



INFLUENCE OF ELECTRONIC PROCUREMENT ON THE PERFORMANCE OF TENDERING PROCESS. A CASE OF KIZIGURO DISTRICT HOSPITAL, IN GATSIBO DISTRICT, RWANDA

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Abstract: *The work entitled “Influence of electronic procurement on the Performance of tendering process. A case of Kiziguro District Hospital, in Gatsibo District, Rwanda” was conducted for assessing the validity of four specific objectives such as: to assess how e-catalogue is influencing performance of tendering process in Kiziguro district hospital, to evaluate how e-tendering is influencing performance of tendering process in Kiziguro district hospital, to examine how e-evaluation is influencing performance of tendering process in Kiziguro district hospital and to assess how e-contract is influencing performance of tendering process in Kiziguro district hospital. This study has adopted three theories theory which are “Technology Acceptance Model (TAM), Transaction Cost Theory and theory of price determination”. The technology could be used based on its expected contribution in services delivery, or in improving efficiency of service delivery from a specific institution. This how also electronic procurement was adopted in Rwanda for making easy tendering process and other procurement functions. The transaction cost theory states that the goal of any organization is to minimize costs associated with transactions. Subsequently, the organization will either select to oversee these assets remotely or inside, depending on exchange costs. And the hypothesis of cost assurance state that, there's a got to open a competition for evaluating who will perform the whole work as arranged at moo costs. This study was census, descriptive, qualitative, and quantitative design. The study was used primary data. 119 respondents as entire population was assessed; the study has adopted census technique. Data was collected using questionnaire. Analysis of data was performed using SPSS (Statistical Package for Social Scientists) and results obtained were presented in form of descriptive statistics and inferential statistics. The results were presented as follows: The Bivariate correlation analysis results indicate Pearson correlation or “r” which is equal to 0.620 and Sig. (2-tailed) equal to 0.000. This means that, there is a positive correlation between electronic procurement and Performance of tendering process and this correlation is moderate. The correlation is also statistically significant as p-value of 0.000 is less than 1% level of significance. In other words, Electronic procurement contribute 62% in Performance of tendering process. Heath sector is important to the public as hospital is not working for business but for saving people's lives. As recommendations, there is a need to increase efficiency in procurement process and to make highly improved tendering process from highly qualified bidders. This is associated to needs of health services and goods because are the main items tendered by Kiziguro district hospital in addition to health sector infrastructures. If not provided on time may affect living conditions of people. Due to that, there is a need to create systematic and regular training on the electronic procurement functions and to ensure that, there is no tender offered out of the system in the near future.*

Keywords: *Influence; Electronic Procurement; Performance; Tendering Process; Kiziguro District Hospital.*

0. Introduction

Globally, in most countries of America, Europe, Asia and some countries of Africa, electronic tendering under electronic procurement process was supported and adopted by digital transformation process. This was mostly promoted as a target of making the World easy accessible wherever you are, and the world become like a single point. Several digital tools were developed and each service or sector has specific tools, and electronic tendering was simplified as and outcome of the digital process in procurement functions (Asare, 2022). In 2018, the European Union (EU) presented its view of the benefits of digitalization of public procurement in member states. These benefits include significant savings for all parties, simplified and shortened processes, reductions in red-tape

and administrative burdens, increased transparency, greater innovation, increased opportunities due to improved access for businesses to public procurement markets, including increased opportunities for small and medium-sized enterprises (SMEs) (Vincze, 2020).

1. Statement of the problem

Digitization of procurement planning and purchase processes eliminates several manual steps while accelerating procurement workflow and reducing costly human errors. Digitization can reduce processing costs up to 70% in an organization (Eugenie, 2022). However, savings is not the only thing that e - Procurement offers. When a business deploys e-procurement solutions and achieves a 100% adoption rate, purchasing compliance accelerates ten times, more spending is analyzed, and goods and services can be negotiated at better prices (OECD, 2018). This is under government of Rwanda targets while implementing e-procurement decentralization (RDB, 2021).

The objective of the research problem is to give the reader as well as the researcher an exact idea of the matter the topic is trying to clarify or search answers for. The research problem is to assess the “Influence of electronic procurement on the Performance of tendering process”. This problem arises from the fact that the success of e-procurement solutions has not been as achieved as expected (see report of Rwanda Public Procurement Authority (RPPA), 2022).

