



**INFLUENCE OF INTEGRATED FINANCIAL MANAGEMENT INFORMATION SYSTEM IMPLEMENTATION ON PUBLIC PROCUREMENT PERFORMANCE IN THE COUNTY GOVERNMENT OF BARINGO, KENYA**

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**ABSTRACT**

*The general objective of the study was to investigate the influence of Integrated Financial Management Information System on procurement performance of Baringo County Government. In particular, the study assessed the effect of online procurement plan, online tendering, online invoicing, and online payment on procurement performance of Baringo County Government. The Diffusion of innovation theory, Information Systems Success Model, E-Technology Perspective Theory and Transaction cost theory theories guided the study. Explanatory research design will be adopted. The target population was 119 employees comprising of procurement officers, ICT officers, internal auditors, accountants and prequalified suppliers. A sample of 92 respondents was obtained from the accessible population using simple random sampling technique. A structured questionnaire was used to collect data. The questionnaire was pilot tested to assess its validity and reliability before it is employed to collect data for the main study. Data analysis was aided by the Statistical Package for Social Sciences tool. This analysis was in form of descriptive and inferential statistics. Descriptive statistics included frequencies, percentages, means, and standard deviations. Inferential statistics encompassed correlation and both simple linear and multiple regression analyses. The results of the analyses were presented in tabular form, charts and figures. From the findings, the four null hypotheses were rejected as the study established that online procurement plans, online tendering, online invoicing and online payment significantly influenced procurement performance of County Government of Baringo. In conclusion, integrated financial management information system influenced procurement performance as results of quality of goods and services procured, reduced cost and reduction in lead time during procurement cycle. The study recommended that there is a need for the county government to adopt the least practiced online tendering practices such as e-awarding in order to reduce the transaction costs and speed up the procurement process. Further, county government should automate the practice of invoicing so as to promote transparency and record management since it will be easier to track records or identify payments to be made to suppliers.*

**Key Words:** *Online Procurement Plan, Online Tendering, Online Invoicing, Online Payment, IFMIS*

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## INTRODUCTION

Public procurement is the process that public entities, such as national and county governments and their departments, go through to acquire or purchase goods and services (Adusei, 2018). Public procurement has always been a big part of the developing countries' economy accounting for 10-40% of their Gross Domestic Products (GDPs). Public procurement enables the government to deliver services to the public by ensuring timely access to quality goods and services at fair prices. It should also ensure efficiency in government operations by promoting competition among bidders, who should be treated fairly, thereby increasing public confidence in government operations. Public procurement can also promote local industry and economic development (Thai, 2017).

IFMIS can be described as automation of Public Expenditure Management process which entails; formulation of budgets, execution of budgets and accounting with the help of a fully integrated system for financial management for line ministries and other spending agencies. IFMIS helps in public financial management and control, accounting, auditing as well as reporting. A full system also secures integration and communication with other relevant information systems (Bosire, 2016). IFMISs are introduced to automate and computerize various aspects of budget executions as well as accounting operations across government institutions (USAID, 2008). The system is supported by a reliable database or a series of interconnected databases, where data expressed in financial form flow to and fro (Njonde & Kimanzi, 2014).

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 IFMIS to enhance procurement performance. According to Redges (2012), public procurement performance in Zimbabwe is one area that lags behind in terms of change. Most public sectors in Zimbabwe use a traditional procurement system which is purely

based on adversarial relationships with many suppliers. The study suggested that moving towards efficient public procurement performance, the complexity of procuring information technology, software and IT-services being one of the reasons for such a move.

In Kiambu County, Mugwe and Ngugi (2018) concluded that IFMIS had a significant relationship with public procurement performance, a significant relationship was also established between IFMIS control systems and public procurement performance, further it was also confirmed that online tendering had a significant relationship with public procurement performance, a conclusion was also reached that automated planning had a significant relationship with public procurement performance, and lastly it was found out that automated supplier engagement had a significant relationship with public procurement performance.

The Kenyan government launched IFMIS e-procurement for submitting and evaluating procurement applications in a bid to become more efficient and eliminate corruption. Subsequently the goal is also to slash long queues and processes that take time. As part of the 'Integrated Financial Management Information System' (IFMIS) under the national treasury, the system is intended to give applicants clear instructions and guidelines on how to apply for procurement from government. The system is expected to reduce government spending by having a level playing field for all, (Muhia & Afande, 2015).

The County Government of Baringo has ten key departments that have been entrusted with the delivery of services to the residents of the expansive county. These departments are involved with the purchase of materials and services and also in the disposition of assets. The county government has therefore realized the need for capacity building initiatives so as to support these departments to effectively and efficiently manage their projects. Procurement has as result received a major emphasis, thus prompting the need to build

capacity of those involved in the procurement process (Republic of Kenya, 2016).

Preparation of procurement plans and adherence to the same, carrying out risk based audits, as well as laying out an institutional framework have been prioritised, so as to ensure that there is prudent management of scarce resources so as to realise maximum benefit. This in effect has reduced wastage in the county government, therefore realising a great impact on the intended beneficiaries. Procurement plans have also enabled the departments to prioritise their resources, enabling them to realise their desired outcomes. Baringo County Government has also adopted e-procurement, and therefore all its procurement functions are performed on the IFMIS platform, raising transparency of the procurement process, and allowing more suppliers to access tenders. Several challenges have been encountered which have been characterised by construction delays resulting from the long process of acquiring bills of quantities, and slow procurement process (Republic of Kenya, 2019).

