

The Impact of E-Information on Procurement Performance in Geothermal Development Company in Kenya.

Authors.

Richard Wachira Gichuhi.

School of Entrepreneurship, Procurement and Management.
Jomo Kenyatta University of Agriculture and Technology, Kenya.

Main author email: wachirar8@gmail.com

Abstract

This study sought to evaluate the impact of e-information on procurement performance in Geothermal Development Company in Kenya. The theory adopted in this study was Actor Network Theory. A descriptive research design was adopted in this study. Target population included the total number of employees working in procurement and logistics departments in GDC Nakuru region. There are a total of 170 procurement as well as logistics employees in GDC. Multi-stage sampling method was used where 97 respondents were selected as the study respondents. Questionnaires were used to collect primary data. The instrument was tested for validity and reliability where Cronbach's alpha was used to test the reliability of the instrument. The alpha values for all the variables were above 0.8 well above the recommended threshold of 0.7. Thus the instruments were deemed reliable for data collection in the study. Data collected was analysed using Statistical Package for Social Sciences (SPSS). Findings were presented in form of descriptive statistics and inferential statistics and presented in tables accompanied with relevant discussion. The study concluded that e-information was shown to have a positive relationship with procurement performance. The study recommends that GDC should make use of online communication channels. The study showed that e-informing is significantly related with procurement performance. Thus, ensuring utilization of online channels of communication will go a long way in improving procurement performance in the company.

Key terms: E-Information, Information and Communication Technology, e-Procurement, e-Business strategies, Procurement Performance.

How to cite this article in APA.

Gichuhi, R. W. (2021). The Impact of E-Information on Procurement Performance in Geothermal Development Company in Kenya. *Editon Cons. J. Bus. Manag. Stud.*, 3(1), 125-132. <https://doi.org/10.51317/ecjbms.v3i1.273>

Introduction

Electronic procurement is very important when it comes to improving procurement performance and by extension organizational performance. Procurement is strategic in nature since it links the organization's suppliers to the strategic objectives of the organization. Procurement translates the strategic objectives of an organization into the sourcing needs that can enable the organization achieve the same. E-procurement has been promoted as one way of improving procurement efficiency and effectiveness (Musau, 2015). Through e-procurement, an organization is able to directly or indirectly buy the raw materials at a relatively lower price. It also enhances and strengthens transparency and the level of competitive positioning of the firm (Kenneth & Bricu, 2012).

Information and Communication Technology is a critical enabler of the redefinition of the organization. It permits the distribution of power, function, and control to wherever they are most effective; given the mission and objectives of the organization and the culture it enjoys (Morton, 2010). The application of notion of the internal customer service level to e-procurement is relatively new. The impact of e-procurement on an organization process and routines has concentrated primarily on the internal alignment characteristics of systems and practices within IT strategy. E-procurement and the use of computers in procurement is gaining grounds and becoming more popular in today's businesses.

The benefits of e-Procurement have been verified by many leading companies worldwide, and e-Procurement is a significant tactic in most companies' e-Business strategies. The consensus is that e-Procurement benefits organizations with respect to procurement cost and process efficiency associated with procurement activities. This is because web-based e-Procurement solutions can support four major B2B tasks in organizations: search,

processing, monitoring and control, and coordination (Subramaniam & Shaw, 2012). The use of E-Procurement by the organizations has resulted into increase in profitability, ease of control and improved efficiency and effectiveness in the corporate procurement process.

In many countries e-procurement is now a widely preferred option and it is believed that besides improving efficiencies it has also given businesses a better chance to reach the unexplored markets. According to Shale (2014), with the continuous advancement in technology and the transformation of business dynamics the world has seen an easy accessibility to reliable electronic support services available worldwide with an equal demand in almost all sectors. The advent of the internet as a business systems platform has been a catalyst for major changes in the operation and status of organizational procurement. Information technologies have changed the way organisations and governments operate (Mose et al., 2013).