- According to the Rwanda Public Procurement Authority (RPPA), some tenders were offered offline not using e-procurement 958 tenders by 2021/2022. In the same period 0.04% of contracts were suspended during contract execution. These can lead an organization the spent of large sums of money and time on its tendering processes.

- Another issue is that many suppliers are still neglecting these technologies because of lack of technical knowledge and lack of e-procurement skills; and are still relying on to traditional manual in procurement when it comes to the purchasing of goods and services. And this procurement method has been criticized for having many deficits, that contributed to huge losses in public funds and lacks of transparency, accountability and fair competition” (new times, 2015).

- In line with procurement capacity within procuring entities, the following weakness and challenges were noticed: Tender documents/requests for proposals which did not conform to the national standard bidding documents; Shortfalls observed in the preparation of technical specifications and terms of reference for tender documents/request for proposals documents thereby affecting the evaluation process; Some technical requirements were not set properly enough to guarantee the desired performance and this led to some disputes with contractors/supplier/consultant during the contract execution; and Lack of quality control and poor contracts management resulting from insufficient resources (human, financial, supervision vehicles, quality control tools, etc.) (RPPA, 2023).

- There is no study conducted on the influence of e-procurement on performance tendering process on case of Kiziguro district hospital. Thus, the researcher become interested by covering this gap. Here also this study intends to assess specifically the extent to which Kiziguro district health centers use e-procurement functions and over the years has made Performance in tendering process or is still also facing different challenges as highlighted above by RPPA (2023).

- In other words, Rwandan government has invested more money and incentives in the e-procurement system, however in some areas, the system is not fully utilized, thus, this study intends to assess whether the government goal has achieved on the side of Kiziguro district hospital. This study also intends to cover the literature gap by evaluating whether introduction of e-procurement has made added value for tendering process or nothing has changed compared to the old procuring system (manual procurement system).

Therefore, the author of this research thesis would like to fill this gap by investing the influence of e-procurement on performance of tendering process on case of Kiziguro district hospital.

2. Empirical Studies

In this section, the study examines the literature from different author’s achievements in the similar studies to this more specifically on the studies which can bring additional insight on the current study objectives. Here are more details:

2.1 How e-catalogue is influencing on Performance of tendering process in Kiziguro district hospital.

An e-Catalogue is an online resource that both lists a vendor’s products and enables online ordering and payment. As such, e-Catalogues deliver many benefits for both buyers and vendors that traditional procurement methods do not. E-Catalogues make it easy for vendors to include detailed information about their products so that the buyer can assess the suitability of a product at a glance. Traditional catalogues often do not have the same ease of functionality. Similarly, suppliers can easily update product and pricing information. Updates are automatically reflected across the entire e-Catalogue system; therefore, buyers can be confident that they are working with the latest information. As a result, e-Catalogues are particularly useful for streamlining the procurement of goods and services that are used frequently. This is where the biggest time-savings are achieved. Crucially, e-Catalogues from a range of approved vendors can be brought together in a single portal so the buyer only needs to visit one site to meet all his/her procurement requirements. This ease and speed of functionality can only be achieved by integrating traditional methods of procurement with modern technology (Aaron Ferdinand,2017).

Using catalogue management to ensure product data quality and configurability to the buyer’s required format is crucial. This is a dynamic process that can enable suppliers to quickly broadcast product and price changes and introduce new items. E-Catalogue management is the process where a supplier makes product content available to buyers so goods can be procured electronically. Either the supplier or the buyer can host the product content. Electronic catalogues are digital publications that present products with the purpose of helping them sell. The e-Catalogue solution provides organizations and their respective users with a number of uses, including: The ability to search and display product data, Online ordering capabilities, Can facilitate data exchange between trading partners, Punch-out functionality for companies who need to support this requirement (B2B e-solution). The use of standards can result in cost and time savings, as well as in the expansion to new markets.

