The Effect of Supply Chain Integration on the Performance of Procurement in the County Governments of Western Region, Kenya

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https://doi.org/10.51867/ajernet.6.1.42

ABSTRACT

The study sought to assess the effect of supply chain integration (SCI) on the performance of the procurement functions in the county governments of Western Region, Kenya. The study is anchored on systems theory as the main theory. The study used a descriptive research design. The study was conducted in the four Counties in Western Region, Kenya. The counties included Bungoma, Busia, Kakamega, and Vihiga county governments. The population for this study consisted of 215 county officials located in the Western Region of Kenya. Stratified simple random sample was used in the investigation to sample 168 supply chain employees, procurement officers, and finance officers. Questionnaires were used as the main data collection instrument. A pilot study was carried out in Trans Nzoia County. The descriptive and inferential analysis of the data was conducted using SPSS version 26. The two forms of inferential analysis used in this study were simple linear regression, and Pearson correlation. The study found that supply chain integration significantly influenced procurement performance, with $t = 7.134$, $B = 0.570$, and $p < 0.05$, highlighting its positive impact on procurement functions. The study conclude that supply chain integration practices had a significant positive influence on procurement performance in county governments of western region. Supply chain integration provides internal integration, customer integration, external integration and horizontal integration. The study recommends that mutual goals with suppliers free from biasness should be adopted to ensure that collaborations between suppliers and companies exist. Customers should be part and parcel of procurement process to build a transparent procurement base. The study would enable policy makers aware of the vital role played by procurement practices with regard to procurement performance. The study's results may additionally empower the administration of diverse government agencies, such as county governments, to discern the fundamental elements that must be taken into account in supply chain management in order to maximize the utilization of public funds and resources.

Keywords: County Governments, Procurement Performance, Supply Chain Integration, Supply Chain Management Practices

I. INTRODUCTION

Procurement has taken on a more significant role in companies in recent years, especially in public agencies. The goals of public institutions are to increase their effectiveness, economy, accountability, and responsiveness to the requirements of its constituents (Barber et al.., 2017). The purchasing function is therefore expected to effectively and efficiently satisfy the needs of the public. However, a number of variables that cause delays in procurement as well as the procurement of unwanted or subpar goods and services have a detrimental impact on the procurement of goods and services in the majority of government institutions (Masindano et al., 2018). Consequently, it is important to remember that efficient supply chain management (SCM) is necessary for any firm to achieve its procurement objectives.

Without a doubt, the way in which procurement functions are performed has drawn interest from scholars as well as practitioners and decision-makers around the globe. Up to 25% of the Gross Domestic Products (GDPs) of developing nations are derived from public procurement. Additionally, they devote almost half of their budget to purchasing goods and services. However, 60% of quality systems in public procurement worldwide have not sufficiently produced the anticipated benefits; as a result, they are seen as a significant issue for government agencies (Sahoo & Vijayvargy, 2021).

Cousins *et al.* (2019) notes that public procurement reduces costs and yields value for money making it a major driver of economic activity across the European Union. To improve procurement performance and keep up with the growth of procurement activities, the public sector in the United States, for example, has seen a substantial transformation in the procurement function from a reactive to a strategic endeavor (Dimitriades & Maroudas, 2007). Reforms aiming at creating a robust and efficient supply chain and procurement system regulated by a clear legislative framework for efficacy and transparency have resulted from this (Hunja, 2003).

Kakwezi and Nyeko (2014) report that a symposium primarily centered on monitoring purchasing performance was held by the European Institute of Purchasing Management. The main topics of discussion at the conference were the financial and intangible components of procurement success. The performance of procurement was found to be significantly influenced by costs and savings. SCM has long been used by nations like the US, Canada, and the UK to manage their logistics and procurement.

In Africa, SCM has gained popularity since the 1930s in African procurement systems as a means of improving procurement performance. Hui (2014) points out that many public organizations have made significant investments in systems that can improve SCM since it is thought that SCM can operate as a direct link between suppliers, manufacturing, and sales, which accounts for a significant portion of organizational expenditures. Organizational supply chain and control policies as well as long-term SCM strategies involving top management required to be developed by the firms.

In Nigeria, Adeniran et al. (2024) found that effective SCM can cut operational expenses by up to 20%, resulting in considerable profit margin gains for SMEs. Adopting sustainable practices has become crucial for businesses worldwide, especially for small and medium-sized enterprises (SMEs), as they significantly enhance resilience and competitiveness. Mnyakin (2023) argues that incorporating sustainable practices into corporate operations can increase firm resilience by 30% and competitiveness by 25%, highlighting their crucial significance in business strategy. However, the implementation of sustainable supply chain management strategies encounters barriers such as inadequate infrastructure and poor coordination among stakeholders, which are worsened by systemic issues including uncertain political climates and regulatory shortcomings. In Uganda, Eyaa and Ntayi (2010) performed study among small and medium-sized firms (SMEs) and found that incorporating risk-taking into purchasing processes had an impact on Procurement performance.