### **Statement of the Problem**

Public procurement in Kenya plays a significant role in the efficient functioning of the Government. However there has been major complains on the wastage of resources, corruption and the lack of value for money in many government procurements in county governments despite the existence of guiding laws and regulations. According to Kenyan E - Government strategy paper (2004), IFMIS E - procurement was one of the medium term objectives which were to be implemented by 2015 among county governments to enhance efficiency in delivery of public services procurement being one of them. Nevertheless, Chemoiwo (2014) revealed that procurement performance in Kenya has been dogged by procurement system inefficiency, lack of sound procurement policy guidelines and lack of a genuinely open and competitive system of procurement amongst other shortcomings.

According to Auditor General Report (2018), the procurement performance in the County of Baringo has not ensured value for money due increase in cost of procurement, increase lead time during procurement process. The report indicated that there was irregular procurement and unsupported expenditure. For instance, an expenditure of 5,500,000 was incurred by the Department of Education and ICT to procure furniture contrary to section 104 (b) of the public procurement and Asset Disposable Act 2015. Payment was done in respect to un-numbered invoice and delivery note. Further, county Executive through the procurement section floated 460 quotations for procurement of various items within the county. However, it was not clear how the procurement section obtained the documents of bidders without delivering the quotation to the respective firms.

Extant studies on influence of IFMIS on public procurement performance have resulted to inclusive findings making it difficult for generalization hence leaving significant knowledge gap. While studies such as Oteki (2019), Mwangi (2020) and Waganda (2018) have indicated significant influence of IFMIS on procurement performance, Makali (2015) indicated that IFMIS has insignificant effect on procurement performance. Similar results were obtained by Munyao and Moronge (2018) as well as Kiusya (2018). Further, Nurwin (2018) found that IFMIS exhibited a negative and insignificant relationship with performance. It is against this backdrop that this study sought to establish the influence of IFMIS on procurement performance of Baringo County Government.

### **Objectives of the Study**

The overall objective of this study was to investigate the influence of integrated financial management information system on procurement performance of Baringo County Government. The specific objectives were;

- To determine the influence of online procurement plan on procurement performance of Baringo County Government.

- To investigate the influence of online tendering on procurement performance of Baringo County Government
- To establish the influence of online invoicing on procurement performance of Baringo County Government
- To establish the influence of online payment on procurement performance of Baringo County Government

The study was guided by the following research hypotheses;

- H<sub>01</sub>: There is no significant influence of online procurement plan on procurement performance of Baringo County Government
- H<sub>02</sub>: There is no significant influence of online tendering on procurement performance of Baringo County Government
- H<sub>03</sub>: There is no significant influence of online invoicing on procurement performance of Baringo County Government
- H<sub>04</sub>: There is no significant influence of online payment on procurement performance of Baringo County Government

## LITERATURE REVIEW

### Diffusion of Innovation Theory

Diffusion of innovation was first put across by Rogers (1962), and later revised in 2003. The adoption of a new innovation, even when it is advantageous is often met with a lot of difficulty. Most innovations take lengthy periods to be widely adopted from the time they first become available. According to Dillon and Morris (1996), lack of acceptance by users stands as a great hindrance to the success of a new Information System. In most cases users are reluctant to adopt information systems that would bring about successful results if they were to be employed (Lember, Kattel & Kalvet, 2014).

According to Dillon and Morris (1996), managerial influence in the organization has the ability to encourage or discourage acceptance, through a reward system or through expressed preferences. Thus managerial influence is of great importance.

Diffusion theory offers a context for examining the uptake of Information Technology over a period of time, but fails to provide a detailed treatment of user acceptance. The assertion of this theory will be used to critically evaluate whether IFMIS E-procurement is disruptive, because the system puts in online payment, online tendering, online procurement planning and online invoicing which is a complete shift from the traditional methods of procurement, altering the status quo. The theory was necessary in helping the researcher to understand the implications of such a system to various stakeholders and the organization as a whole.

### E-Technology Perspective Theory

IFMIS E-procurement as stated by Choi and Dooley (2001), is a first generation concept whose main aim is the buyers, and should progressively move into e-sourcing, and eventually e-collaboration. E-collaboration helps suppliers and customers to raise their coordination through the internet by managing inventory, demand as well as planning the production, facilitating a frictionless procurement paradigm (Shale, 2014).

Adoption of IFMIS e-procurement is still in formative stages, falling short of e-sourcing and e-collaboration (Morris et al., 2003). Transition to modern IFMIS e-procurement requires strategic adaptation. This strategy emphasises on organizational change (Shale, 2014). This theory is of great importance and addresses all the research variables in this study since the study aimed at investigating the influence of IFMIS on Public Procurement Performance in the county government. Understanding the impact of technology adoption in the procurement process is therefore necessary so as to contrast the presence of e-technology against manual based systems, giving a clear picture of the more viable of these two options.