2.2 How e-tendering is influencing on Performance of tendering process in Kiziguro district hospital

A tender is prepared and then posted; an authorized buyer is given secure access for document retrieval. The deadline and procedures for electronic bid submission (EBS) are clearly identified for both buyers and suppliers. Prospective bidders register, are authenticated and are then given a secure access key with which to submit their bids (Lewis et al., 2009). Proposals and associated response documents are submitted through an electronic bid submission system which logs a receipt and sends the supplier confirmation. Updates to the submissions can be made up to the time of closing. All submitted documents are stored in a secure fashion with a high level of security and bids may only be opened by the authorized buyer after the closing date and time have passed. A full electronic audit trail on all activity is maintained. Electronic bid submission improves supply chain performance because of easy accessibility (Mwai, 2013).

Hence, e-procurement appears to have the capability to alter ancient standard hones and assert unused and more effective energetic forms. Be that as it may, indeed in case the subject has been talked about for a long time, e-procurement has not gotten to be an operational standard however. Employing an estimation system to measure e-procurement benefits ought to be the correct approach to propel a cognizant selection and advance the persistent Performance of this and other IT advancements. In this way, the demonstrate herewith uncovered speaks to a commitment to update open processes strategically, by empowering centered advancements.

This alter handle needs to be guided by enabled HR, liberated from bureaucratic exercises, they ought to be able to work more viably, producing added-value, and measuring it (Gardenal, 2023).

2.3 How e-evaluation is influencing on Performance of tendering process in Kiziguro district hospital.

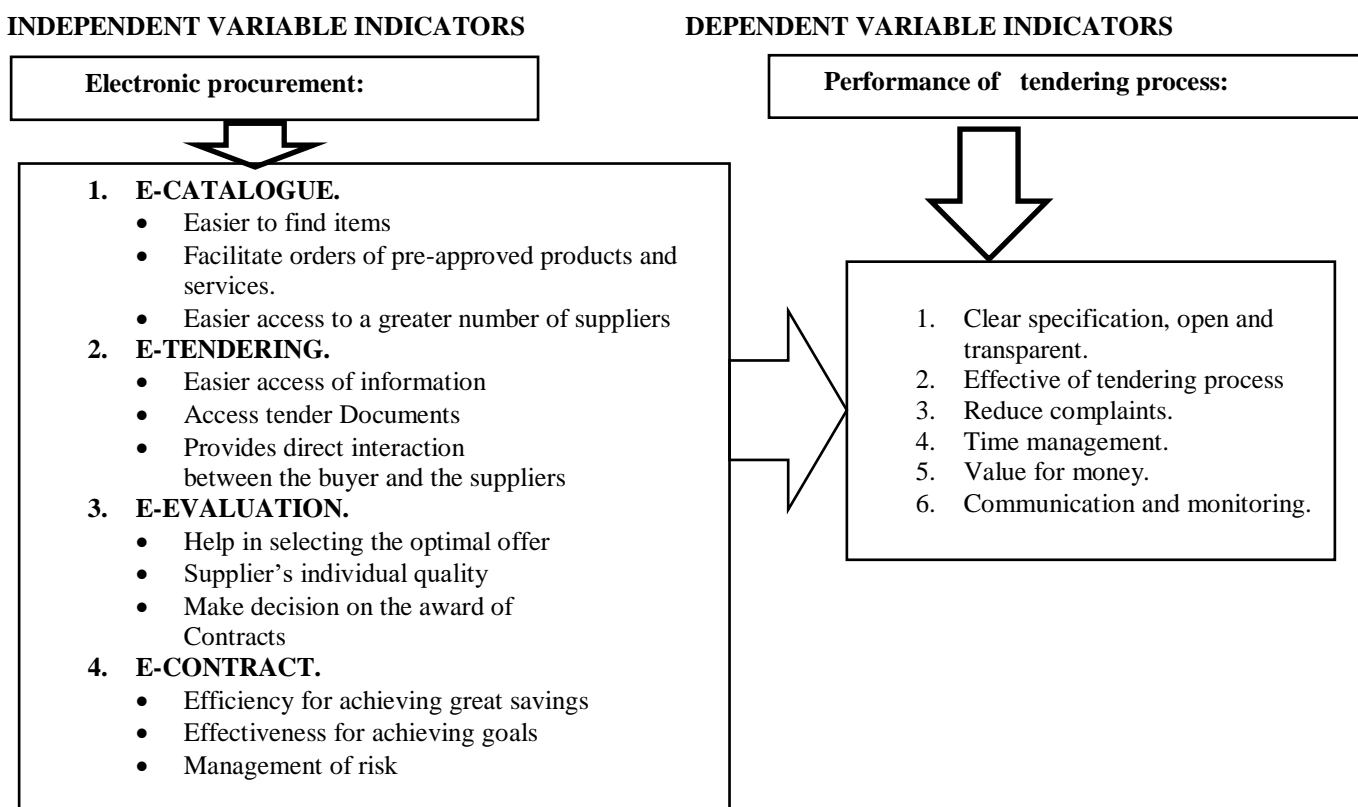
Selection of awarded tender is a multi-criteria decision making process in which performance tender is influenced by time, cost and quality. Shiratuddin (2022) project is carried out to develop a system prototype of an electronic tendering (e-Tender) system. Several steps have been taken starting with information gathering and analyzing, developing a prototype, and ending in system testing. The prototype was further tested with real users to analyze this document flow speed. In conclusion, e-Tendering system has a better approach compared to the manual process of tender. The document flow speed was increased by 58.5% which suggests a more efficient process (Shiratuddin, 2022).

