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Exploring the impact of ICT in procurement at western regional medical stores

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Abstract

The main aim of the project was to assess the role of Information Communication and Technology (ICT) in procurement. The specific objectives were to identify the major role ICT play within Central Regional Medical Stores, How ICT helps to achieve procurement objective and goals and the challenges associated with the use of ICT in procurement. Over, twenty-five respondents were selected from Central Regional Medical Stores. They consisted of management, procurement department, and stores finance and service personnel. The research methods used were data from primary and secondary sources. The primary sources were mainly questionnaires and observation. And the secondary source included internet, newspapers and others. With regards to the findings of this research, it was obvious that Central Regional Medical Stores were not using ICT in its procurement activities to its maximum efficiency. Despite the important role ICT plays in the institution. Therefore efforts must be directed towards putting in place certain mechanism to formulate concise plans that take areas to encourage, improve and develop the concept of ICT to help the procurement department to achieve their objectives effectively and efficiently.

Keywords: ICT helps, finance and service, included internet

Introduction

Background of the study

Information communication technology (ICT) is giving new vitality to civil society, as they give communities, not for profit organizations and informal groups an enhanced capability to share information, ideas, activities, and assets. It can also enhance effectiveness, accountability and transparency, by enabling increased cooperation and communications across agencies, and between agencies and enterprises and ordinary citizens (Chapelle, 2003) [19]. Information to be used as a part of procurement activities has to be reliable and relevant, also timely. Access to correct and relevant (and timely) information makes emancipatory and participatory action possible (David and Foray, 2002) [22]. The researcher look at how able it's desire to use ICT as a means to attain development focusing on procurement activities. Now nations worldwide have recognized the development opportunities and the challenges of the emerging information age characterized by information and communication technologies (ICTs). These technologies are driving national development efforts worldwide and a number of countries in both the developed and developing world are exploitation ways of facilitating their procurement activities through development and exploration of ICTs within their economies and societies. Information and communication technology consists of people, equipment and procedures to gather, sort, analyze, evaluate and distribute accurate, timely and pertinent information for management decision markers (Nweze, 2010) [58]. In the knowledge society, organization need to develop competitive advantages based on an adequate and intensive use of information and communication technologies (ICTs), which is an essential element of success in today's market Brin, (1999) [16]. Information and Communication Technology is a term that includes all technologies critical for the manipulation and communication of information. The world thrives on access to information communicated mainly through technology. And one can say individuals, organization and even countries that are privileged to have had access to and taking advantage of ICT are the ones that have achieved significant growth and development (Nweze, 2010) [58]. Information and communication technology is essential and significant for effective and efficient operation of any business venture. Used appropriately it can offer,

- Smoother and faster process flow

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- Efficient distribution of information
- Decentralization of tasks and decisions
- Increased transparency and better control

Notwithstanding its apparent advantage and worldwide adoption, many companies and institutions particularly in developing countries are yet to benefit from its full potentials. The study seeks to unravel the role of ICT in procurement in the public institution in Ghana using Central Regional Medical stores as a case study.

Statement of the problem

An organization is able to realize the full benefits of ICT in procurement only when its internal inlay system is interconnected with the procurement system (Anderson *et al*, 2003) ^[4]. The current system is not able to fulfill this need and preliminary studies conducted by the researcher at the procurement process involve a lot of paperwork and is very lengthy, the system is only available to a few people, and have no provision of ensuring competitive bidding due to limited or even lack of or even lack of access to information regarding a multiplicity of suppliers. (Kamau, 2016) ^[36] Established that the Use manual systems in procurement have resulted into poor data management. The researcher will investigate whether the use of ICT has made the scenario different, lack of qualified purchasing personnel and high cost of introducing ICT in procurement makes it difficult to implement ICT in the procurement department of the institution.

Objectives of the study

The general objective was to assess the role of ICT in procurement within Central Regional Medical Stores.

Specific objective:

- To find the major role ICT play within the institution (Central Regional Medical Stores).
- To determine whether ICT helps to achieve procurement objective and goals.
- To investigate the challenges associated with the use of ICT in procurement

Research questions

The study attempts to answer the following questions:

- What major role does ICT play within Central Regional Medical Stores?
- How does ICT help to achieve procurement objective and goals?
- What are the challenges associated with the use of ICT in procurement?

Significance of the study

This study will aim at examining the role of ICT in procurement which will enable procurement entities to deliver services effectively and efficiently, help get deeper knowledge and understanding. The findings would therefore be of great help to both practitioners and academia. This will also serves as reference for future research in similar area. Again, the findings would add to the body of academic knowledge.

Scope of the Study

The population as Tar as the study IS concerned of all the staffs at Central Regional Medical stores. The study looked at the role of ICT in procurement in the public institution,

Central regional Medical stores was selected as a case study because of proximity and easy access to information.