### Transaction Cost Theory

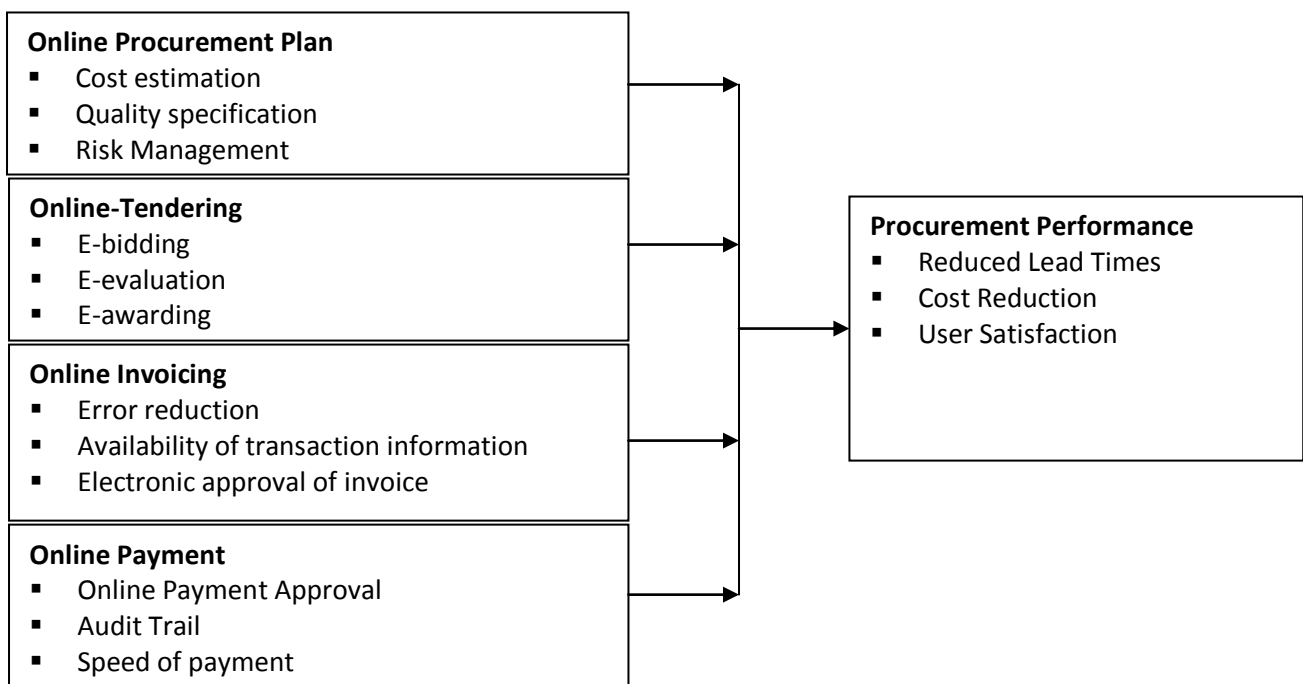
According to Coase (the founder of this theory), as cited in Chepkwony (2015), the Transaction cost



theory is relevant in explaining and understanding why certain tasks are executed by firms while others are performed by markets. The transaction cost theory offers an explanation on why companies exist, and why they expand or source activities out to the external environment. The transaction cost theory asserts that organisations work to reduce the costs of exchanging resources with the environment, and minimize the bureaucratic costs of exchanges within them.

The transaction costs are largely attributed to the uncertainties' and complexities that characterizes the economic systems, and which could be brought about by the environmental, human behaviour and unpredictable events. The disparity in the distribution of the requisite information among the

players affects their efficiency and consequently the transaction costs. The active use of the information and communication has greatly contributed to the reduction of transactions costs. Kauffman and Mohtadi (2014) noted that the adoption and use of the information technology in business processes can result in the reduction of transaction costs. This theory, therefore, fitted this study and relates to the application of IFMIS e-procurement and its performance. There is no doubt that the use of IFMIS has facilitated the reduction of coordination costs (Chepkwony, 2015). Therefore, this theory suited this study because the County Government of Baringo chose to employ the IFMIS e-procurement for efficiency, effectiveness and transparency.



**Independent variables**

**Dependent Variable**

**Figure 1: Conceptual Framework**

**Empirical Review**

Rotich and Okello (2015) examined the relationship between e-procurement and procurement performance of County Governments in Kenya. Data was collected in Kericho County. This study adopted a correlational research design. The sample frame was purposively selected to

constitute 120 employees working in procurement, finance and accounts and IT departments of Kericho County using stratified random sampling. Data was collected by use of structured questionnaires. The study confirmed that automated procurement planning indeed has a significant predictor of change Procurement Performance implying that

automated procurement Planning needs to be emphasized at every procurement cycle in order to have better Procurement Performance in the county governments.

Ngenoh (2019) aimed at establishing the determinants of the e-procurement on supply chain performance in motor vehicle assembly in Kenya; a case study of Toyota Kenya. The study was a case study in nature but adopted descriptive research design and data was collected using well-structured questionnaires from top and middle level employees of Toyota Kenya the target population was all the employees of Toyota Kenya and the sample will be 89 employees. The study findings indicated that electronic procurement planning is significant in ensuring that efficiency along the supply chain is achieved e-procurement can be used as a strategy to achieve competitive advantage and hence create efficiency and increase chances of business success.

Akoth (2017) sought to establish effect of e-procurement on service delivery among county governments in Western Kenya. Correlation research design was adopted. The population comprised all the 200 procurement officers and non-procurement officer procurement committee members. Purposive, cluster and random sampling was used to pick a sample of 133 respondents. Data were collected from secondary and primary sources. The study findings were that; E-tendering was a positive significant predictor of service delivery implying that it enhances service delivery. The study concludes that embracing E-ordering leads to better service delivery among the county governments.

Munezero (2015) conducted a study on e-tendering and performance of public corporations in Rwanda Revenue Authority. The research adopted a descriptive research design where the population of interest was employees of Rwanda Revenue Authority. A multivariate regression model was applied to determine the relative importance of e-tendering with respect to performance. It was established that e-tendering allows selection of a

suitable contractor at a time appropriate to the circumstances and hence enhances the performance of organizations.

Ingavo and Moronge (2019) sought to establish how E-procurement influence performance of state corporations in Kenya. The study employed descriptive research design with sample population of 127 State Corporations in Kenya. The study used primary data which was collected using a comprehensive questionnaire. Quantitative data collected was analysed by the use of descriptive statistics using SPSS (version 23). The study findings indicated a very strong positive relationship between the online invoicing and performance. The study recommended for E-Invoicing especially receiving of invoices from the suppliers allows error reduction in the invoices thus enhancing accuracy of invoice details. Electronic approval of invoices allowed management to visualize the status on each tendering process thus enhanced transparency.