2.4 How e-contract is influencing on Performance of tendering process in Kiziguro district hospital.

Chan (2022) illuminate that developing advances such as electronic obtainment has quickly gotten to be common hone in later a long time. With the appearance of web innovations and open advancements, the conventional acquirement framework is changed into an electronic acquirement framework. Innovation appropriation is impacted by numerous variables, counting the adopter, innovation, and environment in which they work. Considering this, E-procurement is still being received gradually. This inquire about points to examine the expansion of the appropriation of E-procurement and distinguish the connections between the E-procurement advances and green acquirement hones over diverse segments of ISO 14001-certified Malaysian ventures. This investigate is upheld by the Innovation Acknowledgment Show, one of the critical speculations of innovation appropriation. Utilizing SPSS and Keen PLS, the study information is analyzed quantitatively. The auxiliary demonstrate clarifies 86% of the fluctuation in green acquirement and appears the positive critical relationship between green acquirement and the E-procurement innovation of the ISO 14001 firms. Subsequently, embracing E-procurement innovation would advantage company maintainability. A benchmark for ISO companies will be set up, highlighting the significance of E-procurement innovation in moving forward green obtainment and supply chain proficiency. The consider suggests that request for naturally neighborly items and administrations be fueled by technology-based buys, coming about in a greener supply chain (Chan, 2022).

3. Conceptual framework of the study

E-procurement has displayed as a process of changing the way procurement functions were operating from traditional way to electronic way. Here the functions change to be accessed and offered using electronic system. These functions become e-ordering, web-based ERP, e-sourcing, e-tendering, e-reverse auctioning, and e-informing. The effective use of these services under electronic system facilitate and lead to tender is open and transparent, clear about seeking to identify who can deliver the work and at what cost, establishing potential partners' availability, establishing capacity and competence to fulfill the contract, easy to receive proposals and selection, easy evaluation of bids and easy contract negotiation and awarding.

Figure 1: Conceptual Framework of the Study

Source: Organized and assembled by the researcher, 2023

4. Methodology of the study

This section gives in details methods and techniques which used to achieve study objectives and testing validity of the study objectives and hypotheses. It shows study design, population and sample size, sampling techniques, data collection tools, methods for data processing and data analysis. Here below are details:

4.1 Study objectives

The general objective of this study is to assess the influence of electronic procurement on the Performance of tendering process. A case of Kiziguro district hospital, in Gatsibo district, Rwanda. Specifically, this study intends to achieve the following:

1. To assess how e-catalogue is influencing performance of tendering process in Kiziguro district hospital,
2. To evaluate how e-tendering is influencing performance of tendering process in Kiziguro district hospital,
3. To examine how e-evaluation is influencing performance of tendering process in Kiziguro district hospital
4. To assess how e-contract is influencing performance of tendering process in Kiziguro district hospital.

4.2 Research design

This study adopted a descriptive research design and correlation research design. According to Creswell (2012), a descriptive research design is appropriate since it is used to describe the elements of the study variables. This design was appropriate for this research because it is concerned with clearly defines problem with define objectives. Descriptive research intends to describe and report the way things look like relying on knowledge that case studies are suitable for assessing the process by which activities are described by using both qualitative and quantitative data because they complement one another. Correlation research design was used to measure the relation between the two variables which are influence of electronic procurement as independent variable and performance of tendering process of Kiziguro district hospital as dependent variable.