In Kenya, the majority of major public organizations and institutions obtain their goods and services through procurement, which includes contracting, tendering, and purchase. The Public Procurement and Asset Disposal Act (PPADA) of 2015 and the Procurement Regulations of 2020 established the idea of competitive procurement in all government entities with the aim of guaranteeing fairness during the bidding process. However, because of wastes, poor value for money, and delays in procurement performance, the public and policy makers have sharply criticized the public sector's procurement performance (Mutua & Kirui, 2021; Mwangale & Okello, 2020).

1.1 Statement of the Problem

SCM is an indispensable methodology that enables the implementation of government policies. Government procurement accounts for an estimated 45% to 65% of public sector expenditures and 13% to 17% of GDP (Singh & Chan, 2022). As a result, governments are the largest consumers in an economy. Inefficiencies in SCM, particularly during the procurement phase, have contributed to the exacerbation of inequality in the Kenyan economy. This issue is closely linked to supply chain practices (SCP). It was expected that the implementation of devolved administration in Kenya would effectively allocate resources to the local level and enhance the quality of life for the populace of Kenya, as stated in a report cited by Mwangale and Okello (2020) and published by the Africa Centre for Open Governance (AfriCOG) in 2019. Nevertheless, this objective remains unfulfilled as corruption continues to squander around one-third of the national budget, with 80% of corruption cases reported to the Kenya Anti-Corruption Commission involving procurement-related offenses (AfriCOG, 2015).

Less than 10% of procured projects, and particularly contracts, were not completed in accordance with procurement compliance regulations, according to the PPRA Capacity Building Strategy Report, 2021–2022. In addition, procurement audit checks revealed that compliance with public procurement regulations in Kenya remains inadequate, a factor that contributes to the subpar procurement performance of numerous public institutions. The Annual Procurement Audit Report of 2022 by the Kakamega County government highlights that the procurement process frequently lacks transparency, enabling private persons to gain profits from projects and corporations to receive contracts without following appropriate procedures. Public Accounts Committee (2022) has emphasized that political interference and corruption can also lead to inadequate projects and the possible mismanagement of taxpayer funds. Previous research sought to connect SCM techniques with performance. Mutua and Kirui (2021), for example, discovered a positive and significant correlation between supply chain management practices (SCMP) and the performance of flour milling enterprises in Nairobi County, Kenya. Similarly, Wainaina et al. (2021) discovered that organizational performance and SCM produced comparable outcomes. This study seeks to explore supply chain management and its influence on the performance of the procurement function in County government of Kakamega, Kenya.

1.2 Research Objective

To assess the effect of supply chain integration on the performance of the procurement in the county governments of Western Region, Kenya.

1.3 Research Hypothesis

Ho_1: Supply chain integration does not significantly affect the performance of the procurement of county governments in the Western Region, Kenya.

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Systems Theory

Systems theory was employed in the study. Ludwig von Bertalanffy who lived between 1901 and 1972 was the originator of general systems theory. Systems theory views the supply chain as a complex adaptive system. It refutes the idea that organizations are static and puts forth an open systems perspective, contending that time and external variables affect firms at the organizational, group, and/or individual levels; additionally, it argues that a dynamic system both modifies and is modified by its surroundings (Holweg, 2001).

According to New and Westbrook (2004), feedback is required along the supply chain to prevent the system from decaying or becoming ineffective. SCI is one method of achieving this feedback. A fundamental tenet of this theory is synergy, which asserts that a system is fundamentally distinct and behaves differently than the sum of its component pieces. In particular, the cumulative production of the entire system is frequently greater than the combined output of individual subsystems. An important element of systems theory is adaptability a system's ability to alter and respond to changing situations. In the context of supply chains, integration initiatives should focus on increasing resilience to shocks and market fluctuations (New & Westbrook, 2004). This could include creating adaptable processes, encouraging collaboration among partners, and leveraging technology for real-time visibility and decision-making.

Systems theory warns against the danger of optimizing individual components at the expense of the overall system's performance. SCI aims to strike a balance between optimizing efficiency within each function such as procurement, production, logistics and optimizing the entire chain for maximum value delivery to customers.

Tang and Tan (2017) explores the application of systems theory principles in achieving SCI. It discusses the interconnectedness of supply chain components, the importance of feedback mechanisms, and the emergence of integrated behaviors. The authors emphasize the need for a holistic approach to integration, considering both internal and external factors impacting the supply chain.

Wong et al. (2015) examines the relationship between SCI and performance, with a focus on the moderating role of systems thinking. It argues that organizations with a systemic perspective are better equipped to achieve the benefits of integration, such as improved responsiveness and efficiency. The study provides empirical evidence supporting the importance of systems thinking in enhancing Procurement performance.

