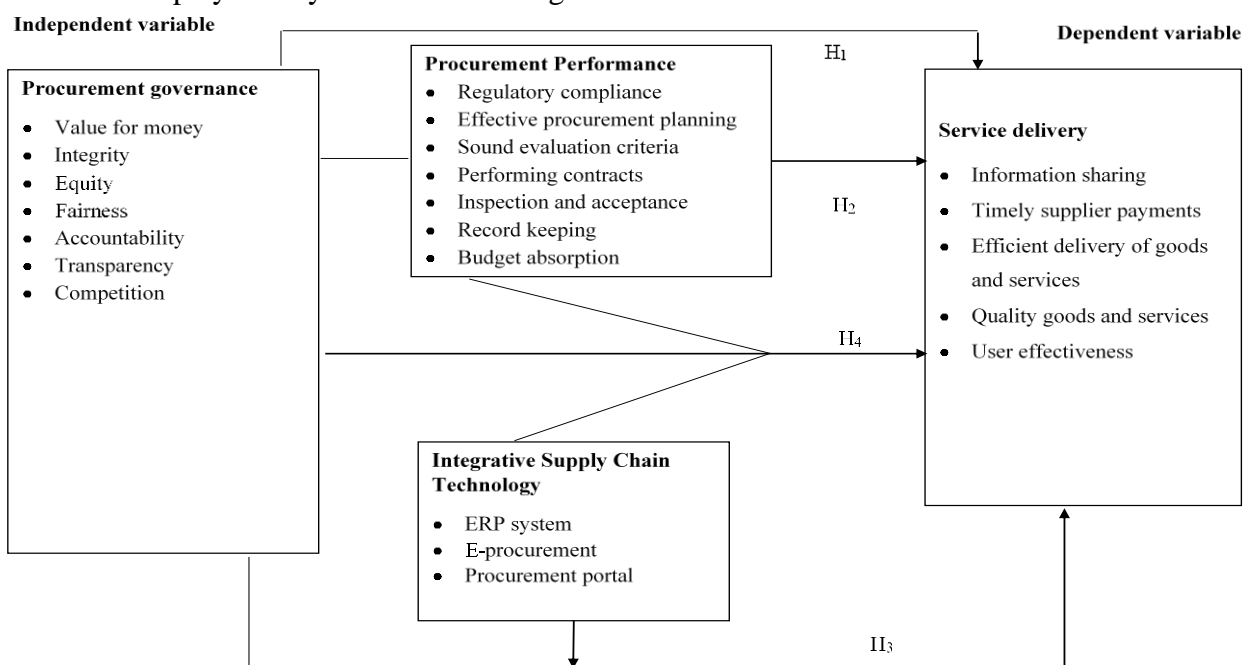


Figure 1: Conceptual Model
 Source (Author, 2021).

Research Methodology

This study adopted a descriptive cross-sectional survey research design. The population of this study was all public procuring entities in Kenya. There are 157 public procuring entities comprising government ministries, departments and agencies (MDAs). The MDAs constitute

21 ministries, 42 State Departments, and 94 State Agencies (Government of Kenya, 2019). A census will be the most appropriate for this study and with a population of 157, partial least squares structural equation modeling (PLS-SEM), becomes a suitable data analysis technique for the study (Wong, 2011).

Data analysis was completed using Statistical Package for the Social Sciences (SPSS) version 25 and SmartPLS 3.3.3. SEM analytical technique for testing hypothesis, and general test for model predictive relevance were all included in the subsequent inquiry. 138 completed responses were received, resulting in a response rate of 88%. From 138 returned questionnaires 16 responses were found to be unusable hence rejected and eliminated. Consequently, a total of 122 questionnaires provided the data for subsequent analysis. The study hypothesis was; procurement governance has no significant effect on service delivery.

Research Findings and Discussion

The fourth goal was to look at how procurement governance, integrative supply chain technology, and procurement performance interact to affect service delivery in Kenyan MDAs. To solve the research issue, a PLS-SEM structural model and a hypothesis were devised. Three exogenous latent constructs (procurement governance, integrative supply chain technology and procurement performance) and one endogenous latent construct (service delivery) were integrated in the model.

SEM-PLS aims to reveal strong R^2 values and their associated significant t-values in order to test the theoretically predicted model analytically. The path coefficients' statistical significance might thus be determined in this way. For the structural model's exogenous constructs, the R^2 and Q^2 values shifted the f^2 and q^2 effect sizes. SmartPLS version 3.3.3 was used to conduct the analysis using PLS-SEM. PLS-SEM was used to assess the hypothesized combined influence of

procurement governance, integrative supply chain technology, and procurement performance on service delivery.