Limitation of the Study

There is lack of sufficient research materials in the library, Cape Coast Technical University.

Difficulty in obtaining primary and secondary information, principally from the Organizations, due to the bureaucratic system of governance and procedures that have were implemented by companies in releasing information to outsiders. Administration of questionnaires become difficult as it has to be a mobilized target group. Also, there was challenge of having to undergo this project work and cope with school activities such as 80mg to lecturers, doing assignment and learning

Organization of the Study

The project comprises five (5) chapters. Chapter one consist of introduction of the study. It looks at the background to the study, the objectives of the study and the statement of the problem. It also briefly looks at the research questions, scope, and limitations of the study and organization of the study. Chapter two presents the relevance on the subject. Literature is reviewed according to the research questions and objectives of the study. Chapter three highlights the methodology used in collection of the research data. It explains the research design. It will also give details about the population, research sample and sampling procedures used in the study. It explains the research instruments, methods of data collection and data analysis plan. Chapter four is the data presentation and analysis. Chapter five presents the findings, conclusion and recommendations.

Literature Review

Introduction

The overarching aim of this is to examine the published literature with respect to adoption and utilization of IT in procurement. To this end, the chapter commence by exploring meaning and defining characteristics of Information and Communication Technology and technology procurement. The review continues by addressing each of the substantive research issue to be addressed in this study, namely: the problems associated with traditional procurement, the benefits to be realized from IT procurement, challenges associated with IT procurement implementation.

Definition of ICT in Procurement

Information communication technology has gained an increasing awareness in the 21th Century (Neupane *et al*. 2012) ^[56] Information technology has been used in diverse disciplines and indifferent context. According to (Lysons and Farrington, 2006) ^[44], ICT refers to the acquisition, processing, storage and dissemination for vocal, pictorial, textual and numeric information by micro-electronics based combination of computing and telecommunications. The definition of ICT above has been widely accepted by most institutions, organizations and writers of ICT as the transition from the manual to technological ways of doing things are concerned. (Davis, 2010) ^[24]. Supported and advanced the definition by adducing that Information and Communication Technology Is the automatic acquisition, storage, manipulation, movement control, displays

switching and interchange, transmission as reception of data or information.

As argued earlier on, Information and Communication Technology (ICT) can be used in different context of procurement, ICT has been referred to as procurement using technology such as internet /web based system by governments and private organization in conducting their procurement relationship with bidders for the acquisition of goods, works, services and other consulting services required by the public sectors Panda and Sahu, (2012). A writer also defined it as an inter-organizational information system, which automatizes any part of the procurement process in order to improve efficiency, quality, and transparency in government (Vaidya *et al*, 2009)^[80].

IT Procurement

Authors have focused on discrete aspect of IT procurement thereby developing definitions to provide a context for their research. Examples from the literature include Gebauer and Shaw, (2002)^[27] in relation to the E-commerce procurement process, Croom and Brandon-Jones, (2005)^[20]. In relation to the classification of IT procurement transactional structures and Salo, (2006)^[67], in relation to the impact of using ICT to facilitate procurement activities. The absence of definition of electronic procurement has led to a plethora of definition appearing in recent years and led to confusion within organization seeking to pursue ICT in procurement. This confusion has in fact been identified by a number of authors McConnell, (2009)^[47, 48]. As one of the key inhibitors in its adoption, MacManus, (2002)^[45], also acknowledged this confusion as well as the confusion between purchasing and procurement. As noted by (Dooley and Purchase, 2006). It is highly important than a consistent definition is used to avoid each potential respondents having a slightly different conceptualization of IT procurement, therefore it is vitally important as suggested by (Schoenherr and Tummala, 2007)^[71], that IT procurement is define explicitly and unambiguously at the beginning of the study to avoid confusion. Schoenherr and Tummala (2007)^[71] also suggested that this should be accomplished by adopting an established definition from past research or developing an own characterization of how IT procurement is understood. The simplistic definition of procurement was enhanced by Kwablah, (2016)^[42] who introduces procurement to a reviewed discussion by suggesting that "IT procurement is the acquisition of goods and services without the use of paper processes". Similarly (Teo *et al*, 2009)^[78] who also defined IT procurement is the streamlining of corporate purchasing process by eliminating traditional paper based documents such as purchase order and requisition forms. The early definitions focused largely on technologies, others which supported this approach were Stansfield *et al*. (2006)^[77] which focused on technology solution that were available at the marketplace. This approach to defining IT procurement was reinforced by (Knudsen, 2003)^[37] who added Electronic Data Interchange (EDI), e-tendering, e-informing, e-collaboration as mechanisms for delivering IT procurement. Their research concluded that IT procurement is simply "aspect of procurement function supported by various forms of electronic communications. In essence, writers have concluded that the mechanisms for delivering IT procurement provide a Comprehensive definition for IT procurement.

