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Determine Electronic Procurement, Top Management Support and Supply Chain Performance of Selected Coast County Governments of Kenya

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ABSTRACT

The general objective of the study was to investigate the moderating effect of top management support on electronic procurement and the performance of supply chain performance of coast counties of Kenya. The specific objectives of the study were to determine effect of e-tendering practice, e-ordering processing, e-material management practice, e-supplier management practice, e- payment practice and moderated by top management support on the performance of supply chain performance of selected coast county governments of Kenya. The study employed the transaction cost theory, technology acceptance model, material management theory and the theory of performance. The target population was 561 employees in Kwale, Kilifi, Mombasa and Tana-River counties. The Yamane sample size determination formula was used to get a sample size of 329 employees. The study found out that e-tendering practice, e-ordering practice, e-material management practice, e-supplier management practice and e- payment practice positively and significantly affect supply chain performance of coast county governments of Kenya. Moderated multiple linear regression results indicated that top management support positively and significantly moderate the relationship between e-tendering practice, e-ordering practice, e-material management practice, e-supplier management practice, e- payment practice and supply chain performance of the Coast County governments. The study concluded that e-tendering practice, e-ordering practice, e-material management practice, e-supplier management practice, e- payment and top management support positively and significantly affect performance of the coast county governments of Kenya. The study recommended that counties should implement e-tendering practice, e-ordering practice, e-material management practice, e-supplier management practice, e- payment practice and encourage top management support so as to increase their supply chain performance.

INTRODUCTION

SCM refers to the planning, organization, staffing and control of the entire activities and all other process involved to ensure that movement of goods, services, information and other exchanges are effected up to the hands of final consumers. SCM performance therefore refers how efficient, flexibility, transparency, effectiveness the supply chain can achieve. SCM performance focusses achievement like low cost -whereby the final customers within that chain enjoy low final unit price while firms in that chain enjoy market leadership due to competitive price of their goods and service all around the Globe. Quality – where goods, services guarantees maximum satisfaction of the customers or even delightment due to their ability to meet customers' expectations e.g. performance, durability, serviceability, user friendly etc. Timeliness-whereby goods and services reaches the final customers within the time stipulated to avoid inconveniences, Flexibility - whereby the players in the chain can change or redesign customer specification with promptness, Visibility –whereby all players in the chain can on the know about the location of the goods at any given time at any part of the world, information – whereby all players can access to any information equally through data transparency .Other values like availably of transport medium, eg railways ,roads, sea, lakes, Air, rivers, sound banking system ,security, literacy level etc. If SCM can guarantee all these and others, then it becomes feasible to achieve the set goal and objective envisaged.

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Electronic procurement is the process of electronically purchasing the goods and services needed for an organization's operation (Beauvallet, Boughzala & Assar, 2011). It entails implementing electronic means to process, publish, exchange and store information concerning procurement without a paper medium. Hence, in concrete terms it consists of publishing calls for tenders on the internet, sending out documents and specifications. It also refers to the use of internet-based system to carry out individual or all stages of procurement process, including search, sourcing, negotiation, ordering, receipt, and post-purchase review (Miyoko, Marika & Litondo, 2019). This has been facilitated by the growth in information and communication technology which has led to electronic commerce, commonly referred to as e-commerce. E-procurement in the public sector has seen rapid growth in recent years. Act 590 of Louisiana's 2008 Regular Legislative Session requires political subdivisions to make provisions for the receipt of electronic bids (Krejcie & Morgan, 2017). E-procurement in the public sector is emerging internationally, hence, initiatives have been implemented in Singapore, UK, Malaysia, Australia and European Union. E-procurement projects are often part of the country's larger e-Government efforts to better serve its citizens and businesses in the digital economy. Many public organizations have adapted the use of computers in managing their procurement process realizing many benefits.

Top management refers to the highest level of leadership within an organization, typically consisting of the CEO, president, board of directors, and other senior executives. These individuals are responsible for setting the overall direction, strategy, and vision for the company. They make major decisions that impact the entire organization, such as entering new markets, launching products, or reorganizing the structure. Top management also serves as a bridge between the organization and its external stakeholders, including investors, regulatory bodies, and the public. They ensure that the company is aligned with its long-term goals while managing risks and ensuring profitability. Additionally, they shape the company's culture and play a key role in motivating and guiding lower levels of management to implement strategies effectively. Support from the most senior staff of an organization or business, including the heads of various divisions or departments led by the chief executive (Tarigan, Siagian & Jie, 2020).