Geothermal energy was identified as one of the pillars and enablers of vision 2030 (Moinkett, 2015). Therefore, it is paramount that the organizations enhance efficiency in their performance for them to achieve their goals. However, the organization has been lagging behind in adopting e-solutions in their operations. It is until January 2019 that the organization advertised for a tender for supply and installation of an e-board management system (BMS) with a web interface (GDC Records 2019). As evidenced in their tender advertisements, most of their tender application and communications are done manually through hardcopies thus no ICT application and feedback processes. Through these manual processes, the public procurement oversight authority (PPOA) observed that procurement units preoccupy about 90 per cent of their time in processing procurement operations (Waswa & Juma, 2015).

This has compromised the achievement of the organisation's objectives especially with regard to the reduction of total procurement cost and lead-times in procurement processes. E-procurement has been espoused to ease procurement processes by strengthening search ability, ensuring there is faster and also transmission of accurate data, offer quick and more information and reduce transactional costs (Nyairo, 2016). Further Waswa and Wagoki (2015) studied the influence of framework contracting on procurement performance of geothermal development company in Kenya. Additionally, Munyao and Moronge (2018) examined the influence of e-procurement on the performance of procurement in public universities in Kenya. Whereas e-procurement adoption has been shown to have an impact on procurement performance, state corporations have still been recording poor performance in procurement performance. Nonetheless, studies have not addressed how e-procurement implementation influences procurement performance especially in Geothermal Development Company. Hence, this study evaluated the influence of e-information on procurement performance in Geothermal Development Company in Kenya.

LITERATURE REVIEW

Actor Network Theory

The Actor Network Theory abbreviated as ANT was developed in the early 1980's by scholars Michel Callon, Bruno Latours and John Law while working on a publication for the science and technology subject (Tatnall & Gilding, 1999). The Actor-network theory explains that the world is full of hybrid entities containing both human and non-human elements, and was developed to assess situational contexts where identifications of these elements is complex (Tatnall & Gilding, 2009). ANT deals with interactivity between two elements in a network and how various components in the two elements can be identified. In the desire to evaluate all interactive elements in a system both human and nonhuman, the ANT theory is

based on the approach to such systems is sustained in a level playing field. The theory highlights that, when consideration for selection is done there has to be a level playing field and the choice settled on must be the best in the list (Tatnall & Gilding, 2009). Sourcing in procurement involves identification of product or service suppliers.

The organisation contracting should create a level playing field for all the suppliers and only identify the best which fits the set requirements. In an integrated electronic system, electronic sourcing (e-sourcing) would inform digital processing of different suppliers based on electronic documentation they present hence identify which can match the set requirements. The ANT theory recognizes the interaction of numerous elements in a level playing field (Cusumano & Selby, 1997). The electronic sourcing platform makes it possible for the interaction with numerous elements, which in procurement can be numerous possible suppliers, and also makes it possible to identify the best who can match the requirements. In manual systems this is impossible to implement as avenues for abuse are many where the concept of ANT equality can never be realized (Cusumano & Selby, 1997). Technology has enabled procurements systems, operations such as sourcing for potential suppliers is undertaken in a fair and transparent manner. The principles of agnosticism, general symmetry and free association would ensure that all the bidders are evaluated equally and their strengths measured in a level ground. This will eliminate any likelihood or loopholes for the selection to be inclined towards favoritism (Tatnall & Gilding, 2009). Bias proof e-sourcing platform adhering to the ANT theory entailed the definition of standard requirements that shall form as the basic minimum for consideration of the potential selected choices and all the options shall have a fair and equal chance of selection.

E-Informing

Real-time information about demand changes is required in order for the production process to maintain the desired replenishment schedules and levels. This integration is often achieved through use of an information system that is fully integrated (an enterprise system). Through application of such a system, the organisation can receive the access to timely information that can be used to develop and modify production plans and schedules (Villena, Revilla & Choi, 2014). Mollah and Licker (2011) conclude that 'organizational characteristics and organisational influences' are significant motivators to the use of procurement and informing influence performance.