2.2 Empirical Review

Integration of the supply chain entails the harmonization of the positions, locations, activities, and affiliations of an organization with its suppliers, customers, and other participants in its channel. According to the literature on SCM, integration is intricately linked to the execution of tasks across multiple domains, with each domain contributing to the effort required. Leuschner et al. (2013) note that integrative actions can happen because of many things, including the flow of products, planning and control, organization, and information. According to Bowersox and Closs (2006), the integration of suppliers and consumers should be the initial step in the supply chain process. Continual standardization of all internal logistical processes, effective information exchange, and strategic alliances with suppliers and customers can facilitate both internal and external integration.

SCI is a collaborative approach to coordination that pertains to the unification of an organization's activities, locations, suppliers, consumers, and other channel partners' and relations, operations, and processes (Ballou, 2004). To reduce supply chain risks and interdependencies with external business partners, organizations may implement strategic measures such as backward and forward integration (Narasimhan & Kim, 2002). By means of backward or forward integration, organizations can essentially strengthen their ability to make decisions pertaining to critical resources and skills that are vital to the organization's competitiveness and obtain greater control over a greater portion of the supply chain.

Frohlich and Westbrook (2001) identified five discrete supplier and customer integration (SCI) methodologies, which they labeled "arcs of integration" (where "arc" signifies the extent of supplier and customer integration). Based on their research findings, companies that maximized the integration between suppliers and consumers attained the utmost level of operational effectiveness. Subsequent research conducted by Elias et al. (2012) validated the aforementioned findings, illustrating that manufacturers characterized by substantial integration exhibited superior operational performance in terms of inventory turnover, transaction costs, and delivery time compared to their counterparts with limited integration. Dimensional lines have been utilized to examine the relationship between SCI and SCP. Some researchers have observed a negative correlation, no correlation, or a U-shaped relationship between SCI and organizational performance. Conversely, others have observed positive effects within specific categories. Previous

studies have established a positive correlation between the internal integration component of SCI and business performance, which serves as an indicator of organizational performance (Flynn *et al.*, 2010; Narayanan *et al.*, 2011) discovered a U-shaped inverse relationship in this regard.

SCI may not be completely represented by a single construct on account of its multidimensional nature. Kagume and Wamalwa (2018), on the other hand, view it through the lens of enterprise behavior and relationships, as opposed to the activity-based perspectives of supplier, customer, and internal integration that Wong et al. (2015) and other scholars hold. Information systems may be utilized in the development of business networks to ensure the seamless transmission of financial, material, and information resources in order to deliver value to stakeholders in the supply chain. Inability to integrate supply chains could result in the loss of benefits associated with SCI for organizations. Integration issues predominantly arise due to inadequate commitment or understanding of the goals and intentions of the supply chain.

Moreover, Leuschner et al. (2013) established a correlation between SCI and organizational efficacy that was both positive and robust. Supply chain information systems provide support for the hypothesis that a lean/agile strategy enhances the efficacy of the supply chain, as stated by Yawar and Seuring (2017). In other words, despite exerting a substantial influence on Procurement performance, the SCI strategy merely strengthens the connection between information integration and Procurement performance.

Additionally, Qrunfleh and Tarafdar (2014) and Flynn et al. (2010) identified a correlation between the financial and operational success of supply networks and SCI. According to Qi et al. (2017), businesses can benefit from integrated supply chains when they aim to establish agile or lean supply networks. A lean methodology for supply chain planning prioritizes integration with the objective of enhancing supply chain efficiency, as opposed to focusing on quality, cost, or delivery time. However, the authors further argued that agile supply networks facilitate the maintenance of flexible working relationships between businesses and their supply chain partners.

Cheruiyot (2013) asserts that disconnected manufacturing or distribution processes, insufficient relationships with suppliers and customers, and deficient supplier and customer relationships are no longer adequate for the subsequent performance of the supply chain. A deficiently planned supply chain may result in an array of complications, such as substantial inventory accumulations and backlogs, erroneous product forecasts, inconsistent capacity, inadequate customer support, ambiguous production timetables, and on occasion, unsuccessful sales. In an attempt to improve the country's social and economic climate, the Kenyan government has been undergoing a structural restructuring process since the mid-1980s.

According to Elias *et al.*, (2012), this process is having a profound impact on Kenya's manufacturing sector. This integration ultimately results in greater profit margins by enhancing flexibility and strict inventory management, as well as increasing competitiveness in a variety of business contexts. Cheruiyot (2013) asserts that the small-holder tea industry in Kenya is employing a range of SCM strategies on an international scale. Since supply chains don't fight with businesses, they compete with each other. Cheruiyot, (2013) gives Kenyan organizations useful tips on how to better integrate their supply chains. One of the recommendations is to implement internal, supplier, and consumer integration as a strategic mechanism to gain a competitive edge. Additionally, it is emphasized by (Kimani, 2013) that for a supply chain to achieve its utmost effectiveness and efficiency, integrated and comprehensive administration of material, bank, and information flows is essential. Moreover, this improved financial performance. Okello and Were (2014) state that companies should spend money on cutting edge technologies to help with large-scale production, transportation, and storage. Moreover, he posits that prioritizing the enhancement of personnel capabilities is crucial for effectively addressing the swiftly progressing technologies. Cooperation among supply chain participants is once more emphasized as critical, especially in the domains of distribution and transportation (Kimani, 2013). The objective of this study is to assess the impact of SCI on the efficiency of procurement processes in county administrations of Kenya's Western Region.