4.3 Instrument of data collection

Quantitative data was collected using questionnaire. The questionnaire comprised of closed ended questions. These types of questions were adopted since they are easy and clearly displayed allowing the respondents to answer questions in an easiest manner. The questionnaire was administered to the population. On completion of filling questionnaires, they were collected back to for data

analysis. Questionnaires were designed according to Likert Scale: “Strongly disagree (1), Disagree (2), Not Sure (3) Agree (4) and strongly agree (5)”.

Table 1: Mean Range of Likert Scale

Scale	Response Rating	Mean Range	Interpretation
5	Strongly agree	3.50-5.00	Strong
4	Agree		
3	Not Sure	2.50-3.49	Moderate
2	Disagree		
1	Strongly disagree	1.00-2.49	Weak

Source: (Akhtar, 2016)

4.4 Population of the study

The study population is known as a well-defined collection of individuals or objects known to have similar characteristics. Population is the number of persons or objects covered by the study or with which the study is concerned. In other words, it is a set of people or items under consideration in a study (Eugenie, 2022). 119 populations which include 21 staff who have direct works related to e-procurement functions from Kiziguro District hospital, 66 from reporting health centers under management of Kiziguro District Hospital and 32 staff of suppliers or contractors of Kiziguro District.

4.5 Sample size

Sample size is the proportion from the total population of the study within specific research (Schaupp, 2020). The target population of 119 staff under management of Kiziguro hospital and reporting health centers as well as representative of contractors is not a large number which need sample reduction. Due to that, the study has adopted census technique and assess all target population.

Table 2: Distribution of population and sample size

Category	Total Population
Management staff, staff in procurement and contract management units at Kiziguro district hospital	21
Management staff, staff in procurement and contract management units at all health centers managed by Kiziguro district hospital	66
Staff of Suppliers or contractors of Kiziguro District Hospital	32
Total Population	119

Source: Kiziguro District Hospital, Gatsibo district (2023)

4.6 Data Analysis

Komaran (2016), defined the method as a set of the structured procedures, rules and intellectual operations used by a researcher to make an analysis and interpret the gathered data to successfully complete the research. Thus, the research uses different methods to interpret the collected information properly. The following methods was used by the researcher. Both Descriptive statistics, inferential statistics (Bivariate Correlation analysis) and linear regression model was used to analyze the information collected. Here the researcher tends to interpret frequency, percentages, mean, and standard deviation, as results of SPSS (Statistical Package for Social Scientists version 20).

Bivariate Correlation analysis was used for testing the validity of research questions and the results after test was used to verify whether research hypotheses are valid or not, this ensures test of one dependent variable to one independent variable. It is one of the simplest forms of statistical analysis, which was used to find out if there is a relationship between two sets of values. It usually involves the variables X and Y. Bivariate analysis is the analysis of exactly two variables. This generate Pearson Correlation (r) which range between ± 1 , this may be positive or negative strong or weak based on the test results, and which range it fit from [-1; +1] and it takes also under consideration Sig.(2-Tailed) which test the statistical significance of tested variables. This should be less or equal to 0.05 for being statistically significant.

Linear regression model was evaluated to all indicators as stated in the conceptual framework. Means that, reflected to 7 (reflect to Y1 to Y7) indicators of dependent variable assessing how they are affected by all 6 (X1 to X4) indicators defining independent variable. Meaning that, all 1 summarized equation was analyzed under the following format:

$$Y_{1;2;3;4;5&6} = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Referred to the above equation model, the following are reflected:

Y: Performance of tendering process (Overall Dependent variable); Y1: Clear specification, open and transparent; Y2: Effective of tendering process; Y3: Reduce complaints; Y4: Time management; Y5: Value for money and Y6: Communication and monitoring.

While:

X: Electronic procurement (Overall Independent variable); X1: E-Catalogue; X2: E-Tendering; X3: E-Evaluation and X4: E-Contract. At : Standard Error and : Constant and to are coefficients.