Chepkwony and Lagat (2016) investigated influence of technology (Electronic Data Interchange and Electronic Invoicing) adoption and implementation on buyer-seller relationships in the business-to-business market. The methodology applied in the study was qualitative. The research comprised the study of three case companies that operated in different fields, such as textile production and marketing, machinery and power plant building, and airlines. The study concluded that E-Invoicing influence performance of state corporations in Kenya. The regression coefficients of the study showed that E-Invoicing has a significant positive influence on performance of state corporations in Kenya.

Oteki (2019) sought to investigate the effects of E-procurement on supply chain management performance in Elgeyo Marakwet County. The study was conducted on public entities in Elgeyo Marakwet County. The study adopted the use of questionnaires and interview schedules to collect primary data. The research also adopted descriptive design to collect the quantitative and qualitative

data that describes the effects of e-procurement and supply chain management. The main finding of the study was that were of the opinion that they find payments online more convenient could be interpreted to mean that the development of IT has enhanced the usage of e-payment and improved the use of supply chain management.

Kioko and Mwangangi (2017) carried out a study on the influence of e-procurement on performance of parastatals in Kenya. The main objective of this study was to analyze the influence of e-procurement on performance of parastatals. The specific objectives were to find out whether e-payments have a positive relationship with performance in parastatals. Based on the study findings, the study concludes that performance of parastatals can be improved by e-payment.

Chegugu and Yusuf (2017) investigated the effect of e-procurement practices on organizational performance. The study employed a descriptive survey of 5 hospitals. The sample size was 367 respondents. Questionnaires were the main types of data collection tools. The study found that online-payment makes it cheap to promptly pay suppliers on supply delivery due to fewer charges incurred upon sending money through e-banking systems.

## METHODOLOGY

The study adopted explanatory research design which explores cause effect relationships. The target population or those cases that contain the desired information consisted of 119 employees comprising of procurement officers, ICT officers, internal auditors, accountants, finance officers and prequalified suppliers that were perceived to influence the procurement performance in the county government of Baringo. The study employed a structured questionnaire to collect data from the respondents capturing the various variables of the study. Quantitative data was analysed through the use of descriptive statistics which included: frequencies, percentages, means, standard deviations and inferential statistics through

Multiple Linear Regression Model. Multiple regression analysis was helpful in the determination of relationship between independent and dependent variables. The regression analysis was guided by the following model:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where,

Y Represents Procurement Performance

X<sub>1</sub> Represents Online Procurement Planning

X<sub>2</sub> Represents Online Tendering

X<sub>3</sub> Represents online invoicing

X<sub>4</sub> Represents Online Payment

ε Represents error term

α Represents Y intercept, β<sub>1</sub>, β<sub>2</sub>, β<sub>3</sub> and β<sub>4</sub> are the net changes in Y

## FINDINGS AND DISCUSSION

### Descriptive Statistics

The study did sought to interrogate whether integrated financial management information system influences procurement performance of Baringo County Government. To describe a distribution of the scores of measurements using indices or statistics the study entailed use of descriptive statistics to present findings using percentages. In the analysis, the study used; 1- Strongly Disagree, 2-Disagree, 3-Undecided, 4- Agree, 5-Strongly Agree.

### Procurement Performance in the County Government of Baringo

To determine the influence of Integrated financial management information system on procurement performance in Baringo County, the researcher sought to find information regarding the procurement performance which is the main response variable in this study. The findings were as displayed in below in Table 1.



**Table 1: Descriptive Analysis for Procurement Performance**

<b>Procurement Performance</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>Mean</b>	<b>SDV</b>
Adoption of IFMIS in procurement has enhanced transparency and accountability in Procurement process	14 (22.6)	32 (51.6)	9 (14.5)	5 (8.1)	2 (3.2)	3.823	.9839
The quality of products and services procured has improved as a result of proper IFMIS in procurement	16 (25.8)	32 (51.6)	10 (16.1)	2 (3.2)	2 (3.2)	3.935	.9210
Use of IFMIS in procurement has led to timeliness delivery of products and services	18 (29)	18 (29)	19 (30.6)	4 (6.5)	3 (4.8)	3.710	1.1072
Embracing IFMIS in procurement has ensured services and products are acquired at right price	12 (19.4)	26 (41.9)	16 (25.8)	6 (9.7)	2 (3.2)	3.645	1.0097
Due to IFMIS adoption, right quantity of products and services are procured.	16 (25.8)	18 (29)	20 (32.3)	6 (9.7)	2 (3.2)	3.645	1.0727
The use of IFMIS has led to reduced cost associated with procurement	10 (16.1)	18 (29)	28 (45.2)	4 (6.5)	2 (3.2)	3.484	.9537
<b>Composite Mean</b>						<b>3.707</b>	<b>1.008</b>

From table 1, most respondents agreed (51.6%) that adoption of IFMIS in procurement has enhanced transparency and accountability in Procurement process with a mean of 3.823. The results also revealed that 51.6% of respondents agreed that the quality of products and services procured has improved as a result of proper IFMIS in procurement with a mean of 3.934.

More so, 29.0% of respondents agreed that use of IFMIS in procurement had led to timeliness delivery of products and services although 30.6% of the respondents were undecided that the use of IFMIS in procurement has led to timeliness delivery of products and services with a mean of 3.710. The study also established that 41.9% of the respondents agreed that embracing IFMIS in procurement has ensured services and products are acquired at right price with a mean of 3.645.

In regard to due to IFMIS adoption, right quantity of products and services were procured, 29.0% of the respondents agreed while 32.3% of the respondents were undecided with a mean of 3.6. Lastly, 29.0% of the respondents agreed that the use of IFMIS had led to reduced cost associated with procurement with 45.2% of them remaining undecided. The

mean of 3.5 indicated that the use of IFMIS had led to reduced cost associated with procurement.