III. METHODOLOGY

3.1 Research Design

A descriptive survey research approach was employed. The study's research design is deemed appropriate as it investigated the influence of the independent variable on the dependent variable subsequent to the collection of primary data through the utilization of a structured questionnaire.

3.2 Study Location

The four counties that formerly comprised Kenya's Western Province hosted the study. Bungoma, Busia, Kakamega, and Vihiga county governments are among the counties. The reason for the study's necessity in the region is the recent intense criticism of County Governments' public procurement practices and performance (Kagume & Wamalwa, 2018).

3.3 Target Population

The population for this study consisted of 215 county officials located in the Western Region of Kenya. These officials were categorized into three groups: supply chain officers, procurement officers, and finance officers. The role that each population unit performs in terms of management determined which units are chosen. As shown in Table 1, there was 120 supply chain officials, 44 procurement officers, and 51 finance officers.

Table 1

Target Population

Strata	Bungoma	Kakamega	Busia	Vihiga
Supply Chain Officers	30	35	25	30
Procurement Officers	11	11	11	11
Finance Officers	12	15	11	13
Total	**53**	**61**	**47**	**54**

3.4 Sampling Technique and Sample Size

The study employed a stratified simple random sampling to select the sample. In order to ensure that a more accurate sample is taken from a fairly diverse demography and to produce more accurate estimations of broad population parameters, a stratified simple random selection approach was utilized. Stratification attempts to lower the standard error by offering some variance control. Three groups of people made up the study's population: finance officers, procurement officers, and supply chain workers. Subsequently, each stratum employed the basic random sampling procedure to select 140 individuals from a target population of 215. Using the Yamane formula, a sample of 168 respondents was achieved.

Table 2

Sample Size

County	Categories of Respondents	Total
Bungoma	Supply Chain officers Procurement officers Finance officers	23 9 9
Kakamega	Supply Chain officers Procurement officers Finance officers	27 9 12
Busia	Supply Chain officers Procurement officers Finance officers	20 9 9
Vihiga	Supply Chain officers Procurement officers Finance officers	23 9 10
Total		**168**

3.5 Data Collection instruments

Given that primary and secondary data are usually complementary, the study utilized both forms of information. Primarily quantitative data regarding the relationship between procurement function performance and SCM techniques was collected through questionnaires. A questionnaire is the best way to collect data because it gives the researcher enough time to get answers from all the people who fill it out. The researcher handed out the questionnaire to the different respondents with the help of trained research assistants. All constructs were rated on a five-point Likert-type scale from 1 (Strongly Agree) to 5 (Strongly Disagree), with 5 representing Strongly Agree, 4 representing Agree, 3 unclear, 2 representing Disagree, and 1 representing Strongly Disagree.

The descriptive and inferential analysis of the data was conducted using SPSS version 26. Descriptive statistics was employed by the researcher, encompassing measurements of dispersion, and central tendency. The three forms of inferential analysis to be used in this study are multiple linear regression, simple linear regression, and Pearson correlation.

3.6 Ethical Consideration

The study was carried out in accordance with established ethics, which are very important, especially when working with humans. Professional standards were maintained throughout the duration of the study. Throughout the investigation, each participant in the study was treated with respect and privacy. The study would ensure that all sources used to get private information was safeguarded and kept secret. The subjects gave the researcher their consent before any data was collected. The researcher guaranteed that the research adheres to the ethical guidelines of the participants

and promotes the safeguarding of intellectual property rights by referencing multiple sources of information provided by the writers. Academic dishonesty in the form of falsification, deceit, misleading authorship, and improper data collection methods was avoided at all costs.

IV. FINDINGS & DISCUSSION

The study determined the influence of supply chain integration on the performance of procurement in the county governments. The results are outlined as follows;

4.1 Demographic Information of the Respondents

4.1.1 Academic Qualification of the Respondents

The study sought to establish the academic qualification of the respondents. Table 3 summarizes the findings.

Table 3

Level of Education

Education	Frequency	Percent
Certificate level	4	3.5
Diploma level	29	25.5
Bachelor's degree level	73	64.0
Masters level	8	7.0
Total	**114**	**100.0**

From the results in Table 3, the study established that graduates constituted of 64%, diploma holders were 25.5%, those with masters 7% and certificate at 3.5%. The level of education of respondents was adequate to enable internalize Supply Chain Collaboration Practices, Supply chain integration, Supplier Risk Management Practices and Lean Supply Management attributes towards procurement performance.