5. Findings

As explained in methodology the inferential statistics was made via both bivariate correlation analysis and linear regression model. Pearson’s correlation is used to examine the relationship between the independent variables (IVs) and the dependent variable (DV). And Pearson’s correlation coefficients (r) range from -1 to +1 for the indication of positive or negative correlation.

Table 3: Bivariate correlation analysis

		Correlations	
		Electronic procurement	Performance of tendering process
Electronic procurement	Pearson Correlation	1	.620**
	Sig. (2-tailed)		.000
	N	119	119
Performance of tendering process	Pearson Correlation	.620**	1
	Sig. (2-tailed)	.000	
	N	119	119

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

Source: Primary data, August 2023

Table 3 show that, the Bivariate correlation analysis results indicate Pearson correlation or “r” which is equal to 0.620 and Sig. (2-tailed) equal to 0.000. This means that, there is a positive correlation between electronic procurement and Performance of tendering process and this correlation is moderate. The correlation is also statistically significant as p-value of 0.000 is less than 1% level of significance. In other words, Electronic procurement contribute 62% in Performance of tendering process.

Table 4: Bivariate correlation analysis: 4 indicators of independent variable and 6 indicators of dependent variable

Independent variable Indicators Vs Dependent Variable Indicators		Clear specification, open and transparent.	Effective of procurement process	Reduce complaints.	Time management.	Value for money	Communication and monitoring
E-catalogue	r	.117	.154	.367**	.392**	.073	.664**
	p	.007	.093	.000	.000	.028	.000
	N	119	119	119	119	119	119
E-tendering	r	.349**	.195*	.199*	.112	.111	.514**
	p	.000	.033	.030	.024	.031	.000
	N	119	119	119	119	119	119
E-evaluation	r	.323**	.555**	.447**	.114	.298*	.444**
	p	.000	.000	.000	.218	.001	.000
	N	119	119	119	119	119	119
E-contract	r	.214*	.086	.004	.028	.128	.349**
	p	.019	.003	.007	.006	.005	.000
	N	119	119	119	119	119	119

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

* . Correlation is significant at the 0.05 level (2-tailed).

p= Sig. (2-tailed) value

r= Pearson Correlation

Table 4 indicate that, there is a positive correlation between all 4 indicators independently correlated to each among 6 indicators tested from dependent variable, and this correlation for all is statistically significant at 1% level of significance or 5% level of significance. In other words, e-catalogue contribute 11.7% in clear specification, open and transparent, 15.4% in effective of tendering process, 36.7% in reduce complaints, 39.2% in time management, 7.3% in value for money, and 66.4% for communication and monitoring toward performance of tendering process. E-tendering contribute 34.9% in clear specification, open and transparent, 19.5% in effective of procurement process, 19.9% in reduce complaints, 11.2% in time management, 11.1% in value for money, and 51.4% for communication and monitoring toward performance of tendering process. E-evaluation contribute 32.3% in clear specification, open and transparent, 55.5% in effective of procurement process, 44.7% in reduce complaints, 11.4% in time management, 29.8% in value for money, and 44.4% for communication and monitoring toward performance of tendering process. E-contract contribute 21.4% in clear specification, open and transparent, 8.6% in effective of procurement process, 0.4% in reduce

complaints, 2.8% in time management, 12.8% in value for money, and 34.9% for communication and monitoring toward performance of tendering process.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.794 ^a	.631	.618	.0939049

a. Predictors: (Constant), E-contract, E-catalogue, E-evaluation, E-tendering

Source: Primary data, August 2023

As seen from table 5, the model had Adjusted R2 of 0.618, implies that ensuring Electronic procurement (E-Catalogue or X1, E-tendering or X2, E-evaluation or X3 and E-Contract or X4, explain 61.8% of overall Performance of tendering process or Y (a combination of Y1....6, respectively scope, clear specification, open and transparent, effective of tendering process, reduce complaints, time management, value for money and communication and monitoring. While the remaining 38.2% (determinant) of Performance of tendering process (Y) are resulted from other factors that have not been captured in the model or in this study.