Averagely, the procurement performance at County Government of Baringo was at 74.1% mean response (mean=3.707, std. dev. =1.008) rated high, an indication that the adoption of IFMIS influences procurement performance in the County Government of Baringo. According to Muraya (2016) optimal procurement performance attainment is dependent on how current suppliers` relationships are managed so as to ensure constant availability of needed quality supplies at the organization.

#### **Online Procurement Plan and Procurement Performance**

The first objective of this study was to determine the influence of online procurement plan on procurement performance of Baringo County Government. To achieve this, the researcher queried the respondents about the online procurement plan. The responses were as shown in Table 2.

**Table 2: Descriptive Analysis for Online Procurement Plan**

<b>Online Tendering</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>Mean</b>	<b>SDV</b>
Online procurement plan has helped to reduce haphazard procurement making the county governments markets more attractive to suppliers	12 (15.2)	29 (36.7)	22 (27.8)	8 (10.1)	8 (10.1)	3.367	1.1677
Online procurement plans facilitates effective risk management in the procurement cycle	3 (3.8)	65 (82.3)	4 (5.1)	5 (6.3)	2 (2.5)	3.785	.7280
Online procurement plans has led to regular and unbiased decisions during procurement process	25 (31.6)	47 (59.5)	1 (1.3)	4 (5.1)	2 (2.5)	4.127	0.8678
Online procurement plan influences procurement by providing focused and efficient utilization of resources	14 (17.7)	56 (70.9)	2 (2.5)	5 (6.3)	2 (2.5)	3.949	0.8305
Online procurement plan has enhanced effective cost estimation for services and works	52 (65.8)	13 (16.5)	5 (6.3)	6 (7.6)	3 (3.8)	4.329	1.1291
Online procurement plan has resulted to improvement in procurement performance	7 (8.9)	59 (74.7)	4 (5.1)	5 (6.3)	4 (5.1)	3.759	.8946
<b>Composite Mean</b>						<b>3.886</b>	<b>0.9363</b>

From Table 2, 36.7% of the sampled respondents indicated that online procurement plan has helped to reduce haphazard procurement making the county governments markets more attractive to suppliers while 27.8% were undecided with a mean of 3.4. However, majority of the respondents (82.3%) agreed that online procurement plans facilitates effective risk management in the procurement cycle with a mean of 3.8. In regards to online procurement plans has led to regular and unbiased decisions during procurement process, 59.5% of the respondents agreed while 31.6% strongly agreed with a mean of 4.1.

The results also revealed that majority of the respondents (70.9%) agreed that online procurement plan influences procurement by providing focused and efficient utilization of resources with a mean of 3.9. On the other hand, 65.8% of the respondents strongly agreed with a mean of 4.329. Lastly, 74.7% of the respondents agreed that online procurement plan has resulted to improvement in procurement performance with a mean of 3.8.

Averagely, the level of online procurement plan was at 77.7% mean response (mean=3.886, std. dev.

=0.9363) rated high as shown in Table 2 an implication that online procurement plan such as cost estimation, quality specification and risk management influences procurement performance. The results of this study concur with the findings of Brahim et al (2014), who found out that the objective of procurement planning is to help in the avoidance of haphazard procurement, thus making the government's market place more attractive and transparent to the suppliers as well as service providers. Ngenoh (2019) indicated that electronic procurement planning is significant in ensuring that efficiency along the supply chain is achieved e-procurement can be used as a strategy to achieve competitive advantage and hence create efficiency and increase chances of business success.

#### **Online Tendering and Procurement Performance**

The second objective of this study was to investigate the influence of online tendering on procurement performance of Baringo County Government. To achieve this, the researcher sought from the respondents' information about the online tendering. The responses were as shown in Table 3.

**Table 3: Descriptive Analysis for Online Tendering**

<b>Online Tendering</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>Mean</b>	<b>SDV</b>
Online preparation of specification has led to error reduction in the specs for the goods to be procured	22 (27.8)	26 (32.9)	18 (22.8)	8 (10.1)	5 (6.3)	3.658	1.1755
Online transmission of bid documents to tenderers for filling in has reduced the bureaucracy in the bid evaluation process	21 (26.6)	25 (31.6)	27 (34.2)	5 (6.3)	1 (1.3)	3.759	.9636
Online tendering practice has enabled faster submissions of tender documents by prospective suppliers	2 (2.5)	69 (87.3)	4 (5.1)	3 (3.8)	1 (1.3)	3.861	0.5714
Online tendering contributes to reduced tendering cycle times	46 (58.2)	25 (31.6)	3 (3.8)	1 (1.3)	4 (5.1)	4.367	1.0023
Online tendering adoption enhances accuracy, transparency and integrity in the procurement processes	4 (5.1)	58 (73.4)	8 (10.1)	6 (7.6)	3 (3.8)	3.684	0.8404
Online tendering has resulted to improvement in procurement performance	41 (51.9)	26 (32.9)	9 (11.4)	2 (2.5)	1 (1.3)	4.316	.8704
<b>Composite Mean</b>						<b>3.941</b>	<b>0.9039</b>

Results in Table 3, revealed that 32.9% of the sampled respondents agreed that online preparation of specification has led to error reduction in the specs for the goods to be procured with a mean of 3.658. The results also revealed that 31.6% of the respondents agreed that online transmission of bid documents to tenderers for filling in has reduced the bureaucracy in the bid evaluation process although 34.2% were undecided with a mean of 3.8. In regards to online tendering practice has enabled faster submissions of tender documents by prospective suppliers, majority of the respondents agreed on that assertion with a mean of 3.9.