Globally, e-procurement has gained popularity especially with the advent of technology rapid development of e-procurement was reported in early 2000 just before the recession (Lobong, 2020). By the end of the same year, it was reported that all state functions were maintaining web presence in at least some stage of their procurement processes with some participating in online bidding. In Malaysia, the government at some point issued a statement calling for all suppliers to use the e-procurement system. The Malaysian public sector is going through a rapid change especially as far as adoption of technology is concerned. Adoption of e-government and particularly e-procurement is inevitable for the government. The National governments of Italy, New Zeeland, Scotland, New South Wales and Western Australia in 2005 revealed that these countries were already using e-procurement system for public procurement activities. In Africa, the concept of e-procurement is just gaining popularity especially in the public sector (Lysons, 2020). To deal with the problems of lack of accountability and transparency in procurement activities in the public sector, most African countries have resorted to legal reforms and adoption of procurement. Tanzania for instance put into place e-procurement systems to allow e-sharing, e-advertisement, e-submission, e-evaluation, e-contacting, e-payment, e- communication and e-checking and monitoring to ensure all public procurement activities are conducted online. In Africa, despite significant recent increases in internet sales in many countries, total B2B plus business-to-customer internet commerce is still low (Walker and Harland, 2008). In spite of the claimed business benefits that can come from embracing E- procurement, the extent of adoption in Organization for Economic Co-operation and Development (OECD) countries is below expectations and progressing slowly.

In Kenya, the government actively got involved in adoption of e-procurement when the Jubilee government came into power (Marei, Daoud, Ibrahim & Al-Jabaly, 2021). Since then, there has been a lot of pressure and reforms to ensure all public procurement functions are conducted online. The Kenyan government made it mandatory for procurement of all public goods, works and services to be procured through online platforms. For County governments in particular, there is a directive for all procurement and finance operations to be conducted online. For instance, the government introduced integrated financial management information system (IFMIS) that is mandatory for all the 47 counties. IFMIS was introduced to improve governance by providing real time financial information and effective programs. It also enhances transparency and accountability and acts as a deterrent to corruption and fraud.

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Statement of the Problem

The performance of the SCM department in public institutions has been a center of debate in several countries across the globe (Almajali et al., 2016). This is because of the huge amounts of public funds in terms of tax payers' money which are always involved in the procurement of either goods or services by these departments. In 2013/14 financial year, the United Kingdom (UK) public sector spent a total of £242 billion on procurement of goods and services; this accounted for 33% of public sector spending (Booth, 2015). In South Africa in particular, public procurement spending represents 29% of the country's gross domestic product (GDP). In Kenya, the spending by the Kenya Government on goods and services accounts for 11% of the country's GDP. Through e-procurement, public institutions can reduce business costs, cast wider the net to fish the most sort for skilled suppler/manufactures, improve timely restocking, foster flexibility, reduce customer complains, simplify purchasing processes etc. (Almajali et al., 2016).

Muinde & Shalle (2018) reiterates that the SCM function in Kenyan Counties has been plagued by massive scandals and indignity which has been attributed to poor handling of procurement information thus leading to unpresented corruption. Majority of the Devolved systems of governments previously struggled with the adoption of electronic procurement. For instance, Nairobi County failed to leverage on benefits that accrue with the use of Integrated Financial Management Information System (IFMIS) which is an E-procurement system in a tender of supply of asphalt which was supposed to be supplied at Ksh. 50,000,000 but the contract was awarded at Ksh. 150,000,000. These clearly indicated that the tender was not awarded to the lowest bidder (EACC Report, 2016/2017). Failure of these devolved systems to use e-procurement systems has led to increase in procurement cost due lots of paperwork, on the contrary an organization that use e-procurement in the procurement process has significantly enjoyed the benefits such as cost reduction, information sharing and transparency in procurement processes (Oteki et al.,2019).

