



E-ISSN: 2707-6644  
P-ISSN: 2707-6636  
IJCPDM 2023; 4(1): 01-07  
Received: 01-10-2022  
Accepted: 06-11-2022

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## The effect of e-procurement practices on the performance of selected public sector organisation in cape coast: Cape Coast Technical University

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**DOI:** <https://doi.org/10.33545/27076636.2023.v4.i1a.74>

### Abstract

The study sought to examine the effect of e-procurement practices on the performance of selected public sector organization in cape coast: cape coast technical university Central Region of Ghana. The study was purely qualitative; therefore there was sample size. Interviews were used as a data collective instrument. Twenty (20) respondents were used as key informants to the study. The data analysis was done by transcribing the responses on the interview guide into themes and meaning drawn from them. The study gathered primary data using structured questionnaires of which the questionnaire were divided into sections based on the different aspects of the study's goal. The findings of the study also disclosed that the use of e-procurement will help the public organization to speed up their procurement process, though the e-procurement has its own challenges, the respondents interviewed alluded that it would be better to use than the manual procurement process since it will increase the performance of the procurement process as a whole. The study therefore recommend that the public sectors should adapt the e-procurement because not only it can help to achieve our daily activities faster, it can also help to work more efficiently and also consider some various e-procurement practices such as E-ordering, E-sourcing, E-payment, E-invoicing, and E-tendering when they consider to use the e-procurement.

**Keywords:** Procurement, electronic procurement, e-invoicing, e-ordering, e-payment, e-invoicing, e-tendering, operational performance

### 1. Introduction

#### 1.1 Background of the study

Procurement is a comprehensive function which involves activities and processes for the purpose of attaining or acquiring products and services. Procurement activities can cover established fundamental requirement, negotiations of contract, and sourcing activities including market research and supplier evaluation as well as purchasing activities required for the purpose of placing an order and receiving goods and services. The main goal of procurement is to receive the right product or services at the right time and defined time, at the specific location, with the right quality and at the right price carrying out the entire process of purchasing efficiency and effectively (Enporion 2005) <sup>[14]</sup>.

Since the emergent and development of the internet in the 1990's, along with increasing global competitive pressure, supply chain management professionals, researchers, academics and organizations have been continually looking for different possible ways and approaches to minimize costs associated with procurement, sourcing and supplies, increase efficiency and of course to reduce lead time as much as possible. In order to tackle all the above challenges to some extent, organizations and firms have strong tendency in utilizing e-procurement (Aberdeen Group 2005). The process of e-procurement by Podlogar 2006 <sup>[23]</sup> starts with the internet based protocol, facilitated with the function of creating requisition, approving and managing the purchase order, accounting or financial process. When procurement takes place online, it can reach market place that cannot be reached with traditional procurement systems. Organizations communicate, transact and interact smoothly and faster being enable to speed up the cycle time in order to perform tasks and run projects properly.

When it comes to the definition of e-procurement (Insight 2014) <sup>[17]</sup> stands for electronic procurement, which means electronic methods and ways of conducting business transactions, including purchasing, customer invoice, payments, etc.

With the development of internet, companies now focus more on advertising and selling their product and services via internet online, which can be reached to millions of customers worldwide very easily and cost effectively.

By taking into account the holistic and tangible advantages and efficiencies of e-procurement, organizations and government sectors in many countries (CIPS) tended to start adopting of e-procurement along with the introduction and development of electronic data interchange (EDI) and it has been increasingly improving and being adopted since the internet and world wide web came into being. Electronic Data Interchange (EDI) did a great job by allowing customers to send and receive invoices from the suppliers via secure networks as well as letting them exchange and synchronize files related to products, services, specifications, prices and helpful information concerning the customer and supplier's trading practices and whereabouts.

