

Evaluation of E-Procurement Practice as a Tool for Effective Organization Management, a Case Study of Nansana Municipality Headquarters

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Abstract: *E-Procurement is more than just an online payment method. It has been promoted as a critical performance indicator that can boost a firm's productivity and expertise. E-procurement is implemented by certain businesses successfully while failing in others. The four goals of this study were to ascertain the impact of transmission of data on company performance, the impact of supplier and buyer cooperation on managerial performance, the impact of system administration on managerial performance, and the impact of billing administration on the organizational performance of Nansana Municipality. The study used an analytical approach to determine how electronic procurement affected the efficiency of the organization. A one percentage point increase in electronic supplier/buyer cooperation would typically result in a 0.224 rise in organizational management, if all other variables remained constant. Given that the P-value (0.015) is less than 0.05 and that this is of statistical significance with a confidence interval of ninety-five percent, we reject the null assumption and come to the conclusion that there is a substantial correlation between organizational leadership and electronic buyer/supplier cooperation. The study also suggests that in order to determine whether the association between e-procurement elements and corporate achievement can be broadly applied, further research must be conducted in various markets and nations. The study's conclusions will help managers create electronic purchasing plans for their organizations that will guarantee a favorable effect on the strategic viability of the companies.*

Keywords: E-procurement practice and organization management

Background of the study

In the year 2000, IBM implemented its Regeneration Administration System and Method (Brousseau, 2000), which was developed by Mexican engineer Daniel Delfn, who at the time served as the director of purchasing at IBM's largest manufacturing facility, and IT programmer Alberto Wario (Aberdeen Group, 2011). The technology was created to simplify IBM's difficult purchasing procedure for the factory in Guadalajara, Mexico, which at the time was the world's largest manufacturing facility for personal computers, with an annual production value of 1.6 billion dollars. The plant's productivity increased to 3.6 billion dollars three years after the equipment was put into place (Brewster and Mayrhofer, 2012). The business then employed the method at its intermediate manufacturing plants before selling licenses to other organizations throughout the world.

In terms of manufacturing planning, demand control, and managing inventory, the idea holds that electronic procurement allows both consumers and vendors to develop communication channels over the internet (Lee, 2003). The frictionless purchasing paradigm is facilitated by electronic procurement (Brousseau, 2000). The study by Min and Galle (2002) acknowledges the broad scope of electronic procurement and defines it as a business-to-business, or B2B, picking up practice that makes use of online purchasing to locate prospective vendors of products and services, communicate with suppliers, and make payments.

According to earlier research, electronic purchasing has emerged as the key enabler that enables businesses to incorporate their supply networks from beginning to end, from the vendor to end user, with shared efficiency, accessibility, and pricing data that enables consumers and vendors to work to the best and most advantageous timetables and prices (Morris et al., 2000).

In order to handle the purchase of goods and services, businesses typically implement electronic procurement systems (Min & Galle, 2002).

Statement of the Problem

(Mutindi, Namusonge, & Obwogi, 2013) claim that Uganda is currently going through a period of managerial instability, which has led to decreased earnings in the industrial sector of the economy. According to information from the World Bank, the unstable business atmosphere has caused Ugandan large-scale industries to experience diminishing earnings and stagnation over the last

five years (World Bank, 2014). According to estimates, multinational industrial enterprises have lost 70% of the market share they once held in East Africa (Republic of Uganda, 2014). Municipal governments and other businesses have relocated or reorganized their businesses in order to better serve the local market by importing goods from countries with inexpensive production costs, such as South Africa and Egypt (Nyabiage & Kapchanga, 2014), citing the costly operating expenses and unstable operational conditions.

Objectives of the study

The objectives of the study were;

1. To evaluate the influence of electronic data transmission on organizational management of Nansana Municipality.
2. To assess the influence of electronic buyer/supplier collaboration on organizational management of Nansana Municipality.
3. To examine the influence of electronic System Management on organizational management of Nansana Municipality.

Hypothesis

Ho: There is no relationship between the influences of electronic data transmission on organizational management of Nansana Municipality

Ha: There is a relationship between the influences of electronic data transmission on organizational management of Nansana Municipality

Ho: There is no relationship between the influences of electronic buyer/supplier collaboration on organizational management of Nansana Municipality

Ha: There is a relationship between the influences of electronic buyer/supplier collaboration on organizational management of Nansana Municipality

Ho: There is no relationship between the influences of electronic System Management on organizational management of Nansana Municipality

Ha: There is a relationship between the influences of electronic System Management on organizational management of Nansana Municipality

Research Questions

The research was guided by the following research questions:

1. What is the influence of electronic data transmission on organizational management of Nansana Municipality?
2. What is the influence of electronic buyer/supplier collaboration on organizational management of Nansana Municipality?
3. What is the influence of electronic System Management on organizational management of Nansana Municipality?