Ingavo & Moronge, (2019) found out that E-Tendering, E-Ordering, E-payment etc. lead to increased performance of state corporations. Chepng'etich, Waiganjo & Ismail (2020) revealed that strategic e-procurement practice leads to performance of devolved systems of government in Kenya. Miyoko, Marika & Litondo, (2019) found out that E-bidding, E-tendering, and E-payment were positively and significantly related with performance of large manufacturing firms in Nairobi County. Khaoya & Muchelule, (2019) found out that online customer service and technology integration had a significant influence on performance of the SMEs. Yaacob, Baroto, Kamarudin & Arifin, (2019) top management support did not have significant effect on the relationship between customer reference marketing and market performance. Al-Omoush (2021), showed a significant impact of top management support on e-business entrepreneurship. Yang & Zhan (2018) found that top management support significantly effects on customer focus and performance. Despite the host of literature, a gap still exits.

General Objective

To establish the moderating effect of top management support on the relationship between e- procurement and SCM performance of Coast Counties of Kenya

Specific Objectives

1. To determine the effect of E- Tendering practice on the SCM performance of Coast Counties of Kenya.
2. To establish the effect of E-Order processing practices on the SCM performance of Coast Counties of Kenya.
3. To assess the effect of E-Material management practices on the SCM performance of Coast Counties of Kenya.
4. To find out the effects of E-Supplier management practice on the SCM performance of Coast Counties of Kenya.
5. To find out the effects of E-Payment on the SCM performance of coast Counties of Kenya.
6. To determine the moderating effect of top management support on the relationship between:

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7. E- Tendering practice and the SCM performance of Coast Counties of Kenya.
8. E-Order processing practices and the SCM performance of Coast Counties of Kenya.
9. E-Material management practices and the SCM performance of Coast Counties of Kenya.
10. E-Supplier management practice and the SCM performance of Coast Counties of Kenya.
11. E-Payment and the SCM performance of coast Counties of Kenya.

Research Hypotheses

This study was guide by the following null hypotheses;

Ho1: Electronic Tendering practices has no significant effect on the SCM performance of Coast Counties of Kenya

Ho2: Electronic Order processing practices has no significant effect on the SCM performance of Coast Counties of Kenya.

Ho3: Electronic Material management practice has no significant effect on the SCM performance of Coast Counties of Kenya

Ho4: Electronic supplier management practice has no significant effect on the SCM performance of Coast Counties of Kenya.

Ho5: Electronic payment practice has no significant effect on the SCM performance of Coast Counties of Kenya

Ho6: Top management support has no moderating effect on the relationship between

1. Electronic Tendering practices and SCM performance of Coast Counties of Kenya
2. Electronic Order processing practices and the SCM performance of Coast Counties of Kenya
3. Electronic Material management practice and the SCM performance of Coast Counties of Kenya
4. Electronic Supplier management practices and the SCM performance of Coast Counties of Kenya
5. Electronic payment and the SCM performance of Coast Counties of Kenya.

Theoretical Framework

Transaction Cost Theory

Transaction cost are all the cost or expenses involved while procuring or purchasing or selling goods and services to and from the market. Transaction cost theory aims to focuses on deciding whether an organization can buy or make their goods depending on calculated overheads, Make or Buy decisions (Owuor, 2018). A firm may find it too costing to procure a Bus for its staff and prefer a third party service by hiring it thus eliminating obligation of vehicle insurance, vehicle maintenances shelter and space for its packing etc. To procure packaging material may be expensive than to make them internally hence a firm is well off if it can produce them than procuring them, Williamson theorized that whether activities would be internalized within a firm depended on their transaction costs. He saw transactions broadly as transfers of goods or services across interfaces, and argued that when transaction costs were high, internalizing the transaction within a hierarchy was the appropriate decision (Richter, Schmidt, Ladwig & Wulhorst, 2017). Conversely, when transaction costs were low, buying the good or service on the market was the preferred option. Three dimensions were developed for characterizing transactions: uncertainty, frequency, and asset specificity, or the degree to which transaction-specific expenses were incurred. Transaction cost theory is built on assumptions of bounded rationality and opportunism, defined as self-interest with guile. This theory explains the transactions engaged in procurement.