Most of the leading enterprises are (Aberdeen group 2005) utilizing of e-procurement and are improving the expansion of their e-procurement systems. E-procurement technology and also some other sophisticated technologies in the area of e-procurement and electronic transactions are giving the procurement managers and professionals the capability and opportunity to turn into real supply chain for the organization. The development of information technology in terms of internet, resulted in remarkable changes for enterprise supply chain strategies and practices over the last several years. Fraser Johanson and Robert Klassen (2005) states that e-procurement and its core role in supply chain management revolutionized in helping business to business practice and enhancing the flow of information.

### 1.2 Statement of problem

Despite the numerous benefits of e-procurement practices, it is undoubtedly certain that public procurement entities continue to face challenges. The fact is, everything with an upside, similarly has a bad side. Despite the modern procurement currently taking the place online, many organizations are still lagging behind in their rate of adoption. Payments are delayed when it comes to delay and thus, organizations are slow in delivering services as a result of timeliness in supply. Although these challenges may be addressed through e-procurement, adopting the e-procurement system itself may however come with its own effects and challenges. There is an emerging evidence on the realities of e-procurement and some of the difficulties it entails (Angeles and Nath, 2007) <sup>[4]</sup>.

### 1.3 Objectives of the study

The objectives of the study was to establish the effect of procurement practices on the performance of the selected public sector organization. It is meant to highlight on the following objectives:

1. To identify the e-procurement practices used by the selected public sector organization.
2. To examine the effect of e-procurement practices on the selected public sector organization.
3. To identify the challenges of e-procurement practices on the selected organization.

### 1.4 Research Questions

The following research questions guided the study:

1. What are the e-procurement practices used by the selected public organization?

2. What are the effect of e-procurement practices used by the selected public sector organization?
3. What are the challenges encountered with the use of e-procurement practices by the selected public sector organization?

### 1.5 Significance of the study

In defining our study, the following may be seen as clear and unarguable reason in our study which for the prime initial, is for academic purposes in the sense that students who intend to research along similar study or topic will see the result of this final report as an effective source of reference, other parties would as well a gain a reasonable benefit from the final results of this study. Overall, it appears that e-procurement is still in its early stages of adoption in the corporate World. A recent Aberdeen Group (2001) <sup>[1]</sup> study of spending analysis practices of 157 firms revealed that only a few Firms truly know and understand how much they spend, on which products, and with which suppliers (Bushell, 2004) <sup>[7]</sup>. Day, Fein and Ruppertsberger G (2003) <sup>[13]</sup> noted users' reluctance to be subjected to significant changes in Business processes as a major barrier to the implementation of e-procurement systems In Ghana, research on e-procurement has focused on implementation rather than the adoption process and practice of e-procurement. Thus, this study seeks to speak to the effect of e-procurement practices on the performance of selected public sector organization and lay emphasis on its effects and practices as well as its challenges as faced by our pivot sample of public sector organization selected. Organization which fall in the scope of the public sector through this study will not just have the understanding of the use of an internet premise through the use of e-procurement to improve organizational procurement activities and performances but also help the improvement of stakeholders in redefining and relating to the organization performance and system in line with the use of e-procurement procedure. The public procurement board, for the purpose of dynamism, will have a well and clarified idea on the effects and use of the e-procurement by public sector organization and how they conduct their procurement practices so that their laws and policy provisions are more solidified and modified. In total, the entire public can put into use, the result of the study to more effectively understand the importance and effects of the use of the e-procurement system in public sector organization. The study justifies to be very useful and standard and the final result as such.

### 1.6 Overview of research methods (Methodology)

The study used qualitative approach as the study's objective which aims to describe the effect of the e-procurement practices on the performance of the selected public sectors. A structured interviewing questionnaire was used to collect primary data from the respondents. A census was used to ensure representatives. The demographic data collected was processed using SPSS version 24 and the result were displayed using tables and figures. Furthermore, the information were processed using Nvivo version 11 and the result were presented using illustrated quotes.