The results also revealed that majority of the respondents (58.2%) strongly agreed that Online tendering contributes to reduced tendering cycle times and further 31.6% agreed with a mean of 4.4. More so, 73.4% of the respondents agreed with a mean of 3.7 that online tendering adoption enhances accuracy, transparency and integrity in the procurement processes. Lastly, majority of the respondents strongly agreed that online tendering has resulted to improvement in procurement performance and further 32.9% agreed with a mean of 4.3.

Averagely, the level of online tendering at the County Government of Baringo was at 78.8% mean response (mean=3.941, std. dev. =0.9039) rated high as shown in Table 3. This is an indication that the way in which E-bidding, E-evaluation and E-awarding is conducted influences procurement performance. The findings were similar to those of Rotich et al (2015), who found out that online tendering reduced the tender cycle by improving the choice of suppliers and stating in advance the specifications of tender performance, and reducing the costs associated with tendering process. Munezero (2015) established that e-tendering allows selection of a suitable contractor at a time appropriate to the circumstances and hence enhances the performance of organizations.

#### **Online Invoicing and Procurement Performance**

The third objective of this study was to establish the influence of online invoicing on procurement performance of Baringo County Government. To achieve this, the researcher probed the respondents about the online invoicing. The responses were as shown in Table 4.

**Table 4: Descriptive Analysis for Online Procurement Plan**

<b>Online Invoicing</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>Mean</b>	<b>SDV</b>
Online receiving of invoices from the suppliers allows error reduction in the invoices	23 (29.1)	42 (53.2)	5 (6.3)	6 (7.6)	3 (3.8)	3.962	1.0057
Online processing of invoices in payment preparation minimizes manual paper trail	34 (43)	42 (53.2)	1 (1.3)	1 (1.3)	1 (1.3)	4.354	.6987
Online approval of invoices allows management to visualize the status on each tendering process	46 (58.2)	27 (34.2)	4 (5.1)	1 (1.3)	1 (1.3)	4.468	0.7652
Online invoicing has assured secured and low-cost procurement transactions	16 (20.3)	45 (57)	8 (10.1)	7 (8.9)	3 (3.8)	3.810	0.9881
Reliability of service delivery has increased through availability of transaction information for Goods and services	31 (39.2)	30 (38)	3 (3.8)	8 (10.1)	7 (8.9)	3.886	1.2809
Online invoicing has resulted to improvement in procurement performance	9 (11.4)	46 (58.2)	9 (11.4)	12 (15.2)	3 (3.8)	3.582	1.0078
<b>Composite Mean</b>						<b>4.01</b>	<b>0.9577</b>

From Table 4, majority of the respondents (53.2%) agreed that Online receiving of invoices from the suppliers allows error reduction in the invoices with a mean of 4.0. Similarly, majority of the respondents (53.2%) agreed that online processing of invoices in payment preparation minimizes manual paper trail with a mean of 4.4. However, majority of the respondents (58.2%) strongly agreed that online approval of invoices allows management to visualize the status on each tendering process with a mean of 4.5.

In regards to online invoicing has assured secured and low-cost procurement transactions, majority of the respondents (57.0%) agreed that online invoicing has assured secured and low-cost procurement transactions with a mean of 3.8. The results also revealed that 39.2% of the respondents agreed that reliability of service delivery has increased through availability of transaction information for Goods and services with a mean 3.9. Lastly, 58.2% of the respondents agreed that online invoicing has resulted to improvement in procurement performance with a mean of 3.6.

Averagely, the level of online invoicing was at 80.2% mean response (mean=4.01, std. dev. =0.98) rated high as shown in Table 4 a suggestion that online invoicing such as error reduction, availability of transaction information and electronic approval of invoice influences procurement performance. Osir (2016) revealed that state corporations have adopted online invoicing to improve procurement performance. Makali (2015) indicated that E-procurement contributes greatly towards better communication between the different departments and branches thus it helps ensure operational efficiency and effectiveness. The most critical practices that contribute greatly to procurement performance in supermarkets are e-invoicing.

#### **Online payment and Procurement Performance**

The fourth objective of this study was to establish the influence of online payment on procurement performance of Baringo County Government. To achieve this, the researcher sought from the respondents' information about the online payment. The responses are as shown in Table 5.

**Table 5: Descriptive Analysis for Online Tendering**

<b>Online Payment</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>Mean</b>	<b>SDV</b>
Online payment processing makes it cheap to promptly pay suppliers on supply delivery due to fewer charges incurred upon sending money through e-banking systems	31 (39.2)	29 (36.7)	5 (6.3)	13 (16.5)	1 (1.3)	3.962	1.1145
Electronic transmission of payment to the supplier against goods delivered has led timely supply of goods and services	3 (3.8)	59 (74.7)	4 (5.1)	11 (13.9)	2 (2.5)	3.633	.8649
Electronic transmission of payment to the supplier allows speedy remission of funds	2 (2.5)	65 (82.3)	5 (6.3)	6 (7.6)	1 (1.3)	3.772	0.6784
With online payment, transactional tasks have decreased	2 (2.5)	61 (77.2)	5 (6.3)	8 (10.1)	3 (3.8)	3.646	0.8479
Online approval payment has ensured value for money due to reduction of misappropriation	20 (25.3)	36 (45.6)	9 (11.4)	4 (5.1)	10 (12.7)	3.658	1.2698
Online payment has resulted to improvement in procurement performance	2 (2.5)	59 (74.7)	4 (5.1)	13 (16.5)	1 (1.3)	3.608	.8385
<b>Composite Mean</b>						<b>3.713</b>	<b>0.9357</b>

As indicated in the table above, 32.9% of the sampled respondents strongly agreed that online payment processing makes it cheap to promptly pay suppliers on supply delivery due to fewer charges incurred upon sending money through e-banking systems with a mean of 4.0. Majority of the respondents (74.7%) agreed that electronic transmission of payment to the supplier against goods delivered has led timely supply of goods and services with a mean of 3.6. Similarly, 82.3% of the respondents agreed that electronic transmission of payment to the supplier allows speedy remission of funds with a mean of 3.8.

