

## **Electronic Ordering And Supply Chain Performance In County Governments In Western Region, Kenya**

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### **ABSTRACT**

Electronic procurement is a crucial operational aspect that county governments have embraced within their procurement departments. Its primary objectives are to reduce the time required for procurement processes, enhance transparency, and improve overall efficiency levels. Notwithstanding these factors, it has been reported that some counties in the western area of Kenya continue to have difficulties pertaining to extended lead times, subpar supply performance, and insufficient efficiency in procurement procedures. The objective of the study was to assess the effect of electronic ordering on the supply chain performance in county governments in Western region, Kenya. The study adopted dynamic capability theory. The study's target population consisted of 216 respondents, and a stratified random sampling technique was employed to choose 140 participants from the pool of county government employees. Both primary and secondary data were gathered. Pilot test was conducted in Kisumu County. The reliability of the measurement instrument was assessed using Cronbach's Alpha. The validity of the study was assessed using the expertise of professionals and the utilization of factor analysis. The data underwent analysis using SPSS version 27. Both descriptive and inferential statistics were acquired. Descriptive statistics comprise measures frequencies and percentage. Inferential statistics encompass the utilization of multiple regression analysis. The data was presented in tabular format. Multiple regression analysis indicated that electronic ordering had a significant effect on supply chain performance by reducing the inventory cost with a coefficient of -0.495. The study depicted that 38.8% variation in supply chain performance is caused by electronic ordering. The study may help policymakers to create e-procurement regulations and the information from the study findings may also be used by investors to help in deciding how much money they should spend on electronic purchases in order to cut costs and increase profits. The study concluded that electronic ordering affected supply chain performance negatively and significantly through reduction of inventory cost. The study therefore recommended that county government should effectively adopt electronic ordering and train its employees on how to use electronic ordering efficiently to minimize use of paperwork in the organization. Reduced paperwork in county government will help to cut down the inventory costs.

### **I. BACKGROUND OF THE STUDY**

The importance of establishing and utilizing the procurement function has been widely acknowledged as a key factor in assessing organizational effectiveness within various entities. Organizations worldwide actively participate in the procurement process to meet their operational needs. As a result, the adoption of electronic procurement has significantly enhanced the efficiency and effectiveness of the supply chain. Various industries have embraced electronic procurement as a strategic approach to improve their market position by automating supply chain activities. It is increasingly necessary for companies and organizations to embrace electronic procurement and adopt a supply chain mindset in order to enhance their competitive advantage (Nani & Ali, 2020).

The incorporation of information and communication technology (ICT) in procurement activities enables the seamless integration of supply chains and offers greater organization and monitoring of transaction records, hence streamlining the data collecting process (Bermúdez, Farias, & Torres, 2020). The implementation of online transactions enhances the efficient processing of procurement activities, enabling timely order fulfillment through frequent and instantaneous delivery of the required items. The procurement procedures of soliciting bids, prequalifying suppliers, releasing tenders, negotiating with suppliers, awarding contracts, receiving supplies, and reviewing tenders are interconnected through the exchange of information (Tutu, Osei, & Desmond, 2019).

The supply chain (SC) plays a crucial role in the effective management of interconnected resources, encompassing many actions that commence with the acquisition of raw materials and extend until the final delivery to the end user (Buyukozkan & Gocer). This strategy facilitates the achievement of goals by enterprises seeking to engage in competition. In the contemporary business landscape, organizations that demonstrate a keen focus on effective supply chain management are afforded the opportunity to attain a competitive advantage in the market. It is now widely acknowledged by management that the extent to which a supply chain has been transformed into a value chain has a direct impact on profitability. Organizations that do not allocate sufficient

resources towards the development of contemporary supply chains are unable to effectively deliver value to their consumers (Ben, Hassini, & Bahroun, 2019).