### 1.7 Scope of the study

The study focused on the effect of e-procurement practices on the performance of selected public sector organization which will cover the effect of e-procurement management

practices, the procurement practices used by the organization as well as challenges which may have been identified with its use. This is however going to be achieved through our pivot sample public organization selected to be a due representation for the general public sector. This study on the effect of e-procurement practices on the performance of selected public sector organization was conducted in public sector in a typical Ghanaian setting (precisely Cape Coast). The findings and recommendations of the final work may be used by similar public organizations in Ghana subsequently.

## 2. Literature Review

### 2.1 Introduction

Theoretical overview, diverse e-procurement practices, and earlier studies on e-procurement practices and its effects on performance of public sector organizations are covered in this part. The chapter then examines the different gaps in the research, provides a summary of the material that has been evaluated, and then presents the conceptual framework for the study.

### 2.2 Theoretical Foundation of the Study

This study's main objective is to assess how e-procurement practices effects the performance of the selected public sector organization. As a result, the study is supported by the technology adoption model (TAM) and resource-based perspective. The next subsections will explore these, which will serve as the research's theoretical underpinnings.

### 2.3 Empirical review

#### 2.3.1 Factors affecting procurement process in public sector

Several factors have been identified as responsible for the performance of procurement processes in the public sector. These factors include the expertise and experience of procurement personnel, poorly managed sites, absence of acceptable levels of supervision as well as inadequate preparation by the contractors. All these negatively impact on the cost and time for the procurement processes as observed by the following people (Sambasivan and Soon, 2007 <sup>[26]</sup>, Assaf and Al-Hejji, 2006 <sup>[5]</sup>, Chan and Kumaraswamy, 1997 <sup>[9]</sup>, and Odeh and Battaineh, 2002) <sup>[22]</sup> resulting in less consumer fulfilment (Maloney, 2002) <sup>[20]</sup>.

Given the limited levels of public resources, Kabaj (2003) <sup>[18]</sup> noted that, it is crucial to ensure that the processes of public procurement are efficiently done, in order to promote national development and serve as manifestation of national obligation to efficiently use the inadequate resources available. Not sticking to consistent procurement processes results in poor organization within the various departments and heightens incidence of leakages of financial resources, and in effect result in cost inefficiency within the entire management of the procurement processes. (Waterman and Knight, 2010) <sup>[28]</sup>. Substantial 10 reduction in cost calls for prudent selection of partners, bid appraisal based on appropriate parameters and taking into consideration the preferred competences, proficiencies and attitudes. (Chua *et al.*, 1997 <sup>[10]</sup>; Iyer and Jha, 2005; Wardani *et al.*, 2006 <sup>[27]</sup>) It is also important to consider the time factor (Chan and Kumaraswamy, 1997) <sup>[9]</sup>, in order to improve upon the quality of procurement performance (Yasamis *et al.*, 2002) <sup>[30]</sup> in addition to favorable working environs (Ai Lin Teo *et*

*al.*, 2005) <sup>[3]</sup>, and modernization (Manley, 2008 <sup>[21]</sup>; Bosch-Sijtsema and Postma, 2009 <sup>[6]</sup>).

#### 2.3.2 Challenges faced by Public Sector Procurement process

In most emerging economies, the public sector procurement system has not been identified as positively influencing the management of public resources. A lot of these countries, do not have people with the requisite skills and technical know-how needed to execute the procurement responsibility. In reference to the Country's Procurement Assessment Report (CPAR, 2003) <sup>[11]</sup> most of the workers engaged in Ghana to work in the various sectors placed in charge of procurement were not people with technical and professional training although they were equipped with some knowledge. The impediments caused by politicians in the processes of procurement activities also poses a big challenge to the functioning of the Act 663. Most politicians think that they have the authority to interfere with the processes of procurement which leads to fraudulent procurement choices (World Bank, 2004). More to this, the public procurement process is bedeviled with a whole lot of corrupt practices like overly pricing of goods and services low levels of supervision, low levels of monitoring, lack of compliance to some dictates of the law (PPA Annual Report, 2008) <sup>[24]</sup>. In their study, Kakwezi and Nyeko (2010) <sup>[19]</sup> found that it was difficult to determine the efficiency and effectiveness of the procurement system because, procurement entities in in the various departments of public institutions in Uganda are faced with the challenge 20 of not having adequate information on the procurement processes, its inputs, outputs, use of resource and results. (Kakwezi and Nyeko, 2010) <sup>[19]</sup>.