Focusing on determining the relationship between e-procurement systems and performance of procurement function in commercial banks in Kenya, Ochieng Ombat (2015) carried out a study focused on e-sourcing, e-informing and e-tendering, which were significant in determining the relationship between e-procurement systems and performance of e-procurement function. The findings were that Majority of the respondents felt that E-sourcing influences the performance of the bank and a significant majority of the respondents felt that E-informing influences the performance of the bank.

A study investigating e-ordering and e-informing on performance of supply chain of State Corporations in County Government of Nairobi was carried out by (Nancy, 2017). Explanatory research design was used in the undertaking of this research. Using 262 officers of procurement from 112 State Corporation of Kenya, findings of the model of multiple regression indicated that e-informing has a significant and positive impact on performance of supply chain. The study makes a conclusion that e-informing that is the element of the dimensions of e-procurement raises the performance of supply chain. Thus, it is necessary for firms to utilize e-informing in the process of e-procurement.

A research study adopting a descriptive research design approach by Kioko and Mwangangi (2017) was preferred because it allows an in-depth study of the subject. For this study census was used, all the 187 heads of procurement in all parastatals were issued with questionnaires. Data was collected using self-administered questionnaires. The data collected was analysed by use of descriptive and inferential statistics. Multiple regression model was used to show the relationship between the dependent variable and the independent variables. The findings of the study indicated that e-informing, e-payments and e-tendering have a positive relationship with performance in parastatals. The study recommended that public institutions should embrace e-procurement practices so as to improve their performance.

A study by Kamaru and Were (2018) sought to establish effect of e-procurement adoption on the performance of the public sector; a case of state corporations under the State Department for Infrastructure. The study used a descriptive research design and explanatory research design. The population of interest was 142 employees in the procurement departments at State Department for Infrastructure. The study findings concluded that E-Informing had a positive effect on the performance of state corporations under the State Department for Infrastructure. The Study recommended that the management of State corporations should fully adopt E-procurement system as it was found to enhance accountability through elimination of corruption, errors and hence ensuring efficiency of procurement systems. State corporations should fully adopt E-informing systems as the system was found to enhance innovation process thus enhancing the procurement processes in the organization.

RESULTS AND FINDINGS

E-Information Descriptive Statistics

The study further sought respondents' views regarding the e-information process in the company. The frequencies in terms of percentages, means and standard deviation were

established to help the researcher derive meaning of their views. The findings from the analysis were as presented in Table 1.

Table 1: Descriptive Statistics on E-information

	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	Std. Dev
There is e-information system in our organization	1.3	9.3	4.0	76.0	9.3	2.17	.778
In our firm there is flow of information between bidders and the procurement department	2.7	8.0	5.3	73.3	10.7	2.19	.833
E-information facilitates effective communication with our suppliers	1.3	8.0	5.3	72.0	13.3	2.11	.781
We advertise our tenders through online advertisement	1.3	5.3	9.3	65.3	18.7	2.04	.845
We electronically distribute information about pricing about pricing and any other information online	1.3	10.7	4.0	61.3	22.7	2.08	.912
Valid N (listwise)	75						

From the table, 85.3 per cent of the respondents disagreed that there is e-information in their organization.

This had a mean of 2.17 and a standard deviation of 0.778. This finding poses the challenge as depicted by Villena, Revilla and Choi (2014) who had noted that through e-informing system, an organization can receive access to timely information that can be used to develop and modify production schedules and plans. This is depicted in that the majority of the respondents disagreed that in their firm there is flow of information between bidders and the procurement department. 73.3 per cent of the respondents disagreed while 10.7 per cent of them strongly disagreed having a mean of 2.19 and a standard deviation of 0.833.

The researcher observed that 72.0 per cent and 13.3 per cent of the respondents disagreed and strongly disagreed respectively that e-information facilitates effective communication with their suppliers. This assertion recorded a mean of 2.11 and a standard deviation of 0.781. With a mean of 2.04 and a standard deviation of 0.845, 84.0 per cent of the respondents strongly and/or disagreed that they advertise their tenders through online advertisement. Lastly, respondents disagreed that they

electronically distribute information about pricing about pricing and any other information online. 61.3 per cent of the respondent disagreed while 22.7 per cent of them strongly disagreed registering a mean of 2.08 and a standard deviation of 0.912. The findings demonstrated that respondents had similar views regarding e-information with all responses returning standard deviation values less than one.