In China e-procurement platforms make it easier for businesses to share information with their suppliers. Sharing information among businesses strengthens ties between them. Studies in China have shown that the use of Information and Communication Technology (ICT) in industries is greatly influenced by the availability of ICT infrastructure. According to the study's findings, building multimedia centers could considerably raise ICT usage rates in organizations. Employees need to be taught how to use the new technologies in order to reap the benefits of ICT (Moslehpour, Pham, & Wong, 2018).

In United Kingdom, electronic purchasing in public sector was found to improve communication, boost supply availability, decrease maverick spending, and improve negotiating. Product purchasing is significantly impacted by how much internal users are helped to use the new technology. Due to lower processing costs for buy requisitions as a result of the procurement system's improvements, the overall cost of procuring goods and services was reduced (Vaidya, Callender, & Sajeev, 2017).

To fully benefit from the deployment of Information and Communication Technology (ICT) in procurement, substantial modifications must be made to the procurement landscape within the public sector. The study identified several key issues that can be categorized as follows: organizational structure, electronic procurement technology framework, legal and economic environment, and procurement framework and practices. One of the challenges that may arise in the successful integration of ICT in the procurement process is the presence of organizational issues that hinder its effectiveness (Afolabi, Aduwo, & Olayeni, 2022)

One of the main difficulties faced by the procurement departments of public organizations in Uganda relates to the lack of reliable information concerning the procurement process, including its several elements such as inputs, outputs, resource allocation, and results. The lack of available information makes it impractical for these departments to assess the effectiveness and efficiency of the procurement process. The findings of the study suggest that the utilization of information and communication technology (ICT) inside public organizations has the potential to offer decision-makers in the procurement department with unbiased and objective data concerning the effectiveness of the procurement function. The successful implementation and effective utilization of electronic procurement in Tanzania encounter several challenges arising from the nation's legislative and regulatory framework, institutional structures, procurement processes, information and communication technologies (ICTs), and human resources (Kakwezi & Nyeko, 2019)

The government of Kenya has acknowledged the need of adopting information and communication technology (ICT) to improve the delivery of services. The Electronic Government Strategy Paper of 2014 outlined the inclusion of ICT adoption in procurement as a key target to be realized within the medium-term (Muriuki, Guyo, & Kinoti, 2019). In addition, the Public Procurement Regulatory Authority (2018) has delineated its intentions to implement the integration of information and communication technology (ICT) in the procurement procedures of all public organizations in Kenya. The Ministry of Finance has undertaken a government initiative to establish an e-procurement project, with the objective of implementing an electronic procurement system in a limited number of ministries prior to its widespread adoption throughout other government departments.

Several private organizations in Kenya have successfully implemented electronic procurement technologies. Nation Media Group has facilitated the ability of its clients to engage in online transactions through the utilization of its digital platform. The utilization of Information and Communication Technology (ICT) has brought about substantial transformations in the delivery of services inside these enterprises. Despite the inherent benefits associated with the integration of information and communication technology (ICT) in procurement processes, empirical data has accumulated to substantiate the existence of a noticeable lag in the use of this technology (Ngunjiri & Kiarie, 2018).

The obstacles to the swift implementation of web-based procurement systems in Kenya comprise various significant elements. The factors encompassed in this analysis consist of a lack of comprehensive legislation, inadequate infrastructure, insufficient awareness and support from high-level management, difficulties in integrating with pre-existing internal systems or solutions, the absence of standardized technical protocols, limited cooperation from suppliers, and the financial burdens associated with adapting to these systems (Mutisya, 2022). The research undertaken by Muriuki, Guyo, and Kinoti (2019) investigated the effects of e-procurement on public healthcare facilities, with a particular emphasis on Kisii level 5 hospital. The study's findings unveiled a number of obstacles that were faced throughout the execution of e-procurement. These issues encompassed limited financial resources, opposition to change within the organization, and inadequate training of personnel in effectively utilizing the information technology system.