4.1.2 Working Experience of the Respondents

The study established the working experience of the respondents. The results are summarized in Table 4.

Table 4

Working Experience

Experience in Years	Frequency	Percent
Less than 1 year	6	5.3
1-5 years	14	12.3
5-10 years	94	82.4
Total	**114**	**100.0**

From the results in Table 2, the results established the working experience of respondents where those with an experience of less than 1 year were 5.3%, 1-5 years 12.3 years as 5-10 years' experience had the majority at 82.4%. The level of experience of most employees was adequate to enable tell supply chain management practices against procurement performance.

4.2 Descriptive Analysis

4.2.1 Supply Chain Practices

The study sought to establish the supply chain practices in the county governments of Western Region, Kenya. Questionnaire constructs relating to supply chain practices were rated on a five-point Likert-type scale from 1 (Strongly Agree) to 5 (Strongly Disagree), with 5 representing Strongly Agree, 4 representing Agree, 3 unclear, 2 representing Disagree, and 1 representing Strongly Disagree. Descriptive analysis was aided by frequency, percentage, mean and standard deviations. The results are summarized in Table 5.

Table 5

Supply Chain Practices

Supply Chain Collaboration	SA	A	FA	D	SD	Mean	Std. Dev.
The company sets mutual goals with suppliers	86 (75.4%)	26(22.8)	0(0%)	2(1.8%)	0(0%)	3.91	1.89
There is clear coordination of company activities	76(68.4%)	36(31.6%)	0(0%)	0(0%)	0(0%)	4.17	1.90
The company shares resources with other companies	86(75.4%)	26(22.8%)	2(1.8%)	0(0%)	0(0%)	4.13	1.83

From the results, on whether the company sets mutual goals with suppliers 75.4% strongly agreed, 22.8% agreed as 1.8% disagreed and none was fairly agree or strongly disagreed. On whether there is clear coordination of company activities 68.4% strongly agreed, 31.6% agreed and none was fairly agree, disagreed and strongly disagreed. On whether the company shares resources with other companies 75.4% strongly agreed, 22.8% agreed, 1.8% were fairly agree, none took a disagreement decision. Generally all the standard deviation values were above 1.0 an implication that all supply chain collaboration approaches contributed to procurement performance in the county government.

The findings concur with a studies done by Skjoett-Larsen *et al.* (2003) as well as Yaakub and Mustafa (2015) who found out that supply chain collaboration practices have a positive and significant effect on procurement performance.

4.2.2 Supply Chain Integration and Procurement performance

The study had to establish whether the effect of supply chain integration affected performance of the procurement in the county governments of Western Region, Kenya. This is presented Table 6.

Table 6

Supply Chain Integration

Supply Chain Integration	SA	A	FA	D	SD	Mean	Std. Dev.
There is integration of activities within the company	88(77.2%)	26(22.8%)	0(0%)	0(0%)	0(0%)	4.27	1.85
Strategic alliances with suppliers have been built by the firm	44(38.6%)	34(29.8%)	18(15.8%)	4(3.5%)	14(12.3%)	3.68	1.94
The company provides information to suppliers	80(70.2%)	32(28.0%)	2(1.8%)	0(0%)	0(0%)	3.95	0.97
Information exchange through information system integration with suppliers have been established	92(80.7%)	20(17.5%)	0(0%)	0(0%)	2(1.8%)	3.93	1.02

Results in Table 6 indicate results on whether supply chain integration affects procurement performance. Regarding whether there is integration of activities within the company 77.2% strongly agreed, 22.8% agreed, none disagreed, strongly disagreed or was fairly agree. On whether strategic alliances with suppliers have been built by the county leadership 38.6% strongly agreed, 29.8% agreed 15.8% were fairly agree, 3.5% disagreed and 12.3% strongly disagreed. On whether counties provides information to suppliers 70.2% strongly agreed, 28.0% agreed, 1.8% were for fairly agree while none disagreed and none strongly disagreed. On whether counties information exchange through information system integration with suppliers have been established 80.7% strongly agreed, 17.5% agreed, 1.8% strongly disagreed while none was fairly agree and none disagreed. Basically, most responses implies agreement though a standard deviation of 0.97 for supplier information shows a disagreement to imply counties information on suppliers was scanty.