Table 6: Analysis of Variance (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
1					
Regression	1.718	4	.429	48.705	.000 ^b
Residual	1.005	114	.009		
Total	2.723	118			

a. Dependent Variable: Performance of tendering process

b. Predictors: (Constant), E-contract, E-catalogue, E-evaluation, E-tendering

Source: Primary data, August 2023

As seen from table 6, the results show that the model had an F ratio of 48.705 and the P value was 0.000<0.05, signifying that the F ratio was statistically significant, therefore the overall regression model for all the variables tested were statistically significant and can be used for prediction at 1% significant level. This further indicate that the predictors variables (E-Catalogue or X1, E-tendering or X2, E-evaluation or X3 and E-Contract or X4) used in this study are statistically significant to performance of tendering process (Y). Therefore, it is confirmed that there is a significant and positive influence of Electronic procurement (e-Catalogue, e-tendering, e-evaluation and e-Contract) on increasing performance of tendering process.

Table 7: Summary of coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.961	.379		-2.539	.012
E-catalogue	.193	.057	.212	3.354	.001
1 E-tendering	.178	.080	.144	2.237	.027
E-evaluation	.524	.059	.560	8.947	.000
E-contract	.335	.058	.336	5.742	.000

a. Dependent Variable: Performance of tendering process

Source: Primary data, August 2023

As seen from table 7, the beta (β) sign shows the positive influence of the independent variable's coefficients over the dependent variable. Table above shows that, beta values for all independent variable indicators are positive Meaning positive influence on the predicted dependent variable. $\beta_1=0.193$, $t=3.354$, $p=0.001<0.05$; $\beta_2=0.178$, $t=2.237$, $p=0.027<0.05$, $\beta_3=0.524$, $t=8.947$, $p=0.000<0.05$ and $\beta_4=0.335$, $t=5.742$, $p=0.000<0.05$. That Means, any increase in the independent variables lead to increase in the dependent variable and vice versa. The regression model become as follows:

Y or Performance of tendering process = $-0.961 + 0.193X_1 + 0.178X_2 + 0.524 + 0.335$. Thus, the study concluded that ensuring best practices in E-Catalogue or X1, E-tendering or X2, E-evaluation or X3 and E-Contract or X4 have positive influence on Performance of tendering process. In other words, if these determinants are not available, Performance of tendering process will be equivalent to -0.961 units.

6. General views of respondents and discussion of findings

As explained in open discussion for each respondent (either staff of Kiziguro district hospital, staff from health centers reporting to Kiziguro District Hospital and Kiziguro district suppliers), electronic procurement was adopted as an outcome of national strategy of electronic adoption in services delivery. Thus, after the adoption of electronic procurement by Kiziguro district hospital as for other public institutions in Rwanda the process of requisitioning, ordering and purchasing goods and services were made online. Kiziguro

district hospital respect all elements of electronic procurement such as e-informing, e-tendering, e-auctioning, vendor management, catalogue management, e-purchasing, e-ordering and e-invoicing (Shiratuddin, 2022), however under this study only four functions were taken for consideration such as e-catalogue, e-tendering, e-evaluation, and e-contract.

Government e-Procurement automates the publication of government tenders on websites with search and alert facilities for suppliers. This has been estimated to reduce government costs in the range of 5% to 30%. E-Procurement also increases the reach of government procurement opportunities resulting in additional bids (Laurent, 2022). Electronic procurement adoption has made Kiziguro district hospital has contributed toward clear specification, open and transparent, effective of procurement process, reduce complaints, time management, value for money, and communication and monitoring.

As explained by respondents electronic procurement has made tendering process more easy, clear, valued money, time managed, efficient contributing in the economy of the organization, easy communication and monitoring, access to competent bidders, and made easy process. Thus, the tools and training provided to staff in charge of procurement process and tendering process management after adoption of electronic procurement has made good contribution. Today, in Kiziguro district hospital and reporting health centers services are well provided due to the timely performance in supply provided from suppliers and from great procurement process simplified by electronic procurement functions. Thus, generally electronic procurement is best used in Kiziguro district hospital and reporting health centers and suppliers and this has positively influenced the performance of tendering process.

7. Summary of major findings, conclusion and recommendations

This section starts with this introduction, summary of major findings in line with study objectives, conclusion, and recommendations. All are about the Influence of electronic procurement on the Performance of tendering process. A case of Kiziguro District Hospital, in Gatsibo District, Rwanda.