### **Statement of the problem**

The supply chain division operating within county governments is responsible for the management of substantial quantities of products and services, which includes procurement from both domestic and

international sources. The utilization of digital solutions in procurement and supply chain operations enables effective management of part acquisition from multiple suppliers, identification of components with limited inventory, substitution with appropriate alternatives, and verification of their lifecycle. This ensures the long-term availability of goods and services for both public entities and private enterprises. In times of economic distress, the establishment of an effective and prosperous supply chain function is a pivotal endeavor for county governments. Therefore, it is crucial to carry out evaluations of supply chain performance and determine the challenges faced in procurement processes. Therefore, it is imperative to emphasize the development of e-procurement as a strategy to improve procurement services. The conventional procurement process possesses inherent vulnerabilities that give rise to illegal procurement practices, including fraudulent operations, bribery, and the irregular allocation of bids. The inability to provide a complete account of around 370 billion units of currency disbursed by the central government to local government entities is primarily attributed to instances of bribery, fraudulent transactions, or misappropriation of funds. Consequently, this mismanagement results in the loss of monies originally designated for procurement endeavors (Ethics and Anti-Corruption Commission, 2021). In the year 2022, the officers from the Ethics and Anti-Corruption Commission (EACC) apprehended six high-ranking individuals in Vihiga County on charges of engaging in the irregular allocation of a contract for 21 million. The aims of county governments are not fully accomplished due to these misappropriations. The allocation of funds intended for procurement reasons results in personal gains for individuals in the form of bribes, leading to a lack of accountability. This study aims to assess the impact of electronic procurement on supply chain performance in the county governments of the western region in Kenya, building upon the gaps identified earlier.

## **II. RESEARCH OBJECTIVES**

To establish the effect of electronic ordering on the supply chain performance in county governments in western region, Kenya.

### **Hypothesis of the study**

**H<sub>01</sub>:** Electronic ordering has no significant effect on supply chain performance in County governments in Western region Kenya

### **Theoretical literature review**

#### **Dynamic capability theory**

The theory was formulated by Teece and Pisano in the year 1994. According to this perspective, an organization's capacity refers to its deliberate capability to modify its resource base. An organization must possess the capability to promptly and efficiently adapt to external fluctuations. This requires the implementation of multiple strategies that will effectively utilize and leverage the diverse skills of the company. This strategic move will allow the company to use its competitive advantage in the environmental industry. The contemporary corporate landscape is undeniably characterized by a high degree of dynamism. Distinct changes are occurring in organizational architecture, culture, marketing, and client preferences. Hence, it is imperative for organizations to possess the capability to effectively adjust to these alterations.

In order to maintain competitiveness within the current market landscape, companies are required to adopt novel supply chain strategies that can effectively navigate the increasingly dynamic and turbulent environment. The field of supply chain management is presently undergoing a shift from conventional procedures to agile capabilities that encompass competitive advantages such as speed, flexibility, innovation, quality, and profitability. This transition is facilitated by the integration of reconfigurable resources and the adoption of best practices within a knowledge-rich environment. The ultimate goal is to deliver customer-centric products and services in a market environment that is characterized by rapid and constant change (Lee & Whang, 2000).

The ability to be flexible in business encompasses various elements such as organizational structures, information systems, logistical procedures, and mindsets. The primary objective of supply chain agility is to facilitate the prompt adaptation of a business to transient fluctuations in supply and demand, while effectively managing external interruptions. The key attributes of an agile supply chain encompassed a network-centric structure, virtual operations, seamless integration of processes, and a heightened responsiveness to dynamic market conditions. Process integration involves the collaborative creation of products, the establishment of shared systems, the exchange of information, and coordinated efforts between customers and suppliers (Chien & Tsai, 2012).