The Relationship between E-information and Procurement Performance

The relationship between the E-information process and procurement performance in Geothermal Development Company was established. The findings from the analysis were as shown in Table 2

Table 2: Correlations between E-Information on Procurement Performance

		E-Information
Procurement Performance	Pearson Correlation	.549**
	Sig. (2-tailed)	.000
	N	75

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

An average positive significant ($r=.549$, $p=.000$) relationship between e-information process and procurement process was established. This indicated that e-information process had a crucial role in determining procurement performance. Hence enhancement of e-information enhances procurement performance in the company. The findings were in agreement with Ombat (2015) who in his study established that e-informing had significant relationship with procurement performance. Further Kioko and Mwangangi (2017) established that there is a positive significant relationship between e-informing

and procurement performance in parastatals. Therefore, the study observed that e-informing have a significant role in determining procurement performance in Geothermal Development Company in Nakuru County Kenya.

Procurement Performance Descriptive Statistics

The study finally sought to establish respondents' views regarding procurement performance in Nakuru, Kenya. The percentages, means and standard deviations were established in this regard. The findings from the analysis were as presented in Table 3

Table 3: Descriptive Statistics on Procurement Performance

	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	Std. Dev
There is reduced paper work during procurement process as a result of e-procurement	10.7	4.0	2.7	78.7	4.0	2.39	1.025
The tendering cycle period in our company has been shortened as a result of e-procurement	4.0	4.0	10.7	64.0	17.3	2.13	.890
Our company has experienced reduced transaction costs as a result of e-procurement	2.7	5.3	12.0	72.0	8.0	2.21	.793
Transparency in the procurement process in our company has been enhanced as a result of e-procurement	5.3	4.0	16.0	61.3	13.3	2.24	.970
In our company, e-procurement has promoted quality supply of services and goods	2.7	9.3	10.7	58.7	18.7	2.20	.930
Valid N (listwise)	75						

Majority of the respondents comprising of 82.7 per cent of the respondents strongly and/or disagreed that there is reduced paper work during procurement process as a result of e-procurement. This aspect had a mean of 2.39 and a standard deviation of 1.025. Further respondents disagreed that the tendering cycle period in their company has been shortened as a result of e-procurement. 64.0 per cent of the respondents disagreed while 17.3 per cent of them strongly disagreed registering a mean of 2.13 and a standard deviation of 0.890. Results showed that 80.0 per cent of the respondents strongly and/or disagreed that their company has experienced reduced transaction costs

as a result of e-procurement. This assertion had a mean of 2.21 and a standard deviation of 0.793. They also disagreed that transparency in the procurement process in our company has been enhanced as a result of e-procurement. 61.3 per cent and 13.3 per cent of the respondents strongly and/or disagreed registering a mean of 2.24 and a standard deviation of 0.970.

Finally, 58.7 per cent of the respondents disagreed while 18.7 per cent of them strongly disagreed that in their company, e-procurement has promoted quality supply of services and goods. This aspect had a mean of 2.20 and a

standard deviation of 0.930. The findings in this study confirm Akibate (2015) findings that established that e-procurement strategies enhances procurement performance by reducing transaction costs and cycle times; allowing possibility of developing vendor managed inventory and improvements in just in time deliveries, facilitating more accurate deliveries due to reduced input order errors by suppliers among other achievements in e-procurement.

Descriptive results established that respondents disagreed that there is e-information in their organization. Majority of the respondents disagreed that in their firm there is flow of information between bidders and the procurement department. The researcher observed that respondents disagreed and strongly disagreed respectively that e-information facilitates effective communication with their suppliers. Respondents disagreed that they advertise their tenders through online advertisement. Lastly, respondents disagreed that they electronically distribute information about pricing about pricing and any other information online.