Technology Acceptance Model

Technology Acceptance Model (TAM) is theory majorly in the information system. It focuses on modeling

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computer users and showing them on how they can accept and adopt a new technology. It was designed to predict the technology adoption decisions of users (Rukuni, Maziriri & Mulaudzi, 2020). Technology Acceptance Model is usually used to predict. It indicates that there are only two components that determine the users' acceptance of a computer system. The two components that determine computer acceptance are the perceived usefulness and the perceived ease of use of the system. The main aim of this model is that it emphasizes the potential of the users. In other words, it underscores, for example, when a developer of a given technology believes that his or her system is friendly to the users. Inversely, the system is not being accepted by the users not unless the developers share the benefits and advantages of the technology system (Ibrahim et al., 2017).

The perceived usefulness component in Technology Acceptance Model is the degree to which a computer system user believes that using a particular computer system will enhance his or her performance (Opoku, 2020). It usually refers to consumers' perceptions based on the outcome of their experience. The existence of perceived usefulness has significantly been recognized in many businesses, primarily in the banking sector. In other occurrences, it is regarded and taken as a determinant of actual behavior whereby a user is encouraged to use an innovative and user-friendly self-service technology to improve and establish greater autonomy in performing some banking activities such as transactions. This theory explains the use of technology in electronic procurement.

Material management theory

Material management refers to the planning, organization and controlling /regulating the flow of materials. The elements focused are among others the quantity, quality, demand, price,

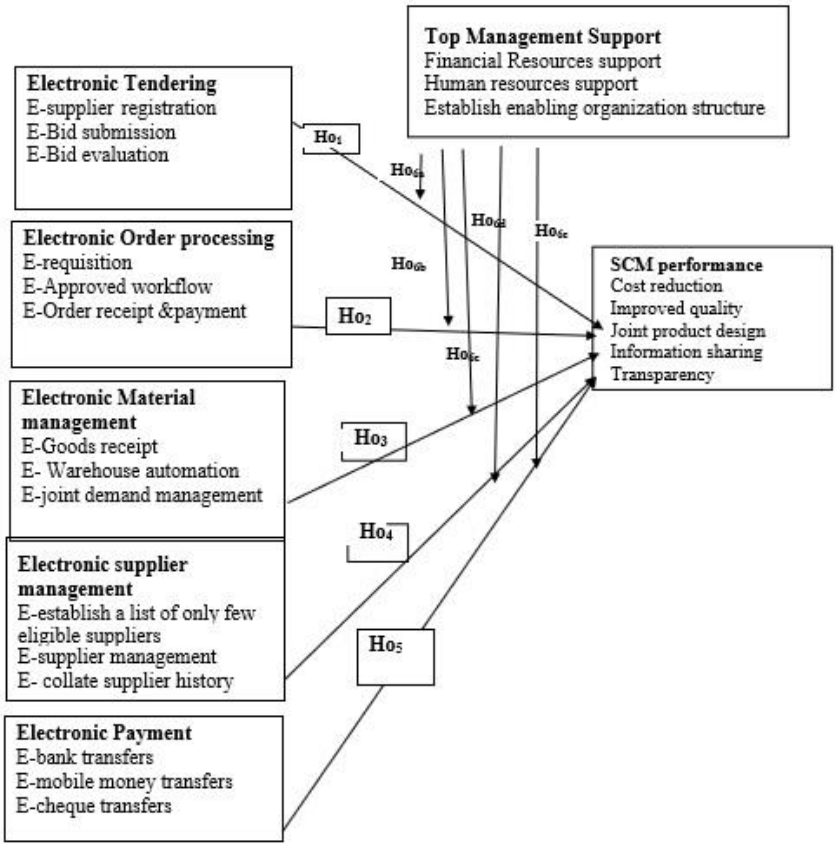

Fig 2.1: Conceptual Framework, (Source: Researcher 2023)

RESEARCH METHODOLOGY

This study adopted an explanatory research design to the study the moderating effect of top management support on electronic procurement and procurement performance of Kwale, Mombasa, Kilifi and Tana River Counties. The target population of this study was 561 procurement staff of Kwale, Mombasa, Kilifi and Tan River Counties

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and the sample size was 329 respondents. Primary data was collected using structured questionnaires.