These findings are in line with studies done by Bowersox and Closs (2006), Ballou (2004) and Narasimhan and Kim (2002) who found out that supply chain integration has a positive and significant effect on procurement performance

4.2.3 Procurement Performance

The study provided five statements that examined procurement performance in the county governments of Western Region, Kenya. This is provided in table 7

Table 7

Procurement Performance

Procurement performance	SA	A	FA	D	SD	Mean	Std. Dev.
There is punctual shipment of goods and services	80(70.2%)	34(29.8%)	0(0%)	0(0%)	0(0%)	3.77	1.85
In general, user departments are pleased with the items and services acquired	70(61.4%)	44(38.6%)	0(0%)	0(0%)	0(0%)	3.78	1.86
The County Government acquires goods and services at the current market price	86(75.4%)	28(24.6%)	0(0%)	0(0%)	0(0%)	4.21	1.02
The appropriate quantity of items is acquired	76(66.7%)	36(31.6%)	2(1.8%)	0(0%)	0(0%)	3.80	1.69
The County Government acquires high-quality goods and services	76(68.4%)	32(28.1%)	0(0%)	0(0%)	0(0%)	3.79	0.99

Table 7 shows results on whether procurement performance was realized in the county governments of Western Region, Kenya. On the statement that there is punctual shipment of goods and services 70.2% strongly agreed, 29.8% agreed, 12.3% none was fairly agree, disagreed or strongly disagreed.

On whether in general, user departments are pleased with the items and services acquired 61.4% strongly agreed and 38.6% agreed none strongly disagreed, disagreed and fairly agree. On whether county government acquires goods and services at the current market price 75.4% strongly agreed, 24.6% agreed and none was fairly agree, disagreed or strongly disagreed. Lastly regarding whether the county government acquires high-quality goods and services 66.7% strongly agreed, 31.6% agreed, 1.8% fairly agree and none disagreed or strongly disagreed. The study hence established that procurement performance was noticeable through the majority agreed note based on mean values and standard deviation values.

4.3 Linear Regression Analyses

Regression analysis was done to establish effects of supply chain integration practices on procurement performance of county governments of Western region, Kenya. Results were presented in Table 8.

Table 8

Effect of Supply Chain Integration on Procurement Performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.570[a]	.324	.318	.66489	.324	50.897	1	112	.000

a. Predictors: (Constant), Supply chain integration

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.500	1	22.500	50.897	.000[b]
	Residual	46.860	112	.442		
	Total	69.360	113			

a. Dependent Variable: Procurement performance

b. Predictors: (Constant), Supply chain integration

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.345	.451		.765	.446
	Supply chain integration	.908	.127	.570	7.134	.000

a. Dependent Variable: Procurement performance

From Table 8, the R square which is coefficient of determination shows that up to 32.4% of variation in procurement performance is significantly accounted for by supply chain integration (R^2=0.324, P=0.000; P<0.05). This indicates that supply chain integration has significant effect of the procurement performance

The F test gave a value of 50.897, which supports the goodness of fit of the model in explaining the variation in the dependent variable as indicated in Table 8. It also means that supply chain integration is a useful predictor of procurement performance.

The unstandardized regression coefficient (β) value of supply chain integration was 0.908 and significance level of p<.05. This indicated that a unit change in supply chain integration would result to change in procurement performance by 0.908 in the same direction. The regression equation to estimate the procurement performance as a result of supply chain integration was hence stated as:

Procurement performance = 0.345+0.908 supply chain integration

From the results, it evident supply chain integration has significant positive influence on procurement performance of county governments of Western region, Kenya. Therefore $H_{01:}$ Supply chain integration does not significantly affect the performance of the procurement of county governments in the Western Region, Kenya was rejected at 0.010< 0.05. Findings concur with those of Qi et al. (2017) who found significant effect of supply chain integration on businesses. It disagrees with Cheruiyot (2013) who disconnected a relationship between supply chain integration and procurement performance of manufacturing firms.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

The research findings identify that the integration of supply chains has an immense impact on the procurement performance of county governments within the Western part of Kenya. The information indicated that a substantial number of the participants (77.2%) indicated strong agreement in relation to the coming together of operations within their entities, while 22.8% agreed. It is noteworthy to mention that all participants expressed agreement, with no instances of dissent, strong dissent, or indifference, which indicates a clear consensus regarding the existence of supply chain integration practices.

Statistical analysis produced convincing evidence regarding the significant influence of supply chain integration on procurement performance, as revealed by an R^2 value of 0.324 and a p-value of 0.000 ($p<0.05$). This reveals that 32.4% of procurement performance variances are caused by supply chain integration. The correlation points towards the fact that it is necessary to come together to perform supply chain activities for better efficiency, shorter lead times in procurement, increased transparency, and most efficient utilization of county government resources.

The research emphasizes the significance of four crucial dimensions to supply chain integration, including internal, customer, external, and horizontal integration. Internal integration promotes a combined alignment of disparate departments, leading to improved planning and execution of procurement activities. Customer integration greatly enhances stakeholder engagement, ensuring that procurement processes align with the demands of citizens, suppliers, and service providers. External integration makes the relationship between supplier and regulatory bodies better, thereby improving procurement effectiveness and compliance with established standards and guidelines. Horizontal integration, as characterized by collaboration among counties, promotes exchange of resources, the benefits accruing from bulk purchasing, and knowledge transfer, thereby significantly contributing to regional development.