From correlations, results established that e-information process had a positive significant relationship with procurement performance. Therefore, e-information was

found to play an important role in determining procurement performance in GDC. Regression analysis indicated that e-information system does not significantly contribute to variation in procurement performance. Hence, in enhancing the variation in procurement performance, e-information system is a not pre-requisite contributor.

CONCLUSION AND RECOMMENDATION

Conclusion: Further, e-information was shown to have a positive relationship with procurement performance. Findings demonstrated that e-information system enables efficient flow of information ensuring prompt settlement of procurement issues. However the regression analysis demonstrated that e-information process does not affect procurement performance. As such the study observed that e-information is not important in determining procurement performance in GDC. Therefore the study concluded that e-information system does not significantly influence procurement performance.

Recommendation: The study recommends that GDC should make use of online communication channels. The study showed that e-informing is significantly related with procurement performance. Thus, ensuring utilization of online channels of communication will go a long way in improving procurement performance in the company.

REFERENCES

- Akibate P. (2015). The Acceptance of E-Procurement in Ghana: A Study of Key Stakeholders in the Construction Industry in Greater Accra
- Cusumano, M., & Selby, W. (1997). How Microsoft Builds Software. *Communications of the ACM* 40(6), 53-61.
- Kamaru, A., & Were, S. (2018). Effect of e-procurement adoption on the performance of state corporations under the state Department for infrastructure in Nairobi Kenya. *The Strategic Journal of Business & Change Management*. 5(2), 2228 – 2241.
- Kenneth, L., & Bricu, F (2012). *Purchasing and Supply Chain Management* (8th Ed). Routledge Publishers.
- Kioko, J., & Mwangangi, N. (2017). Influence of e-procurement on performance of parastatals in Kenya. *International Journal of Supply Chain and Logistics*. 1(3), 19 – 45.

- Krume N. (2014). The Role of Information Technology in the Business Sector. *International Journal of Science and Research (IJSR)*, 3(12)303-309.
- Mose J.et al. (2013). The critical success factors and challenges in e-procurement adoption among large scale manufacturing firms in Nairobi, Kenya. *European Scientific Journal*. 9(13) 375-401.
- Munyao, J., & Moronge, M. (2018). Influence of e-procurement practices on the performance of procurement in public universities in Kenya. *Strategic Journal of Business & Change Management*, 5(2), 1623-1628.
- Musau, G., (2015). Inventory Optimization: A Factor Affecting E-Procurement Performance of State Parastatals in Kenya. *IOSR Journal of Business and Management*, 17(4), 41-50.
- Nancy, C. (2017). E-Ordering and E-Informing on Supply Chain Performance in Kenyan State Corporations in Nairobi County. *International Journal of Economics, Commerce and Management*, 5(4), 510 – 520.
- Nyairo C. (2016). The Effect of Social Media Use on Building Brand Equity among Three Star Hotels in Nairobi County, Kenya. University of Nairobi
- Ombat, O. (2015). The relationship between e-procurement systems And performance of procurement function in commercial banks in Kenya. *International Journal of Economics, Commerce and Management, United Kingdom*. 3(12), 697-723.
- Shale, N. (2014). Role of e-procurement strategy on the performance of state corporations in Kenya.
- Subramaniam, C., & Shaw, M. (2012). A study of the Value of B2B E-Commerce: The Case of Web-based Procurement. *International Journal of Electronic Commerce*, 6(6), 19-40.
- Tatnall, A., & Gilding, A. (1999). *Actor-Network Theory and Information Systems Research*. 10th Australasian Conference on Information Systems (ACIS), Wellington, Victoria University of Wellington.
- Villena, V. H., Revilla, E., & Choi, T. Y. (2014). The dark side of buyer supplier relationships. *Journal of Operations Management* 29 .561–57.
- Waswa, V., & Wagoki, J. (2015). Influence of Framework Contracting on Procurement Performance of Geothermal Development Company, Kenya. *International Journal of Science and Research (IJSR)* 4(10) 2097 – 2111.