H₄: Procurement governance, integrative supply chain technology and procurement performance have no significant combined effect on service delivery.

To test this hypothesis, the impact changes of each external latent variable on R^2 and cross-validated redundancy for endogenous latent variable Q^2 values were utilized. The following conclusions were drawn from this hypothesis assessment of the path coefficients for the combined model: $R^2 = 0.831$ ($t = 21.851$, $p < 0.001$). This suggests that the combined influence of procurement governance, procurement performance, and integrative supply chain technology may account for 83.1 percent of the variation in service delivery. This may be regarded as a high degree of predicting ability.

The current study's findings reveal that when all exogenous components are integrated, their combined influence on service delivery is stronger than the effect of individual exogenous constructs (procurement governance, procurement performance, and integrative supply chain technology). Although each exogenous variable adds a different amount to the overall R^2 of the endogenous variable, none of the values surpass the overall R^2 of any endogenous variable associated with service delivery. Procurement governance on its own results into R^2 value of 0.595, procurement performance with R^2 value of 0.808, and integrative supply chain technology with R^2 value of 0.506. This indicates that in direct relationships between procurement governance, procurement performance and integrative

supply chain technology, only 59.5%, 80.8% and 50.6% respectively of the variance in constructs can be attributed to service delivery.

The effect change of R^2 for each latent variable is measured by f^2 values. If procurement performance was to be excluded from the model, the f^2 effect size would be 0.608 indicating that the R^2 would reduce by this magnitude. In the same vein f^2 effect size when integrative supply chain technology is excluded is 0.130; and none effect (statistically insignificant) for exclusion of procurement governance.

Procurement performance is the only external variable that decreases the explained variation in service delivery more than any other. For this reason the most significant explanatory component in the present model is procurement performance. In contrast, excluding procurement performance would have the least impact on reducing explained variation in service performance. Procurement performance mediates the link between procurement governance and service delivery, which explains why this is the case.

The q^2 values are used to gauge how much of an impact Q^2 has. Changes in model fit or model reliability caused by excluding significant external variables are reflected in the q^2 values, and the Q^2 impact alters the model's predictive relevance. The q^2 values are the primary indicators of the exogenous variable's contribution to the model's ability to accurately forecast the endogenous variable. All of the exogenous factors' q^2 values are lower/none or small effect; procurement governance excluded q^2 was none (0.002), procurement

performance q^2 was small (0.087), and integrative supply chain technology q^2 was none (0.011) than the aggregate Q^2 (0.374) of endogenous variable service delivery, showing that the model's predictive relevance is better when all exogenous variables are included. These results disapprove the proposition of hypothesis H_4 above. Findings reveal that the overall effect of procurement governance, procurement performance and integrative supply chain technology on service delivery is significantly greater than that of the individual effect of constructs on service delivery, therefore H_4 is rejected.

Conclusion and Implications

The research found that the overall impact of procurement governance, integrative supply chain technology, and procurement performance on service delivery in Kenyan MDAs was much larger than that of a single component. There was an increase in competitive advantage owing to the complex and causally ambiguous nature of integrated linkages, which is why the study's constructs had such an impact on service delivery. The notion of complementary theory helps explain why procurement governance, integrative supply chain technology, and procurement performance have such a favorable influence on service delivery (Choi et al., 2008).

In their effort to improve service delivery, managers should purpose to improve procurement governance in terms of processes and procurement performance in reference to compliance. Therefore organization managers can use this research as a foundation to argue for the awareness and purposeful practice of better processes aimed at ensuring that

there is useful procurement plans, formulation of practical evaluation criteria for ease of contracts management. Today, organization managers are expected to continuously improve on the quality of goods and services and efficiency in delivering those goods using optimal resources. The study findings have brought out those parameters that organizations' leadership can use for management practice.

This study challenges procuring entities to pay close attention to the integrative supply chain implementation and support. The role of integrative supply chain in procuring entities as vehicles of enhanced service delivery is unprecedented. As organisations strive to take advantage associated with technology, huge investments of resources in terms of time money, workforce has been expensed (Bostrom et al., 2009). As management make decisions to invest and implement integrative supply chain technologies, considerations should be made by managers such as inadequate funding, inability to adopt dynamic strategies for change management and lack of trained resources to apply integrative technologies.

The research results are useful in corporate solutions between procuring entities and vendors. Procurement officials would also benefit from this research since it offers actual proof that procurement governance, integrative supply chain technology, and procurement performance have a direct impact on service delivery in Kenyan MDAs. It provides policymakers with a solid foundation on which to build rules that facilitate both procurement governance and service delivery.

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