Contrasting with these outcomes, county governments in the Western region should place supply chain integration improvement as a strategic objective to enhance procurement performance. This objective can be achieved through the adoption of electronic procurement systems, improving coordination between departments, improving supplier relationships, and encouraging collaboration between counties. Policymakers also need to develop distinct frameworks and policies that enable supply chain integration while adhering to best practices in procurement.

Finally, supply chain integration is a key driver of enhanced procurement performance in county governments as evidenced by qualitative evidence and quantitative analysis. Greater integration efforts will not only enhance efficiency in operations but also enhance accountability, cost, and the quality of service delivery in county governments. Therefore, concerted efforts towards supply chain integration will be of critical significance to the entire government and economic development in the Western region of Kenya.

5.2 Recommendations

Arising from the results and conclusions above, the study recommends that;

County governments must improve interdepartmental coordination among departments involved in procurement activities to improve efficiency, prevent delays, and optimize the utilization of resources. There must be frequent communication with suppliers, contractors, and service providers to improve transparency, accountability, and quality of service in the procurement process. County governments must also formulate strategic partnerships with suppliers and regulatory bodies to ensure compliance, value-for-money procurement, and ability to absorb supply chain disruptions.

Counties need to work together through collaborative procurement arrangements, joint use of resources, and knowledge sharing to increase efficiency and bargaining capacity. County governments need to adopt e-procurement systems to increase automation, minimize risk of corruption, and facilitate streamlined conduct of procurements. County governments need to formulate policies that allow supply chain integration and ongoing training of procurement personnel for effective application.

REFERENCES

Adeniran, R. T., Adeyemi, S. N., & Oyerinde, A. J. (2024). Technological innovations, entrepreneurial innovativeness, and supply chain management of some selected SMEs in Lagos State, Nigeria. *International Journal of Science, Engineering and Technology, 12*(3), 1–12.

AfriCOG. (2015). *The annual governance report, Kenya governance report.* Africa Centre for Open Governance.

Ballou, R. H. (2004). *Business logistics/supply chain management: Planning, organizing, and controlling the supply chain* (5th ed.). Pearson/Prentice Hall Inc.

Barber, K. D., Garza-Reyes, J. A., Kumar, V., & Abdi, M. R. (2017). The effect of supply chain management practices on supply chain and manufacturing firms' performance. *Journal of Manufacturing Technology Management, 28*(5), 577–609.

Bowersox, D. J., & Closs, D. J. (2006). *Logistical management: The integrated supply chain process*. McGraw-Hill.

Cheruiyot, K. P. (2013). Impact of integrated supply chain on performance at Kenya Tea Development Agency. *International Journal of Social Sciences and Entrepreneurship, 1*(5), 194–203.

Cousins, P. D., Lawson, B., Petersen, K. J., & Fugate, B. (2019). Investigating green supply chain management practices and performance: The moderating roles of supply chain ecocentricity and traceability. *International Journal of Operations & Production Management, 39*(5), 767–786.

Dimitriades, D. S., & Maroudas, T. (2007). Psychological empowerment among public employees: An exploratory study in Greece. *Transforming Government: People, Process and Policy, 1*(4), 377–400. https://doi.org/10.1108/17506160710839196

Elias, S., Smith, W., & Barney, C. (2012). Age as a moderator of attitude towards technology in the workplace: Work motivation and overall job satisfaction. *Behaviour & Information Technology, 31*(7), 453–467. https://doi.org/10.1080/0144929X.2010.513419

Eyaa, S., & Ntayi, J. M. (2010). Procurement practices and procurement performance of SMEs in Kampala. *Asian Journal of Business Management, 2*(4), 2–8.

Flynn, B. B., Huo, B., & Zhao, X. (2010). The impact of supply chain integration on performance: A contingency and configuration approach. *Journal of Operations Management, 28*(1), 58–71.

Frohlich, M. T., & Westbrook, R. (2001). Arcs of integration: An international study of supply chain strategies. *Journal of Operations Management, 19*(2), 185–200.

Holweg, M. (2001). Dynamic distortions in supply chains: A cause-and-effect analysis. In D. Taylor & D. Brunt (Eds.), *Manufacturing operations and supply chain management—The LEAN approach* (pp. 106–138). Thomson.

Hui, M. (2014). Supply chain management and its relationship to logistics. *Journal of Business Logistics, 49*(7), 34–39.

Hunja, R. R. (2003). Obstacles to public procurement reform in developing countries. Kluwer International.

Kagume, J., & Wamalwa, N. (2018). Public procurement in Kenya: Analysis of the Auditor General's reports. *Institute of Economic Affairs.*

Kakwezi, P., & Nyeko, S. (2014). *Procurement process and performance: Efficiency and effectiveness of the procurement function.* Makerere University Press.