A responsive supply chain encompasses an operational approach known as assemble to order, which places significant emphasis on product diversity. This strategy is supported by a high capacity cushion and just-in-time inventory management, enabling the achievement of quick delivery times and shortened lead times. Furthermore, the responsive supply chain prioritizes customization, flexibility, and the prompt delivery of products. An efficient supply chain exhibits the following attributes: a make-to-stock approach, a minimal

capacity buffer, a low investment in inventory, short lead times, a focus on streamlined processes with consistent quality, and a commitment to on-time delivery. The collective responsibility of the company entails facilitating the enhancement of quality, delivery time, and service performance of its external suppliers through the exchange of information and collaborative efforts. In order to obtain accurate information regarding current client demands, it is imperative to rely on real-time market input rather than making estimations based on past sales or shipments (Samsudin & Ismail, 2019).

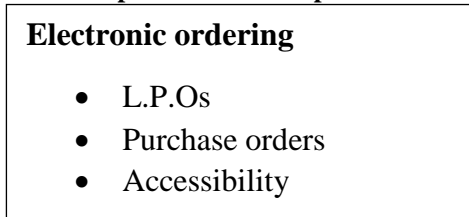
This theory pertained to the utilization of computerized ordering procedures in order to effectively respond to evolving markets, hence enabling the provision of goods and services to the county government for integration into their supply chain within a fiercely competitive and ever-changing context. E-procurement is an approach that integrates both internal and external procurement elements in order to effectively respond to evolving business practices aimed at achieving operational excellence. This is accomplished through the reduction of costs and the streamlining of the procurement process, resulting in shorter lead times for purchasing things.

**Conceptual framework**

This section presents a conceptual framework that outlines electronic ordering and supply chain performance, as illustrated in Figure 1.1.

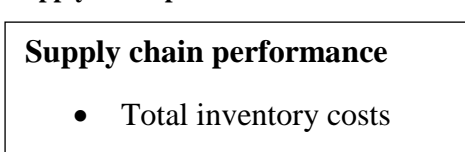
**Independent variables**

**Electronic procurement adoption**



**Dependent variable**

**Supply chain performance**



**Figure 1.1: Conceptual framework: Source (researchers' theorization)**

**Empirical literature review**

In a study conducted by Gichuhi (2021), the researcher investigated the effects of e-ordering on the procurement performance of the Kenyan Geothermal Development Company (GDC). The research design employed in this study was descriptive in nature. The target demographic encompassed those individuals who were employed within the procurement and logistics divisions located in the GDC Nakuru region. The Global Distribution Company (GDC) employed a collective workforce of 170 individuals dedicated to procurement and logistics operations. A total of 97 individuals were selected as respondents for the study through the utilization of a multi-stage sampling technique. Questionnaires were utilized as a means of gathering primary data. The data collected was analyzed using the Statistical Package for Social Sciences (SPSS). The findings were presented using descriptive and inferential statistics. The research findings revealed a statistically significant and positive correlation between the utilization of electronic ordering systems and the overall procurement performance within geothermal development firms.

In a study conducted by Oteki, Namusonge, Sakwa, and Ngeno (2018), the objective was to examine the impact of electronic procurement procedures on the supply chain performance of sugar producing enterprises in Kenya. The study focused on a target group of 12 sugar processing enterprises in Kenya, encompassing a total of 7,584 individuals. A hybrid research methodology was employed. In order to achieve a sample size of 367, the research study employed the technique of stratified random sampling. Data collection involved the utilization of a self-administered drop-and-pick questionnaire, interviews, and observation techniques. The results of the study revealed a statistically significant correlation between the performance of the supply chain and the adoption of electronic order processing procedures.

Chepkwony and Chepkwony (2017) conducted an investigation to examine the impact of E-ordering and E-informing on the efficiency of supply chain operations. The study employed an explanatory research approach to conduct the investigation. The findings of a multiple regression analysis conducted on a sample of 262 procurement officers from 112 Kenyan State Corporations indicate that the implementation of e-ordering systems has a statistically significant positive effect on supply chain performance. The study suggests that the performance of the supply chain can be enhanced by the implementation of e-ordering, which is a key aspect of the broader e-procurement framework. Consequently, it is imperative for organizations to incorporate electronic ordering (e-ordering) into their procurement procedures.