RESULTS AND PRESENTATION

Descriptive Results

The mean values range from (4.77 SD=.912) for electronic material management to 3.75 (SD=.879) and for e tendering. These results shows that the counties practice all the five e- procurement types to different extent. Electronic tendering being the most predominant and material management least predominant. Together, the results show that digital procurement is in place which eliminate errors associated with handling paperwork and manual orders in the counties. The results show that the counties benefits from e procurement to some extent that includes information transparency, reduced costs, automation of procurement process, improved inventory management and larger product selection. The standard deviation is relatively comparable across all the variables with a narrow range from .897 for e-tendering to .976 for SCM performance. Variance is an importance quantity in research. In this regression analysis, it is important in assessment of moderation. The skewness and Kurtosis statistics are all within the threshold of normal distribution. They are all less than 1 as required. These confirms that the data is normally distributed therefore the findings are generalizable.

Table 1: Descriptive Statistics Results

	N	Mean	Std. D	Skewness		Kurtosis	
Statistic		Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
E tendering	329	3.75	.879	.382	.197	-.548	.392
E-ordering process	329	4.83	.936	.302	.197	-.626	.392
E material management	329	4.77	.918	.411	.197	-.190	.392
E-supplier management	329	4.03	.912	-.066	.197	-.845	.392
E-payment	329	4.01	.973	-.027	.197	-.845	.392
Top Mgt Support	329	4.68	.976	.109	.197	-1.000	.392
SCM performance	329	3.26	.936	-.554	.197	-.772	.392

Source: Field data (2023)

Correlation Results

The correlation analysis shows that e-procurement antecedents are significantly related. Strongest correlation is observed for e-tendering (r=.702, p<.001), followed by e-ordering (r.612, p<.001) and least is perceived Top Management Support (r=.225. p=.005). Therefore, e-procurement practices and supply performance are positively and significantly correlated. These results indicate that firms with consistent e-procurement practices with an elaborate automation of procurement and supply chain processes using internet based applications and technology record better good in supply Chain performance than firms with inconsistent e-procurement behaviors. This implies that enhanced electronic procurement practices and increased top management support both lead to increased SCM performance of Coast County governments of Kenya.

Table 2: Correlation results

E-tender			E-order	E-mat	E-supp	E-pay	support
E tendering	Pearson Correlation	1					

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	Sig. (2-tailed)						
E-ordering	Pearson Correlation	.754**	1				
	Sig. (2-tailed)	.000					
E material	Pearson Correlation	.725**	.710**	1			
	Sig. (2-tailed)	.000	.000				
E-supplier	Pearson Correlation	.676**	.653**	.698**	1		
	Sig. (2-tailed)	.000	.000	.000			
E-payment	Pearson Correlation	.246**	.121	.147	.152	1	
	Sig. (2-tailed)	.002	.140	.072	.062		
Top Mgt Support	Pearson Correlation	.258**	.194*	.185*	.216**	.546**	1
	Sig. (2-tailed)	.001	.017	.023	.008	.000	
Performance	Pearson Correlation	.702**	.617**	.584**	.549**	.227**	.225**
	Sig. (2-tailed)	.000	.000	.000	.000	.005	.005

Source: Field data (2023)

Table 3: Multiple Linear Regression Results (Direct Effects)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.738	0.186		3.956	0.000
Independent Variables					

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E tendering	0.219	0.055	0.231	3.969	0.000
E-ordering	0.053	0.031	0.079	1.701	0.021
E material	0.012	0.029	0.019	0.401	0.032
E-supplier	0.177	0.053	0.192	3.332	0.001
E-payment	0.032	0.022	0.062	1.484	0.002
R	.625				
R Square	.591				
a. Supplier chain performance					

Source: Field data (2023)

The results show that e tendering, e ordering, e material management, e suppliers' management and e payment positively and significantly affect the supply chain performance of coast county governments of Kenya.

Moderating Regression Results

From the moderation results, it was found out that top management support positively and significantly moderate the relationship between Electronic Tendering practices, Electronic Order processing practices, Electronic Material Management practices, Electronic supplier management practices, Electronic payment practices and the supply chain performance of Coast County governments of Kenya. This implies that enhanced top management support will lead to increased SCM performance of Coast County governments of Kenya.