Hunja (2003) <sup>[16]</sup> noted a major setback in a lot of developing countries to be the nonexistence of competent bodies in the public sector to take charge of the daily affairs of procurement in terms of the formulation of policies, practices and also to make sure that procurement structures function appropriately. (Hunja, 2003) <sup>[16]</sup> He also noted gaps in the implementation of procurement laws in the sectors. Various forms of unprofessional behaviors negligence and dishonesty which includes the act of inflating contract figures, alteration of documents, meddling, insider dealings and sporadic cases of suspicious approval of contract awarded to families and allies were prevalent (Hunja, 2003) <sup>[16]</sup>.

The following two theories underpins the literature reviews: Technology Adoption Model (TAM)  
Resource Based View (RBV)

## 3. Methodology and organization profile

### 3.1 Introduction

The research design, target population, and sampling are all covered in this chapter, methodology, sample size, data collection and analysis methods, and research organization profile.

### 3.2 Research design

The research design is the overall approach you select to combine the various elements of the study in a logical and cogent manner, ensuring you will successfully solve the research problem. It serves as the guide for the data gathering, measurement, and analysis processes (Barnara, 2006). The study will employ a quantitative and qualitative

method to help understand its problems, particularly the cause and effect relationship between its variables. This study's design enables it to look at the effect of e-procurement practices on the performance of selected public sector organization.

### 3.3 Population of the study

According to Rubin (2013), the population refers to the individuals who make up a group or are designated as study participants and to whom the outcomes, conclusions, and inferences of the research measurements can be applied. The population of the study constitute professionals who dealt in the procurement aspect. This included procurement officers, auditors, stores and the finance. However, the study targeted a population of 50.

### 3.4 Sampling Techniques and Sample Size

It is preferable for that data to be gathered from all the components in the population in order to more accurately represent the viewpoint of the complete population. When it is possible to evaluate the data from every survey conducted among the entire population, this is simply accomplished. However, accessing data from the population is incredibly challenging due to various limitations like time. By focusing on data from a subgroup rather than all potential cases, sampling strategies offer a variety of ways for researchers to limit the amount of data they need to collect. The sample if properly calculated, the sample could then be utilized to draw generalizations. In order to elicit responses from respondents and provide an accurate representation of both the sample and population under study, the census technique was utilized to collect data from the target respondent. The sampling was done by selecting specified number of 20 respondents from the procurement department, stores, audit

and the finance department. 10 people were from the procurement department, 4 of them were from the stores department, 2 were from audit and 4 were from the finance department. Because of the small nature of the participants in the procurement unit. Therefore, purposive sampling was used to select respondents to participate in the study. The number of people available for each category of the respondents of interest were interviewed. This method was used because the participants required for the research were small in number.

### 3.5 Method of Data Collection

The majority of the data for this study came from primary sources. The data was gathered using a structured interviewing questionnaire. Twenty (20) respondents provided the data that was collected for which they include procurement officers, auditors, financiers and stores managers. The questions on the questionnaire were divided into sections based on the different aspects of the study's goal. By presenting the researchers, outlining the goals of the study, and assuring anonymity, permission was requested from the organization. The respondents were interviewed at a convenient time, which the researchers conducted. Data collection for this process took about days. Afterwards, the demographic variables were created and coded in SPSS version 26 and the secondary data was analyzed with NVIVO version 11 to reflect the objectives and group the responses into thematic. The data obtained from these sources were scrutinized for reliability, validity, adequacy and suitability in answering research questions. A good research design and a representative sample will not guarantee a successful project if the analysis is based on inaccurate data (Creswell, 2012)<sup>[12]</sup>.