7.1 Summary of major findings

The work entitled “Influence of electronic procurement on the Performance of tendering process. A case of Kiziguro District Hospital, in Gatsibo District, Rwanda” was conducted for assessing the validity of four specific objectives such as: to assess how e-catalogue is influencing performance of tendering process in Kiziguro district hospital, to evaluate how e-tendering is influencing performance of tendering process in Kiziguro district hospital, to examine how e-evaluation is influencing performance of tendering process in Kiziguro district hospital and to assess how e-contract is influencing performance of tendering process in Kiziguro district hospital..

This study is census, descriptive, qualitative, and quantitative design. The study was used primary data. 119 respondents as entire population was assessed; the study has adopted census technique where all members of a population were analyzed. Data was collected using questionnaire. Analysis of data was performed using SPSS (Statistical Package for Social Scientists) and results obtained were presented in form of descriptive statistics and inferential statistics. The results were presented as follows:

E-catalogue as function of electronic procurement has contributed 46.7% toward the performance of tendering process for Kiziguro District Hospital, its reporting health centers and suppliers. E-tendering as function of electronic procurement has contributed 46.2% toward the performance of tendering process for Kiziguro District Hospital, its reporting health centers and suppliers. E-evaluation as function of electronic procurement has contributed 63.9% toward the performance of tendering process for Kiziguro District Hospital, its reporting health centers and suppliers. And e-contract as function of electronic procurement has contributed 31.8% toward the performance of tendering process for Kiziguro District Hospital, its reporting health centers and suppliers. The correlation for all indicators remain statistically significant as p-value remain 0.000 for all tested indicators.

7.2 Conclusion

The study was conducted to assess whether electronic procurement has positive and significant influence on performance of tendering process, learning from the case of Kiziguro district hospital. The study findings have made the researcher to fail to reject such hypothesis. The Bivariate correlation analysis results indicate Pearson correlation or “r” which is equal to 0.620 and Sig. (2-tailed) equal to 0.000. This means that, there is a positive correlation between electronic procurement and Performance of tendering process and this correlation is moderate The correlation is also statistically significant as p-value of 0.000 is less than 1% level of significance.

In other words, Electronic procurement contribute 62% in Performance of tendering process. This further indicate that the predictors variables (E-Catalogue or X1, E-tendering or X2, E-evaluation or X3 and E-Contract or X4) used in this study are statistically significant to performance of tendering process (Y). Therefore, it is confirmed that there is a significant and positive influence of Electronic procurement (e-Catalogue, e-tendering, e-evaluation and e-Contract) on increasing performance of tendering process.

7.3 Recommendations

Due to the study findings, the researcher suggests recommendations to the Kiziguro District Hospital staff and management and same recommendations were given to staff of reporting health centers and suppliers, in other case recommendations also were oriented to future researchers:

7.3.1 To the Kiziguro District hospital management, staff, reporting health centers’ staff and suppliers

Health sector is important to the public as hospital is not working for business but for saving people’s lives. Due to that, there is a need to increase efficiency in procurement process and to make highly performance tendering process from highly qualified bidders. This is associated to needs of health services and goods because are the main items tendered by Kiziguro district hospital. Firstly, The

Rwanda Public Procurement Authority (RPPA) should make sure that in all public institutions there are adequate electronic facilities, maintaining infrastructures, enough electricity and network, as e-procurement requires well- from buying and selling organizations which will build trust among participants in the implementation of the system. Secondly, Kiziguro District hospital management staff, reporting health centers' staff and suppliers must ensure that employees are provided with enough training with Continuing Professional Development (CPD) concerning e-procurement to build awareness among them as it has been found the system is influenced by the availability of technical knowledge and skills. If not provided on time may affect living conditions of people. Due to that, there is a need to create systematic and regular training on the electronic procurement functions and to ensure that, there is no tender offered out of the system in the near future.

7.3.2 To other researchers

Lastly, this study was limited on the influence of electronic procurement on the Performance of tendering process. A case of Kiziguro District Hospital, in Gatsibo District, Rwanda. The current study is limited in scope as it focuses on a single district hospital, while the country has around 30 district hospitals and more than 3 provincial and national referral hospitals and more clinics. Other researchers are encouraged to go beyond this scope and evaluate a combination of more hospitals, so that, they will come up with comparison from which hospital made best practices in electronic procurement use and best practices or performance of tendering process.

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