Table 4: Hierarchical regression models

Variables	**Model 1 Coefficient**	**Model 2 Coefficient**	**Model 3 Coefficient**	**Model 4 Coefficient**	**Model 5 Coefficient**	**Model 6 Coefficient**	**Model 6 Coefficient**
Constant	.738(.186) **	.725(.00) **	.686(.186) **	.655(.00) **	.645(.186)**	.625(.186) **	.624(.186) **
ET	.219(.055) **	0.214(.00) **	0.190(.00) **	0.187(.01) **	0.185(.02) **	0.180(.01) **	0.178(.01) **
EO	.053(.031) **	0.051(.01) **	0.042(.01) **	0.039(.03) **	0.036(.00) **	0.035(.03) **	0.033(.03) **
EM	.012(.029) **	0.011(.00) **	0.01(.00) **	0.009(.02) **	0.0087(.01) **	0.0085(.11) **	0.0084(.11) **
ES	.177(.053) **	0.168(.00) **	0.155(.00) **	0.21(.00) **	0.19(.02) **	0.18(.05) **	0.174(.05) **
EP	.032(.022) **	0.029(.00) **	0.025(.00) **	0.17(.00) **	0.16(.00) **	0.15(.05) **	0.145(.05) **
TMP		0.015(.00) **	0.013(.01) **	0.58(.02) **	0.55(.03) **	0.52(.03) **	0.49(.03) **

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EP* TMP			0.634(.03) **	0.60(.04) **	0.56(.04) **	0.52(.04) **	0.48(.04) **
EO*TMP				0.45(.01) **	0.55(.01) **	0.64(.01) **	0.57(.01) **
EM*TMP					0.48(.03) **	0.45(.03) **	0.42(.03) **
ES*TMP						0.37(.03) **	0.33(.03) **
EP*TMP							0.25(.03) **
Model Summary Statistics							
R Square - R^2	0.031	0.325	0.456	0.505	0.525	0.531	0.542
Δ in R^2	-	0.294	0.131	0.049	0.02	0.006	0.011
** Significant at 0.01 level (2-tailed); *Significant at 0.05 level (2-tailed). :							
ET: E tendering, EO: E-ordering, EM: E material, ES: E-supplier, EP: E-payment. TMP: Top Management .							

CONCLUSION AND RECOMMENDATIONS

Conclusions

Based on the findings the study concluded that;

1. E-tendering practice has a positive significant effect on supply chain performance of Coast County governments of Kenya.

2. E-order processing practice has a positive significant effect on supply chain performance of Coast County governments of Kenya.

3. E-material management practice has a positive significant effect on supply chain performance of Coast County governments of Kenya.

4. E-supplier management practice has a positive significant effect on supply chain performance of Coast County governments of Kenya.

5. E-payment practice has a positive significant effect on supply chain performance of Coast County governments of Kenya.

6. Top management support positively and significantly moderates the relationship between E-tendering practice, E-order processing practice, E-material management practice, E-supplier management practice and supply chain performance in coast county governments of Kenya.

Managerial Recommendation

Based on the conclusions, the study recommended that

1. Procurement managers should implement E-tendering practices so as to increase the supply chain performance of Coast County governments of Kenya.

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2. Procurement Managers should implement E-order processing practices so as to increase the supply chain performance of Coast County governments of Kenya.

3. Procurement managers should implement E-material management practice so as to increase supply chain performance of Coast County governments of Kenya.

4. Procurement managers should implement E-supplier management practices so as to increase the supply chain performance of Coast County governments of Kenya.

5. Procurement managers should implement E-payment practices so as to increase the supply chain performance of Coast County governments of Kenya.

6. Procurement managers should implement should encourage top management support so as to increase the supply chain performance in coast county governments of Kenya.

Policy Recommendations

1. Coast County Governments should prioritize building a strong culture of top management support for e-procurement initiatives.

2. To maximize the benefits of e-procurement, Coast County Governments should invest in training and capacity building programs for top management, procurement staff, and other relevant stakeholders.

3. Establish comprehensive monitoring and evaluation mechanisms to assess the impact of e-procurement on supply chain performance.

Theoretical Recommendations

1. Under Transaction Cost Theory, we recommend that Coast County Governments of Kenya consider the costs and risks associated with implementing e-procurement, including the costs of technology adoption, training, and potential transaction costs.

2. On Technology Acceptance Theory we recommend that Coast County Governments should ensure that e-procurement systems are user-friendly and provide clear benefits to procurement staff and stakeholders.

3. On Material Management Theory we recommend Coast County Governments we recommend that effective material management is vital for ensuring the timely and cost-effective delivery of public services.

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