**Table 1:** Department

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Procurement	10	50.0	50.0	50.0
	Stores	4	20.0	20.0	70.0
	Audit	2	10.0	10.0	80.0
	Finance	4	20.0	20.0	100.0
	Total	20	100.0	100.0	

**Source:** Field work, (2022)

From table 1 the SPSS output shows that out of the twenty (20) respondents 10 respondents representing 50.0% were from the procurement department, 4 respondents representing 20.0% were from the stores department, 2 respondents were auditors for which they represented 10.0% and 4 respondents representing 20.0% were from the finance department which makes up the 20 respondents.

### 3.6 Method of Data Analysis/ Statistical Procedure

The information gathered from the completed surveys was first examined, then it was cleaned, changed, and compiled into helpful data for simple understanding. The data will then be organized into coded categories to aid in analysis. The data was analyzed using the statistical software for social sciences (SPSS) version 26 and NVivo version 11. Tables, figures and quotes displays of the results were used. According to Creswell (2012)<sup>[12]</sup>, it involves preparing the data for analysis, conducting different analysis, moving deeper and deeper into understanding the data, representing the data, and making interpretation of the larger meaning of the data.

**3.7 Sources of Data:** Data collected for this thesis was primary data, with some literature review. The primary data were obtained directly from respondents through in-depth interviews. The primary data gives personal information on objectives of the study. The literature review was to gather the necessary information to guide the conduct of the study in order to confirm or reject primary data.

#### 3.7.1 Primary Data Collection

The primary data was collected with a semi-structured interview guide. Qualitative researchers usually employ structured interviews which involve a number of open and closed ended questions based on the topic areas that the researcher wants to cover. The close and open ended nature of the questions posed defined the topic under investigation and provided opportunities for both researcher and interviewee to discuss the topic in more detail. The instrument also enabled the researcher to have the freedom to probe the respondents to elaborate on an original response or to follow a line of inquiry introduced by the researcher.

**3.7.2 Literature search engines**

To be able to identify relevant literature on effect of e-procurement practices on the performance of selected public sector organization, books, online Journals, articles and other professional papers on procurement performance were searched online and from the library.

**4. Result and Discussions**

**4.1 Introduction**

As stated earlier, the specific objectives of this research are to identify the e-procurement practices used by the selected public sector organization, to examine the effect of e-procurement practices on the selected public sector organization and to identify the challenges of e-procurement practices on the selected organization. Twenty (20) respondents were used as the key informants to the study and In-depth Interviews (IDI) were held with them. The data

analysis was done by transcribing the responses on the interview guide into themes and meanings drawn from them.

**4.2 Background information**

Through the questionnaire, the respondents' background information or demographic data were gathered. The background data gathered from the respondents consists of, Number of participants, name which was represented with age, experience and qualification of the selected public sector organization. The research administered thirty 30 questionnaires to the respondents and got responses from twenty (20) of the respondents. This shows a response rate of 70.2%. The study hence conducted the analysis with twenty (20) responses which implies twenty (20) observations were obtained.

**Table 2: Gender**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	13	65.0	65.0	65.0
	female	7	35.0	35.0	100.0
	Total	20	100.0	100.0	

Source: Field work, (2022)

From table 2 the SPSS output shows that out of the twenty (20) respondents 65.0% of them were male while the females were 35.0%. This shows that thirteen (13) of the

respondents were male and seven (7) were female. As a result, there are more male respondents in the study than female respondents.

**Table 3: Age**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-29 years	7	35.0	35.0	35.0
	30-39 year	8	40.0	40.0	75.0
	40-49 years	3	15.0	15.0	90.8
	50-59 years	2	10.0	22.2	100.0
	Total	20	100.0	100.0	

Source: Field work, (2022)

Regarding the respondents' ages, the study gathered data based on the following age classifications. 20-29years, 30-39years, 40-49years and 50-59years.