**III. RESEARCH METHODOLOGY**

**Research design**

The research design employed in this study was descriptive research design. The chosen study design was deemed highly suitable due to its alignment with the investigation of the relationship between electronic ordering and supply chain performance in county governments within the western area of Kenya. This design effectively addresses the nature of both independent and dependent variables (Atmowardoyo, 2018).

**Target population**

The target population for this study was 216 respondents consisting of 4 Procurement directors, 140 Supplies Officers, 40 Store Keepers, and 32 Store Clerks in all four counties in western region, Kenya.

**Table 1. 1: Target population**

Category	Number	Percentages (%)
Procurement Directors	4	1.9
Supplies Officers	140	64.8
Store Keepers	40	18.5
Store Clerks	32	13.8
<b>Total</b>	<b>216</b>	<b>100</b>

Source: County Government Report, 2023

**Sample size and sampling technique**

The researchers employed Yamane's Sample formula to ascertain the appropriate sample size for the investigation. The Yamane sample calculation method is utilized in order to ascertain the appropriate sample size for a research investigation. The aforementioned approach is considered highly advantageous in situations when the sole available information regarding the target population being sampled is its size. The formula was originally devised by Yamane in 1967 and subsequently employed by (Ngigi & Kawira, 2015).

$$n = N \frac{1 + N(e)^2}{1 + 216(0.05)^2} \dots \dots \dots \text{Equation 3.1}$$

Where: n = required sample size

e = level of significance taken to be 0.05

N= the population size

l= constant

N= 216

e= 0.05

$$n = \frac{216}{1 + 216(0.05)^2} = 140 \text{ respondents}$$

The sample population of each category was calculated based on proportion and calculated further by dividing category target respondents by total target population and then multiplying it by the total sample size. The respondents were then further chosen using stratified random sampling. The sample population is shown in Table 1.2.

$$\text{Procurement directors} = \frac{4}{216} \times 140 = 3$$

$$\text{Supplies Officers} = \frac{140}{216} \times 140 = 90$$

$$\text{Store Keepers} = \frac{40}{216} \times 140 = 26$$

$$\text{Store Clerks} = \frac{32}{216} \times 140 = 21$$

**Table 1. 2: Sample population**

Category	Number	Percentages (%)
Procurement Directors	3	1.9
Supplies Officers	90	64.8
Store Keepers	26	18.5
Store Clerks	21	13.8
<b>Total</b>	<b>140</b>	<b>100</b>

**Data collection instruments**

The collection of primary data was conducted by employing questionnaires, which were administered with the assistance of research assistants. The selection of this scale was based on the technical nature of its items and the need to ensure the legitimacy of respondents' responses. The researcher utilized closed-ended questions structured in the format of a 5-point Likert scale. Closed-ended questions have been found to have a positive impact on response rates, as they are very simple to administer. Additionally, they facilitate the collection of measurable and quantitative data. The ease and speed with which respondents can answer closed-ended questions further contribute to their effectiveness. Moreover, the provision of answer possibilities enhances comprehension and ensures confidentiality for the respondents. The collection of secondary data involved the examination and analysis of audited reports and statements obtained from the county administrations.

**Data collection procedure**

The researcher provided training to the research assistants who assisted in the process of data gathering. The surveys were administered by the research assistants to the corresponding counties. The participants were provided with a duration of two weeks to fulfill the questionnaires. Participants who were unable to provide an early response were granted an additional week to finalize the completion of the surveys. Subsequently, the study assistants proceeded to gather the surveys. The collection of secondary data involved the analysis of audited financial and procurement records, which provided comprehensive information on the costs associated with the acquisition and management of inventories.