Methodology

Research Design

The methodology used for the study was descriptive correlated, cross-sectional in and case study survey. To determine whether there is a substantial association between advertising and consumer conduct, the descriptive correlational framework was used. Because participants were asked questions about events that had already occurred, an after-the-fact design was adopted. A cross-section of respondents was chosen to take part in the study all at once, hence the cross-sectional approach was used.

Quantitative Design

Quantitative design was used to process data which could be quantified and is numeric in nature. For example, the respondents' age, income, and number of times they had purchased a given product in a given period of time, etc. According to Creswell et al. (2013), quantitative research helps in getting an in-depth analysis of the problem under investigation.

Qualitative Design

This was used to describe qualitative data which could not be quantified in numbers. This included respondents' opinions and ideas. Qualitative research was also applied in order to describe current conditions or to investigate relationships, including effects and relationships. In addition, it helped in answering questions concerning the current state of the subject under study

Study Population

The study population constituted mainly the staff and customers of Nansana Municipality especially those working in the different departments. According to the Human Resource officer, this population amounts to 60 staff. This population was chosen because it was assumed to have adequate knowledge of the subject under investigation and the research variables under investigation.

Respondents	Population size	Sample size	Technique
Top Management	15	10	Simple random
Political leaders	15	10	Simple random sampling
Operational officers	30	20	Purposive sampling
Total	60	40	

Sample Size Determination

The sample size was 40 respondents who included top leaders, political leaders and operational officers of Nansana Municipality.

Sampling Technique

For the purpose of choosing the right sample for the study, the investigator used a number of strategies. Both probability and non-probability sampling methodologies were used in these. Purposive sampling, a non-probability sampling technique, was used in this study to choose participants from the general community. Using this method, the study was able to choose from each unit within the sample being studied and offer a chance to just those individuals who were qualified. In this instance, the investigator made sure that those who participated from various categories, such as the company's customers, marketing personnel, and sales staff, had the same opportunity of taking part.

Sampling procedure

This study employed purposive sampling, cluster sampling and simple random sampling procedures. Purpose sampling was used to identify respondents like the Nansana Municipality managers who were few and hard to access. Cluster sampling was also used to classify the respondents according to the relevant departments. Then simple random sampling was used to identify respondents in the different departments.

Data Collections Instruments

Survey Questionnaires

This study used self-administered questionnaires for the respondents. These were distributed among the staff in their respective departments. The justification for using this instrument is that questionnaires were easy to quantify and analyze. In addition, the questionnaires were used because the study focused on opinions, attitudes, feelings and perceptions of the respondents.

Interviews

An interview guide consisting of structured questions was designed and administered to the customers of Nansana Municipality. Information solicited by this instrument helped the researcher enhance responses from the self-administered questionnaires and this made it possible for the researcher to cross examine some key issues in the research.

Data Analysis, Interpretation and Presentation

SPSS was used to examine the data. Tables, graphs, pie charts, and triangulate were used to illustrate the information.

Analyzing qualitative data involved writing narratives based on observations and face-to-face interviews. In order to quickly analyze qualitative data, the researcher employed an impressionistic summary; to do this, she noted down those who provided frequent answers to questions about advertising and the relationships between the variables during the interview. This subjective data analysis method was selected since it is time-efficient and reasonably priced.

RESULTS

Background Characteristics

The study sought to establish the background information of respondents in terms of job designation, gender distribution, level of education and duration since adoption of e- procurement

Job Designation of Respondents

The study sought to establish the role and job designation of respondents. The results are as shown in Table 2.

Table 2: Job Designation of Respondents

Designation	Percentage (%)
Procurement Managers	68
ICT Managers	32
Total	100

An overwhelming 68% of the respondents were senior procurement management designate and 32% indicating ICT managers designate respectively as shown in the table 4.1. This was a very important profile distribution for this study since the respondents were the right people with adequate information relevant to this study hence best placed.

Gender Distribution

The researcher further sought to establish the respondents' gender distribution. The results are as indicated in the Table 2.