Kimani, C. W. (2013). Supply chain management challenges in Kenya petroleum industry: Case of National Oil Corporation of Kenya. *International Journal of Social Sciences and Entrepreneurship, 1*(3), 231–246.

Leuschner, R., Rogers, D., & Charvet, F. (2013). A meta-analysis of supply chain integration and firm performance. *Journal of Supply Chain Management, 49*(6), 10–11. https://doi.org/10.1111/jscm.12013

Masindano, L., Makokha, E. N., & Namusonge, G. (2018). Factors affecting public procurement performance in Trans Nzoia County Government. *European Journal of Business and Management, 10*(9), 70–74.

Mnyakin, M. (2023). Implementing sustainable supply chain 4.0 in small and medium-sized enterprises (SMEs): A review. *International Journal of Intelligent Automation and Computing, 6*(1), 1–16.

Mutua, K., & Kirui, C. (2021). Supply chain management practices and performance of flour milling companies in Nairobi County, Kenya. *Journal of Supply Chain Management, 23*(6), 17–19.

Mwangale, F. W., & Okello, D. J. (2020). Influence of supply chain management practices on procurement performance in the County Government of Bungoma, Kenya. *The Strategic Journal of Business & Change Management, 7*(3), 167–179.

Narasimhan, R., & Kim, S. W. (2002). Effect of supply chain integration on the relationship between diversification and performance: Evidence from Japanese and Korean firms. *Journal of Operations Management, 20*(3), 303–323.

Narayanan, S., Jayaraman, V., Luo, Y., & Swaminathan, J. M. (2011). The antecedents of process integration in business process outsourcing and its effect on organizational performance. *Journal of Operations Management, 29*(2), 3–16.

New, S., & Westbrook, R. (Eds.). (2004). *Understanding supply chains: Concepts, critiques, and futures.* OUP Oxford.

Okello, J. O., & Were, S. (2014). Influence of supply chain management practices on performance of the Nairobi Securities Exchange's listed food manufacturing companies in Nairobi. *International Journal of Social Sciences and Entrepreneurship, 1*(11), 107–128.

Public Accounts Committee. (2022). *Report on procurement of external audit services for the Office of the Auditor General for the financial year 2021, 2022.* Parliament of Kenya.

Qi, Y., Huo, B., Wang, Z., & Yeung, H. Y. J. (2017). The impact of operations and supply chain strategies on integration and performance. *International Journal of Production Economics, 185*, 162–174.

Qrunfleh, S., & Tarafdar, M. (2014). Supply chain information systems strategy: Impacts on procurement performance and organizational performance. *International Journal of Production Economics, 147*, 340–350.

Sahoo, S., & Vijayvargy, L. (2021). Green supply chain management practices and its impact on organizational performance: Evidence from Indian manufacturers. *Journal of Manufacturing Technology Management, 32*(4), 862–886.

Singh, P. K., & Chan, S. W. (2022). The impact of electronic procurement adoption on green procurement towards sustainable procurement performance—Evidence from Malaysian ISO organizations. *Journal of Open Innovation: Technology, Market, and Complexity*, *8*(2), 61.

Skjoett-Larsen, T., Thernøe, C., & Andresen, C. (2003). Supply chain collaboration: Theoretical perspectives and empirical evidence. *International Journal of Physical Distribution & Logistics Management*, *33*(6), 531–549. https://doi.org/10.1108/09600030310492788

Tang, C. F., & Tan, E. (2017). Tourism-led growth hypothesis: A new global evidence. *Cornell Hospitality Quarterly*, *59*(2), 193-896. https://doi.org/10.1177/1938965517735743

Terjesen, S., Patel, P. C., & Sanders, N. R. (2012). Managing differentiation-integration duality in supply chain integration. *Decision Sciences*, *43*(2), 303–339.

Van der Vaart, T., & Van Donk, D. P. (2004). Buyer focus: Evaluation of a new concept for supply chain integration. *International Journal of Production Economics*, *5*(4), 45-56.

Wainaina, C. M., Bett, E., & Njehia, B. (2021). Supply chain management and organisational performance: Mediation effect of competitive advantage. *International Journal of Supply Chain Management*, *10*(1), 119-130.

Wong, C. W., Lai, K. H., Cheng, T. C. E., & Lun, Y. V. (2015). The role of IT-enabled collaborative decision making in inter-organizational information integration to improve customer service performance. *International Journal of Production Economics*, *15*(9), 56-65.

Yaakub, S., & Mustafa, H. K. (2015). Supply chain risk management for SMEs. *Academic Journal of Interdisciplinary Studies*, *4*(1S2), 151. https://www.richtmann.org/journal/index.php/ajis/article/view/6348

Yawar, S. A., & Seuring, S. (2017). Management of social issues in supply chains: A literature review exploring social issues, actions, and performance outcomes. *Journal of Business Ethics*, *141*(3), 621-643.