**Pilot study**

The pilot test was conducted on 20 respondents in Kisumu County because it has the same demographic features as the other counties that is; Bungoma, Busia, Kakamega and Vihiga counties. Those who participated in pilot test study were not among the targeted respondents.

**Validity testing**

Factor analysis was used to assess the construct validity of the questionnaire by examining whether the features being measured by the research tool effectively and accurately capture the intended constructs. The technique of dimension reduction was employed to assess the validity of the observed variables (Cooper & Schindler, 2011).

In this study, the effectiveness of data sampling was evaluated and its eligibility for factor analysis was assessed through the utilization of KMO and Bartlett's tests. A KMO score greater than 0.5 and a Bartlett's test result over 0.05 indicate that the dataset is appropriate for doing factor analysis (Hayashi, Abib, & Hoppen, 2019).

**Table 1. 3: Validity test results**

Construct	No of Items	KMO	Bartlett's test of sphericity		
			$\chi^2$	Df	P-value
EO	10	0.832	122.014	45	0.000
SCP	10	0.941	166.586	45	0.000

Source: Researcher (2023).

Based on the data shown in Table 1.3, it can be observed that all the variables exhibit Kaiser-Meyer-Olkin (KMO) statistics exceeding the threshold of 0.5. This suggests that the dataset is deemed appropriate for conducting factor analysis. The determination of sample adequacy was conducted using Bartlett's tests, which rely on the statistical significance of the chi-square statistics. According to the findings presented in Table 3.4, Bartlett's test statistics for all variables yielded p-values of 0.000, indicating statistical significance at a significance level of 0.05. This suggests that the item correlation matrix deviates from being an identity matrix. Hence, the data obtained from the pilot study is deemed sufficient and appropriate for conducting factor analysis.

**Reliability testing**

Reliability was examined using Cronbach's alpha, a statistical measure with a range of values from 0 to 1. Values below 0.70 were deemed to possess less dependability and were deemed unacceptable, whilst values ranging from 0.7 to 1.00 indicated a high level of reliability and were considered acceptable (Cooper & Schindler, 2011).

**Table 1. 4: Cronbach’s alpha results**

Variable	Cronbach’s alpha	Number of items	Result
EO	0.772	10	Reliable
SCP	0.797	10	Reliable

Source: Researcher (2023).

According to the data presented in Table 3.3, the variables exhibited Cronbach's alpha values of 0.772 and 0.797, all of which exceeded the threshold of 0.7. This finding suggests that the variables of all the constructs examined in the study had high levels of reliability.

**Data analysis and presentation**

The acquired data followed a process of cleaning, sorting, and coding before to analysis, which was conducted using the Statistical Package for Social Sciences (SPSS) software, specifically version 27. Both descriptive and inferential statistics were employed for the purpose of analyzing the data. The Pearson product moment correlation coefficients were employed to demonstrate the magnitude and direction of associations among the variables under investigation.

The researcher employed a multiple linear regression analysis to ascertain the correlation between electronic ordering and supply chain performance in county governments within the western region of Kenya. The regression equation was as follows;

$$Y = \beta_0 + \beta_1 EO + \epsilon$$

Where:

- $Y$  = supply chain performance
- $\beta_0$  = Constant Term
- $\epsilon$  = error term
- $EO$  = Electronic ordering
- $SCP$  = Supply Chain Performance

**Data Analysis, Presentation and Discussion**

**Descriptive statistics**

The aim of this study was to assess the effect of electronic ordering on the supply chain performance within the county governments in the western region in Kenya. According to descriptive statistics findings, it was observed that in a significant number of county governments, there is a lack of reduction in paperwork. Additionally, the implementation of electronic ordering systems did not effectively minimize human errors, thereby compromising accuracy. Furthermore, the absence of online order specifications contributes to a lack of clarity, which in turn hinders the enhancement of customer loyalty.