The results also revealed that majority of the respondents (77.2%) agreed that online payment, transactional tasks have decreased with a mean of 3.6. More so, 45.6% of the respondents agreed that online approval payment has ensured value for money due to reduction of misappropriation with a mean of 3.7. Lastly, majority of the respondents

(74.7%) strongly agreed that online payment has resulted to improvement in procurement performance with a mean of 3.6.

Averagely, the level of online payment at the County Government of Baringo was at 74.3% mean response (mean=3.713, std. dev. =0.9357) rated high as shown in Table 5. This is an indication that the way in which Online Payment Approval, Audit Trail and Speed of payment is conducted influences procurement performance. Kioko and Mwangangi (2017) concluded that performance of parastatals can be improved by e-payment. Oteki (2019) investigated the effects of E-procurement on supply chain management performance in Elgeyo Marakwet County. The main finding of the study was that were of the opinion that they find payments online more convenient could be interpreted to mean that the development of IT has enhanced the usage of e-payment and improved the use of supply chain management.



## Inferential statistics

**Table 6: Correlations**

		Online Procurement plan	Online Tendering	Online Invoicing	Online Payment
<b>Online Procurement plan</b>	Pearson Correlation	1	.601**	.662**	.633**
	Sig. (2-tailed)		.000	.000	.000
	N	79	79	79	79
<b>Online Tendering</b>	Pearson Correlation	.601**	1	.703**	.666**
	Sig. (2-tailed)	.000		.000	.000
	N	79	79	79	79
<b>Online Invoicing</b>	Pearson Correlation	.662**	.703**	1	.718**
	Sig. (2-tailed)	.000	.000		.000
	N	79	79	79	79
<b>Online Payment</b>	Pearson Correlation	.633**	.666**	.718**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	79	79	79	79
<b>Procurement Performance</b>	Pearson Correlation	.676**	.772**	.744**	.727**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	79	79	79	79

\*\* . Correlation is significant at the 0.01 level (2-tailed).

First, test of linearity refers to the degree to which the change in the dependent variable is related to the change in the independent variable. This was tested by correlation coefficients and correlation results showed that all of the study's independent variables (online procurement plan, online tendering, online invoicing, online payment) have significant correlation with the dependent variable procurement performance of County Government of Baringo) as shown in the table on correlation analysis.

Secondly, multicollinearity tests whether two or more conceptualized independent variables are highly correlated with each other. This leads to problems with understanding which independent variable contributes to the variance explained in the dependent variable, as well as statistical problems in calculating a multiple regression model. This assumption was tested using correlation analysis. Most researchers insist that if correlation coefficient, (r) is close to 1 or -1, then there is multicollinearity but if correlation coefficient (r) is not above 0.9, then there is no multicollinearity In this study (table on correlation analysis), the highest correlation coefficient between all pairs of

independent variables (online procurement plan, online tendering, online invoicing, online payment) is 0.718, which is below the threshold of 0.9, thus multicollinearity assumption was checked and met.

### Multiple Regression Analysis

Multiple regression analysis was computed after assumptions of multiple regression models were tested and met. The results in table 7 showed an R square of 0.721, thus we inferred that the study model explained 72.1% of the variations in the procurement performance of County Government of Baringo while other factors not in this study model accounts for 27.9%, thus, it was a good study model.

Further, ANOVA results in table 7 also showed that the F-statistical value was significant ( $F=47.833$ , significant at  $p<.001$ ), thus confirming the fitness of the model. That is, from the study model, the significant F value showed that the four independent variables (online procurement plan, online tendering, online invoicing, online payment) are indeed different from each other and that they affect the dependent variable procurement performance of County Government of Baringo) in varied ways.

**Table 7: Multiple regression analysis**

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.849 <sup>a</sup>	.721	.706	.22845	.721	47.833	4	74	.000

a. Predictors: (Constant), Online payment, Online Procurement Plan, Online Tendering, Online Invoicing

ANOVA <sup>a</sup>					
Model		Sum of Squares	Df	Mean Square	Sig.
1	Regression	9.985	4	2.496	.000 <sup>b</sup>
	Residual	3.862	74	.052	
	Total	13.847	78		

a. Dependent Variable: Procurement Performance  
 b. Predictors: (Constant), Online payment, Online Procurement Plan, Online Tendering, Online Invoicing

Finally, from the values of unstandardized regression coefficients with standard errors in parenthesis, all the independent variables (online procurement plan;  $\beta = 0.174$  (0.086) at  $p < 0.05$ ; online tendering;  $\beta = 0.363$  (0.089) at  $p < 0.01$ ; online invoicing;  $\beta = 0.206$  (0.102) at  $p < 0.05$ , online payment;  $\beta = 0.194$  (0.087) at  $p < 0.05$ ; were significant predictors of procurement performance of County Government of Baringo (dependent variable).