It can also be observed from Table 3 that most of the respondents were between the ages 30-39years which represents 40.0% of the twenty (20) participants. Seven (7) of the respondents representing 35.0% of the employees

were between the ages of 20-29years followed by 3 of the respondents representing 15.0% who were between the ages of 40-49years and 2 respondents who were 50-59years representing 10.0%. The age demographics shows that all the respondents were within the legal age framework to give valid response for the study.

**Table 4: Qualification**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	HND	1	5.0	5.0	5.0
	Degree	12	60.0	60.0	65.0
	Other Certification (Masters)	7	35.0	35.0	100.0
	Total	20	100.0	100.0	

Source: Field work, (2022)

More so, the educational level of the respondents as shown in Table 4 shows that majority of 12 respondents have attained degree representing 60.0% and 35.0% representing 7 people have the masters qualification including 1 HND graduate representing a percentage of 5.0.

**5. Summary of findings, conclusion and recommendation**

**5.1 Summary of Findings:** The study revealed that the qualitative research method and the descriptive design were employed in the study. A structured interview guide was the

only research instrument used in gathering primary data for the study. Even though some of the staff in the procurement unit have some level of training in the procurement, they still find it difficult to execute procurement activities since it's not entirely used and recognizes by most public organizations.

**5.2 Nature of procurement carried out by the organization:** The organization uses the manual procurement method to carry out their procurement

activities. Even though they have heard about e-procurement they still do not use it because most organizations have not adapted the electronic procurement method and according to the respondents, it may take time and training to fully adapt and understand the e-procurement procedures.

### 5.3 Operational Performance

From the interviews, most of the respondents believed that using the e-procurement will increase the performance of the procurement process by being at your comfort office and approving invitations rather than them moving all the way from their offices to your office to submit invitation or seek for approval. Also, they included that it will be simple in terms of response from suppliers compared to the manual procurement.

### 5.4 Challenges

From the interviews, respondents believed that, adopting the e-procurement poses various challenges on the organization. Per our interview, a list of factors were given where the respondents were supposed to give out the challenges relating to the given factors. Below are the summary of the responses. In terms of economic sustainability, they alluded that it's expensive to set up in terms of switching from paper work to digital. Under the sustainability, they also included that the cost of training employees would be high and it also requires a significant upfront investment to set it up. In the social sustainability, some alluded that breakdown in social interactions between buying organizations and suppliers which will result in buyers to developing an actual relationship with the suppliers. Some also included that some suppliers are illiterate in terms of modern technology systems which will make it challenging for them to adopt the e-procurement and it will also require greater education and training. Under the operational performance, respondents responded that it slows down the procurement processes in cases of network and system breakdown and also Due to the supplier's and the procurement staff's lack of familiarity with the e-procurement system and the slow internet system, the procedure will be challenging.

### 5.5 Recommendations

Based on the findings and conclusions of the study, the following recommendations were made: More public sectors should adapt the e-procurement because not only it can help to achieve our daily activities faster, it can also help to work more efficiently. Also, public sector organizations adopting the e-procurement might help we the student as well since we might need some major information on the field to complete our work such as these. The public organizations should also consider making their procurement units and functions flexible so that it would be easy for student and others to seek for their relevant information they need to complete their task. Taking an example is where we found it difficult to collect information from several public sector organizations because it has to go through several processes and reviews in order to get our request approved and based on that we had financial crisis moving back and forth to institutions waiting for our request to be approved. The public procurement should also consider some various e-procurement practices such as E-ordering, E-sourcing, E-payment, E-invoicing, and E-tendering when they consider to use the e-procurement.

## 6. Conclusion

This study has provided an overview and relevant discussion on some major e-procurement and their effect on the performance of a selected public sector organization in Cape Coast. It aims at providing solutions to challenges that may occur when e-procurement is used. In order to improve the ability of members and other interested parties to work conscientiously, procurement employees should get both short-term and long-term training. In order to curb these problems, the assembly must establish the required structures and employ qualified procurement professionals to manage e-procurement activities. This training should not be a one-time event but rather should be routine.

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