**Inferential statistics**

**Correlational analysis**

This study utilized the Pearson product-moment correlation coefficient to assess the magnitude and direction of the association between the independent variables of the study and the dependent variable. The correlation coefficient is a statistical measure that ranges from -1 to +1 (Sekran, Bougie & Roger, 2010). The statistical significance of the correlation coefficient was evaluated at a confidence level of 95% using two-tailed tests, as presented in Table 4.36. Consequently, the criteria for rejection were established using a significance level of 0.05, whereby values beyond this threshold were considered statistically insignificant, while values falling below it were considered statistically significant.

**Table 1. 5: Correlation analysis**

	ET	$Y^0$
EO	1	
$Y^0$	-0.731*	1
	(0.000)	

Source: Researcher (2023).

The correlation coefficient of electronic ordering with supply chain performance showed a coefficient of -0.731 and p-values of 0.06. This suggests a significant and strong correlation between the utilization of electronic ordering and the overall supply chain performance within county government.

**Model summary**

The model summary provides an assessment of the extent to which electronic ordering is associated with the supply chain performance of county governments in the western region. The multiple correlation coefficient, denoted as R, quantifies the strength and direction of the linear association between the actual values and the anticipated values of supply chain performance in a model. A higher value of R indicates a more strong correlation. The coefficient of determination, sometimes referred to as R Square, is a statistical measure that quantifies the proportion of the variance in the dependent variable that can be explained by the independent variable.

**Table 1. 6: Model summary**

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.623 <sup>a</sup>	.388	.367	0.2793

a. Dependent Variable: supply chain performance

b. Predictors: (Constant), electronic ordering

Table 1.6 presents an R value of 0.623, indicating a strong relationship between electronic ordering and supply chain performance in county governments located in the western area. The R Square value of 0.388 indicates that about 36.7% of the variability in supply chain performance can be attributed to the influence of electronic ordering. The remaining 53.3% of the variance in supply chain performance can be attributed to other factors that are not accounted for in the current model.

**4.8 Analysis of variance**

The application of Analysis of Variance (ANOVA) is employed to assess the reliability of a model in predicting a result. The study's significance level was established at 5%, requiring a probability value below 0.05 for statistical significance.

**Table 1. 7: ANOVA**

Model		Sum of squares	Df	Mean square	F	Sig.
1	Regression	15.932	1	15.932	25.532	.003 <sup>b</sup>
	Residual	74.229	119	0.624		
	Total	90.161	120			

a. Dependent Variable: supply chain performance

b. Predictors: (Constant), electronic ordering.

According to the findings presented in Table 4.41, the calculated F value of 25.532 exceeds the critical F value of 2.45. This result suggests a strong relationship between electronic ordering and supply chain performance within county governments located in the western region. The F-statistic yielded a p-value of 0.003, which was found to be less than the statistically significance level of 0.05. This result suggests statistical significance and indicates that the model adequately fits the data.

**Regression coefficients analysis**

Regression coefficients serve as estimations of population factors that aid in elucidating the relationship between electronic ordering and the supply chain performance of county governments in the western area.

**Table 1. 8: Regression coefficients**

Model	Unstandardized coefficients		T	Sig.
	B	Std. Error		
(Constant)	6.257	.881	7.104	.000
EO	-.495	.131	-3.776	.001

a. Dependent Variable: supply chain performance

b. Predictors: (Constant), electronic ordering

According to the findings presented in Table 1.8, the constant value of 6.257 exhibits statistical significance at a 95% confidence level, as evidenced by a p-value of 0.000, which is less than the predetermined threshold of 0.05. The findings indicate that in cases where county governments have not implemented electronic ordering,



the average supply chain performance of county governments in western Kenya, as assessed by inventory cost, was roughly sh. 1.81 million (Antilog of 6.257). The coefficients for electronic ordering (EO), is -0.495. These regression results produced a regression model (4.1).