Table 2 Gender Distribution

Gender	Frequency	Percent
Female	27	32.0
Male	59	68.0
Total	86	100

A majority of 68% of the respondents were male while 32% were female as shown in Figure 4.2. This was a good distribution which depicts a fair balance of gender. Since majority of the responses for this study relies on the perceptual measures of the respondents, this gender distribution is expected to accommodate the opinions and views from both sides of the gender divide.

Level of Education of Respondents

The researcher also sought to establish the respondents' highest level of education. The results are as indicated in the Table 3.

Table 3 Level of Education of Respondents

Education Level	Percentage (%)
Diploma	2
Bachelor's Degree	71
Postgraduate	27
Total	100

Respondents' level of education was sought and majority (71%) of the respondents indicated that they have at least a degree level of education while sizeable (27%) possess a higher degree at postgraduate level and 2% had a Diploma as shown in table 4.3. This is highly expected since the respondents are at a senior management level where the skills, knowledge and competencies are supposed to be high. Nevertheless, the well-educated respondents mean that they were well informed and furnished this study with better information which added value.

Company's Duration since Adoption of E-procurement

The study sought to establish the number of years since E- procurement adoption. It was ensured that each manufacturing company that was sampled had adopted e-procurement. The results are shown in Table 4.

Table 4 Company's duration since E-Procurement adoption		
Number of Years	Frequency	Percent
1-5 Years	41	48
6-10 Years	38	44
11-15 Years	5	6
Above 16 Years	2	2
Total	86	100

The time since the introduction of e-procurement for each sampled company was also requested. A range of years was provided, and these were grouped to create several ranges for simple presentation. According to the participants, 48% of companies used electronic purchasing over the last 1 to 5 years, 44% within the past 6 to 10 years, 6% within the past 11 to 15 years, and another 2% within the past 16 years.

The enterprises employed anything between 50 and 2,000 people. A workforce of this size can offer a deep, sufficient, and heterogeneous pool knowledge among the workers, which is the critical component upon which this study concentrates.

Data Transmission and Organizational Performance

The study sought to find out extent to which data transmission systems have influenced organizational performance of manufacturing firms.

Table 5 Data Transmission

	N	Minimum	Maximum	Mean	Std. Deviation
Automation	86	2.00	4	3.1163	.51834
Security	86	2.00	4	3.3140	.55860
Real-Time Communication	86	3.00	5	3.7326	.67605
E- Notification	86	3.00	4	3.5349	.50171
Aggregate Score	86			3.42445	.563675

From the findings, respondents agreed that; automation (mean 3.12), security (mean 3.31), real time communication (mean 3.73) and e - notification (mean 3.53) have been integrated into the organizations and have an influence on the performance of procurement processes of their firms as shown by an aggregate mean of 3.42.

Buyer/ Supplier collaboration and Organizational Performance

The study sought to find out the influence of buyer/supplier collaboration on organizational procurement of different manufacturing firms. The responses to the statements ranged between 3 and 5.

Table 6 Buyer/Supplier Collaboration

	N	Minimum	Maximum	Mean	Std. Deviation
Inter-organizational systems	86	3.00	5.00	3.4302	.54321
Channel relationships	86	3.00	5.00	3.4767	.56832
Decision making	86	3.00	5.00	3.6395	.52943
Information sharing	86	3.00	5.00	3.6279	.53240
Aggregate Score	86			3.543575	.54334

The respondents agreed that buyer/supplier collaboration have been integrated into the procurement function with inter organizational systems (mean = 3.43), channel relationships (mean = 3.48), decision making (mean = 3.64) and information sharing (mean = 3.63) as shown in Table 6.

System Management and Organizational Performance

The study further investigated the influence of system management on organizational performance. Table 7 presents descriptive findings on system management component of e-procurement.

Table 7 System Management

	N	Minimum	Maximum	Mean	Std. Deviation
Transparency	86	1.00	5.00	3.8256	.76990
Coordination	86	3.00	5.00	3.7442	.55701
Demand Forecasting	86	3.00	5.00	3.7442	.53547
Monitoring	86	3.00	5.00	3.7093	.48182
Aggregate Score	86			3.755825	.58605

From table 7, the responses ranged between 1 and 5 on transparency while responses to coordination, Demand forecasting, and monitoring ranged between 3 and 5. From the study, the respondents agreed that transparency (mean = 3.83), coordination (mean = 3.74), demand forecasting (mean = 3.74), monitoring (mean = 3.71) are factors of system management that influence the organizational performance of organizations and institutions in Uganda.