E-Procurement

According to Sampaio, (2009) E-procurements (electronic procurement, sometimes, also known supply exchange) is the business to business or business to consumer or business government purchase and sale of supplies, Work, and services through the internet as well as other information and networking systems, such as electronic data interchange and enterprise resource planning John, (2012)^[35]. Based upon review of literature, Information Technology (IT) procurement and E-procurement are used interchangeably to mean the same thing. In this regard there has some information provided by researcher on e-procurement. Currently there are different types of E-procurement systems available in the market as e-market, e-MRO, e-sourcing, e-tendering-ordering and e-exchange Kumar, (2017)^[40]. Each type of system is built for special purpose and its own specific functionality and characteristics. The most common-procurement system accumulated from literatures include; E-Informing - Gathering and distributing purchasing information both form and to internal and external parties using internet technology Bhat and Qadir, (2013)^[15]. E-Sourcing- Process of identifying new suppliers for specific categories of purchasing requirement using technology Knudsen, (2003)^[38]. E-Tendering- The process of sending requests for information and price to suppliers and receiving the response using internet technology (Betts *et al.*, 2006)^[14] E-Reverse auctioning- Internet based reverse auction technology which focuses on the price of the goods and services auctioned Bahreman, (2010)^[12]. E-MRO and Web based ERP- The process of creating and approving purchasing requisitions, placing purchase orders and receiving the goods or services ordered Via a software system based on internet technology, e-MRO deals with indirect items (MRO), web-based ERP deal with product-related items Sithole, (2017)^[75].

Research Methodology

Introduction

This chapter focuses on the approach adopted for the study which describes the method and techniques that were adopted to collect data in the field. The population, sample and sample procedures and tools for data analysis have been discussed. According to (Yin, 2003) a research methodology defines what the activity of research was, how to proceed, how to measure progress and what constitutes success. Kumekpor (2002)^[41] also defines it as the method, procedures and technique used in an attempt to discover what we want to know.

Research Design

The research design used was the descriptive survey. Descriptive research was aimed at determining the nature of a group or a situation as it exists at the time of the study. This research type was also experimental in the sense that it involved the study of relationships between non-manipulated variables in a natural rather than artificial setting.

Population

Population refers to the set of individuals or events having common visible characteristics, which the researcher was interested in Sarpong, (2016)^[69]. Population could be defined as a total sum of people living in a specific geographical area. The target population for this study was

the staff of Central Regional Medical Stores which was made up of fifty (50) workers.

Sample and sampling procedures

In statistics, sampling is a sample of a population that is to represent the entire group. When conducting research, it was often impractical to survey every member of a particular population because the sheer number of people was simply too large. In order to make inferences about characteristics of the population, the researcher used random sample. The researcher used simple random sampling in obtaining information from staff within the targeted unit. This sampling technique was used because of the population involved in this study was the staff of the Central Regional Medical Stores and they were easily accessible. Random sampling is a method of drawing a proportion of the population so that each would have an equal opportunity of being selected. This method was chosen because it was easy to operate and also gives every member of the target population opportunity as it was just a subgroup and not of large size or number of population. We chose a sample size of (25). Of these, we had eight (8) from the procurement department, five (5) from stores, Six (6) from the finance, three (3) from management and three (3) service personnel

Sources of Data

This refers to the research approach used to data for. The researcher used both primary and secondary data sources.

Primary data was gathered through personal interviews, questionnaires, observation and experiments. Primary data refer to original data collected for a current research. It was also data collected from the population samples of researcher's current study. It was data obtained from administered questionnaires and interviews conducted with staff of the institution.

Secondary data was the name given to data already gathered and perhaps published by another group. ICT was the data a researcher may use for his study but which has been originally collected and published for another purpose. Secondary data was obtained from textbooks, internet, newspapers, magazine and others. This was adopted since it helps in quick assembling. Data collected was inexpensive and they are frequently several sources. This therefore provides adequate information needed by the researcher.