Therefore, the final multiple regression equation for overall significant multiple influence of the study's

independent variables (online procurement plan, online tendering, online invoicing, online payment) on procurement performance of County Government of Baringo (dependent variable) is;

$$(v) y = 0.557 + 0.174X_1 + 0.363X_2 + 0.206X_3 + 0.194X_4$$

Where;

y= procurement performance of County Government of Baringo

X<sub>1</sub>= online procurement plan

X<sub>2</sub>= online tendering

X<sub>3</sub>= online invoicing

X<sub>4</sub>= online payment

**Table 8: Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.557	.271		2.060	.043
Online Procurement Plan	.174	.086	.177	2.029	.046
Online Tendering	.363	.089	.378	4.075	.000
Online Invoicing	.206	.102	.207	2.026	.046
Online payment	.194	.087	.214	2.224	.029

a. Dependent Variable: Procurement Performance

**Hypothesis testing**

The study tested a total of four null hypotheses and the decision of accepting or rejecting each null hypothesis is explained as follows; The decision is to either accept the null hypothesis (H<sub>0</sub>) if its corresponding unstandardized regression

coefficient  $\beta = 0$  and not significant at 5% ( $p > 0.05$ ) from the multiple regression results; or reject the null hypothesis (H<sub>0</sub>) and accept the alternative hypothesis (H<sub>A</sub>) if its corresponding unstandardized regression coefficient  $\beta \neq 0$  and significant at 5% ( $p < 0.05$ ).

First, null Hypothesis)  $H_{01}$ : There is no significant influence of online procurement plan on procurement performance of Baringo County Government. Alternative Hypothesis)  $H_{A1}$ : There is significant influence of online procurement plan on procurement performance of Baringo County Government. Results; online procurement plan;  $\beta = 0.174$  (0.086) *significant at  $p < 0.05$* . *Verdict*; we rejected the null hypothesis ( $H_{01}$ ) and accepted the alternative hypothesis ( $H_{A1}$ ) that there is no significant influence of online procurement plan on procurement performance of Baringo County Government.

Second, null Hypothesis)  $H_{02}$ : There is no significant influence of online tendering on procurement performance of Baringo County Government. Alternative Hypothesis)  $H_{A2}$ : There is significant influence of online tendering on procurement performance of Baringo County Government. Results; online tendering;  $\beta = 0.363$  (0.089) *significant at  $p < 0.01$* . *Verdict*; we rejected the null hypothesis ( $H_{02}$ ) and accepted the alternative hypothesis ( $H_{A2}$ ) that there is significant influence of online tendering on procurement performance of Baringo County Government.

Third, null Hypothesis)  $H_{03}$ : There is no significant influence of online invoicing on procurement performance of Baringo County Government. Alternative Hypothesis)  $H_{A3}$ : There is significant influence of online invoicing on procurement performance of Baringo County Government. Results; online invoicing;  $\beta = 0.206$  (0.102) *significant at  $p < 0.05$* . *Verdict*; we rejected the null hypothesis ( $H_{03}$ ) and accepted the alternative hypothesis ( $H_{A3}$ ) that there is no significant influence of online invoicing on procurement performance of Baringo County Government.

Fourth, null Hypothesis)  $H_{04}$ : There is no significant influence of online payment on procurement performance of Baringo County Government. Alternative Hypothesis)  $H_{A4}$ : There is significant influence of online payment on procurement

performance of Baringo County Government. Results; online payment;  $\beta = 0.194$  (0.087) *significant at  $p < 0.05$* . *Verdict*; we rejected the null hypothesis ( $H_{04}$ ) and accepted the alternative hypothesis ( $H_{A4}$ ) that there is no significant influence of online payment on procurement performance of Baringo County Government.

## CONCLUSIONS AND RECOMMENDATIONS

First, the study concluded that online procurement plan significantly influence procurement plan in the County Government of Baringo. This is an indication that online procurement plan such as effective risk management in the procurement cycle, effective cost estimation for services and works, focused and efficient utilization of resources enhances quality of goods and services procured, cost reduction and reduced lead time during procurement.

Secondly, procurement performance of County Government of Baringo is significantly influenced by online tendering. This suggested that online tendering enables faster submissions of tender documents by prospective suppliers, reduced tendering cycle times, and enhances accuracy, transparency and integrity in the procurement processes which resulted to improvement in procurement performance in Baringo County Government.

Thirdly, online invoicing has significant influence on procurement performance in the County Government of Baringo. This postulated that that improvement error reduction in the invoices reduced costs related with procurement performance. Further, online approval of invoices allows management to visualize the status on each tendering process and online invoicing has assured secured and low-cost procurement transactions which have improved procurement performance.

Lastly, the study concluded that procurement performance in the County Government of Baringo is significantly influence by online payment. Electronic transmission of payment to the supplier against goods delivered has led timely supply of goods and services Electronic transmission of

payment to the supplier allows speedy remission of funds. Therefore, online payment influences procurement performance.

The study recommended that county governments need to enhance utilization of online procurement plan as they help to reduce haphazard procurement thereby making county governments markets more attractive to suppliers which ensure goods and service procured are of high quality.

It is also recommended that since adoption of online tendering positively and significantly affects procurement performance, there is a need for the County Government to adopt the least practiced online tendering practices such as e-awarding in order to reduce the transaction costs and speed up the procurement process.

The study recommended that County Government should automate the practice of invoicing so as to promote transparency and record management since it will be easier to track records or identify payments to be made to suppliers. Online invoicing should therefore benefit the organization by enhancing their financial controls and improved accounting, recording and reporting procedures.

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The study recommends that since adoption of online payment influence procurement performance, there is perhaps a need to adopt those online payments practices to a great extent and see their effect on procurement performance so as to enhance flexibility in payment options and improve procurement cycle.

## Areas for further studies

The study focused on independent and dependent variables, further study should consider the influence of moderating variables such ICT competency on the relationship between IFMIS and procurement performance at the county government

The study focused on IFMIS which was conceptualized into online procurement plan, online tendering, online invoicing and online payment. The study recommended that further studies should consider other variables such as online information, online auction among other online functions of IFMIS.

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