Billing Management and Organizational Performance

The study sought to establish the influence of billing management on organizational performance. To examine the influence of billing management on organizational performance in manufacturing firms, the study rated key billing management indicators in e-procurement as shown in table 8.

Table 8 Billing management

	N	Minimum	Maximum	Mean	Std. Deviation
Inventory Control	86	3.00	5.00	3.7558	.45854
Transaction Costs	86	3.00	5.00	3.8023	.45555
Accountability	86	3.00	5.00	3.8140	.44752
Pricing Policies	86	3.00	5.00	3.7907	.43700
Aggregate Score	86			3.7907	.4496525

The response to these factors ranged from 3 to 5. The respondents agreed that Inventory Control (mean = 3.76), Transaction costs (mean = 3.80), Accountability (mean = 3.81), Pricing policies (mean = 3.79) influence the e-procurement performance of a firm.

Performance of the Organization

The study sought to establish the respondents' level of agreement on some statements on the evaluation of the performance of the organization on several areas.

Table 9 Performance of the Organization

	N	Minimum	Maximum	Mean	Std. Deviation
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Increased adherence to power processes and procedures	86	3.00	5.00	3.8140	.47308
Production of better-quality products and services	86	3.00	5.00	3.8488	.44767
Procurement planning has significantly improved	86	3.00	5.00	3.8837	.41780
Better procurement benchmarks have been set up	86	3.00	5.00	3.8953	.40668
Enhancement of procurement integrity and transparency	86	3.00	5.00	3.8837	.41780
Overall performance has generally improved	86	3.00	5.00	3.8837	.41780
Aggregate Score	86			3.6045	.43107

The responses to the statements on increased adherence to power processes and procedures, production of better-quality products and services, procurement planning, procurement benchmarks, enhancement of procurement integrity and transparency and enhancement of procurement integrity and transparency ranged between 3 and 5. These responses were presented by a mean of 3.81, 3.80, 3.88, 3.86, 3.88 and 3.88 respectively.

Regression Analysis

Table 10 Coefficients Matrix

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.420	.564		4.288	.000
X ₁	Data Transmission	.208	.098	3.4244	3.7304	.036
X ₂	Buyer/Supplier collaboration	.224	.090	3.5436	3.8576	.015
X ₃	System Management	.014	.081	3.7558	3.8508	.861

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A one percentage point increase in electronic transmission of information would typically result in a 0.208 rise in managerial effectiveness, holding all other variables constant. We reject the null assumption since this is statistically noteworthy at a 95% level of confidence because the P-value (0.036) is less than 0.05, and we draw the conclusion that there is an important relationship between managerial decisions and digital information transfer.

A one percent improvement in electronic supplier/buyer communication would typically result in a 0.224 rise in management effectiveness, if all other variables remained constant. We reject the null assumption since this is highly probable at 95% confidence because the P-value (0.015) is less than 0.05, and we draw the conclusion that there is a significant connection between managerial decisions and computerized buyer/supplier interaction.

Keeping other factors constant, a one percent increase in system management would on average lead to 0.014 increase in organizational management. This is statistically significant at 95% confidence since the P-value (0.00) is less than 0.05 and thus we reject the null hypothesis and conclude that there is a significant relationship between system management and organizational management

Conclusions of the Study

The results show that there is a considerable beneficial association between the effectiveness of an organization and the elements of electronic purchasing, namely communication of data systems, supplier/buyer collaboration, invoicing administration, and system administration. The use of electronic purchasing innovations in electronic procurement is therefore intended to realize faster and more efficient functioning procurement procedures, thus reducing spending on procurement and consequently improving organizational performance. Previously, procurement frequently dealt with administrative routine tasks as well as personal purchases, transforming requests for purchases into purchase orders, or guaranteeing that the proper quantity of inventory remains intact.

Recommendations of the Study

As a result, it is advised that ERP systems (Enterprise Resource Planning), in particular, focus on attempting to bring together and coordinate the various internal departments in order to dissolve those divisions and guarantee that choices for areas like sales, operations, and financial choices are all taken based on identical data. By facilitating improved information sharing, systems for managing client relationships can also be utilized to coordinate the supply chain. In conclusion, the use of technological advances in electronic purchasing is seen as a motivator for innovation plan implementation.

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