$$\text{Log } Y = 6.257 - 0.495 \text{ ET} \dots\dots\dots (4.1)$$

#### IV. DISCUSSIONS

The aim of this study was to evaluate the effect of electronic ordering on supply chain performance within county governments located in the Western region. The null hypothesis posited in this study was that electronic ordering does not exert a statistically significant effect on the supply chain performance of county governments in the western region. The regression analysis presented in Table 1.18 reveals a regression coefficient of -0.495, which is statistically significant at the 0.001 level. The obtained p-value, which is smaller than the predetermined significance level of 0.05, provides evidence to support the conclusion that electronic ordering has a statistically significant effect on supply chain performance at a 95% confidence level. The coefficient suggests that implementing electronic ordering as part of electronic procurement might enhance supply chain efficiency by decreasing the logarithmic average of inventory cost by 0.495, resulting in a reduction from 6.257 to 5.762. Consequently, the inventory cost would amount to sh.0.578 million (the antilogarithm of 5.762).

The obtained t statistic of 3.776 indicates that electronic sourcing has a statistically significant impact on supply chain performance, as it exceeds the calculated critical t value of 1.980. Consequently, the null hypothesis is rejected based on the existing evidence that electronic ordering has a substantial impact on the supply chain performance of county governments in the western region. The inferential statistics align with the findings of the descriptive statistics, indicating a consensus among the respondents regarding the benefits of electronic ordering. These benefits include facilitating information sharing, enhancing delivery efficiency during contingencies, enabling procurement from multiple suppliers, and addressing uneven demand through proactive planning.

The obtained results align with the findings of Gichuhi's (2021) study, which revealed a statistically significant and favorable correlation between e-ordering and procurement performance among geothermal development firms. The findings exhibited a resemblance to the research conducted by Oteki, Namusonge, Sakwa, and Ngeno (2018), which established a notable correlation between supply chain performance and the implementation of electronic order processing techniques.

The results of the study provided support for the dynamic capability theory, as it was observed that the ability to adapt to evolving markets enables organizations to effectively provide goods and services to county governments within a highly competitive and dynamic context. E-procurement is an approach that integrates both internal and external procurement elements in order to effectively respond to evolving business practices aimed at achieving operational excellence. This is achieved through cost reduction strategies and streamlining the procurement process to expedite the acquisition of goods and services.

#### V. CONCLUSION

The majority of participants in the descriptive statistics analysis indicated that the implementation of electronic ordering systems has a positive impact on supply chain performance in various county governments in the western region of Kenya. This improvement is primarily attributed to the reduction of inventory costs, achieved through the minimization of order processing time, enhanced information sharing, and the ability to address fluctuations in demand and facilitate proactive planning. Based on the inferential statistics analysis, it was determined that there exists a statistically significant relationship between electronic ordering and supply chain in the county governments of the western region of Kenya. This conclusion is supported by a regression coefficient of -0.495 and a p-value of 0.001. Hence, it can be concluded that the implementation of electronic ordering systems has a significant effect on the efficiency and effectiveness of the supply chain within the county government in the western region in Kenya.

#### Recommendations

Based on the analysis of descriptive statistics, a significant proportion of the participants expressed agreement with the notion that there has been no decrease in paperwork inside the County Government. It was therefore recommended that county government should effectively adopt electronic ordering and train its employees on how to use electronic ordering efficiently to minimize use of paperwork in the organization. Reduced paperwork in county government will help to cut down the inventory costs.

Majority of the respondents agreed that human errors is not minimized hence there is no accuracy through electronic Ordering. From these findings, it is recommended that staffs in the county government should be trained on how to place orders electronically. This will help to reduces errors that might be committed by employees during electronic ordering.

Most of the respondents agreed that order processing time has not been minimized in counties in western Region, Kenya. It is therefore recommended that county management together with ICT department should install effective and efficient software that is capable of sending orders faster and receiving feedback from the suppliers. Electronic ordering software should also be monitored frequently to ensure its functioning accordingly.

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