Research Instruments

According to Simmons *et al.* (1999) ^[74] research design represent a plan, structure and strategy of investigations conceived so as to obtain answers and to control variance. One of the most important components of a research designed was the research instrument because they gather or collect data or information. These research instruments were tools for gathering data. Without research instrument, it would be difficult to obtain information for research work or stake. In order to achieve the primary objective of the study which was to access the use of information and communications technology in procurement in public institutions in Ghana, the case study approach was employed for the study. Hence Central Regional Medical Stores was the selected area of study. A case study approach therefore was a comprehensive enquiry into part of a subject with similar attributes to entire subject under study to obtain an understanding of a whole subject. CASE Studies are

often ASE studies are often regarded as using both quantitative and qualitative research and combination of both approaches (Bryman, 2004) ^[17]. The advantages of using a case study approach include: obtaining a deeper understanding of the issue being studied irrespective of complex the issue was, revealing the inter-relationships which exist between groups, policy how assures, processes and other factors which the study may focus on and its adaptability to various research objectives. In particular it enables a quick understanding of complex issues, therefore providing foundation for further studies into subjects, using other research designs. A case study was also known for its flexibility-being adaptable to various study objectives. On the other hand case studies lack representatives. It was therefore argued that what happened in one case cannot be claimed to be physical of all cases, thus making it difficult to generalize the result of a case study. To minimize this limitation, literature works were consulted and references were made to them where applicable in making sure that the findings of this study had a wider perspective.

Data Collection Procedures

Questionnaire

It was the most common instrument or tool for obtaining the data beyond the physical reach of the observer which for example, may be sent to human beings who are thousands of miles away. OT Just around the corner. There are forms of questionnaire that was closed ended and open ended question. The question was designed and distributed to a selected number of people. This was distributed with the intention of soliciting information about the research topic. The closed ended questions were used because they provided a range of answer categories for respondent.

The questionnaires were suitable because they provide a set of specific objectives. It enabled the researchers to translate information needed into a set of specific questions that the respondents would answer. It minimizes respondents' error. It ensures that all respondents have the same questions to answer and enable the researcher to collect statistically quantifiable information.

Tools for Data Analysis

Findings of the research were reported using a combination of varied approaches and techniques. After the data has been collected by means of questionnaires made up of open ended and close ended questions, the researcher used statistical technique in the form of pictorial representation such as tables to represent the responses in the fourth chapter. The major findings are also summarized in line with objectives of the study and recommendation made.

Profile of Central Regional Medical Stores

The Ghana Health Service (GHS) is a Public Service body established under Act 525 of 1996 as required by the 1992 constitution. It is an autonomous Executive Agency responsible for implementation of national policies under the control of the Minister for Health through its governing Council - the Ghana Health Service Council. The GHS continue to receive public funds and thus remain within the public sector. However, its employees will no longer be part of the civil service and GHS managers will no longer be required to follow all civil service rules and procedures. The independence of the GHS is designed primarily to ensure that staffs have a greater degree of managerial flexibility to carry out their responsibilities, than would be possible if they remained wholly within the civil service. Ghana Health

Service does not include Teaching Hospitals, Private and Mission Hospitals. The region shares borders on the east with the Greater Accra region, on the north with Ashanti region and on the north-east with Eastern region. The region has 20 administrative districts with the historical city of Cape Coast as the capital. About 63% of the region is rural (2008, DHS). The population was estimated at 2,413,050 for the year 2013 with an annual growth rate of 3.1% (PPME/CHIM-GHS, 2012) and population density of about 215 inhabitants per square kilometer.

Core values

- Professionalism
- Team work
- Integrity
- Discipline
- Excellent
- People centered

Vision

The Ghana Health Service has the shared vision to ensure "A healthy population with universal access to quality health service.

Mission

To provide and prudently manage comprehensive and accessible health service with special emphasis on primary health care at regional, district and sub-district levels in accordance with approved national policies.

Philosophy and Orientation

The establishment of the Ghana Health Service is an essential part of the key strategies identified in the Health Sector Reform process, as outlined in the Medium Term Health Strategy (MTHS), which are necessary steps in establishing a more equitable, efficient, accessible and responsive health care system.

The reforms build on the reorganization of the MOH that began in 1993, which was explicitly designed to set the scene for the establishment of the Ghana Health Service. The reforms also provide a sound organizational framework for the growing degree of managerial responsibility that has already been delegated to districts and hospitals. Themes that were central to the organization of 1993 remain important today for the Ghana Health Service: careful stewardship of scarce resources, clear lines of responsibility and control, decentralization, and accountability for performance rather than inputs.

Ghana health service bridge the equity gaps in geographical access to health services, ensure Sustainable financing for healthcare delivery and financial protection for the poor, improve efficiency in governance and management of the health system, Improve quality of health services delivery including mental health services, enhance national capacity for the attainment of the health related MDGs and sustain the gains and intensity prevention and control of non-communicable and other communicable diseases,

Objectives and functions of the institution

The objects of the Service are to:

- Implement approved national policies for health delivery in the country.
- Increase access to good quality health services, and

- Manage prudently resources available for the provision of the health services.

For the purposes of achieving its objectives the GHS will perform the following functions amongst others

- Provide comprehensive health services at all levels directly and by contracting out to other agencies. As part of this function, the GHS will:
- Develop appropriate strategies and set technical guidelines to achieve national policy goals/objectives
- Undertake management and administration of the overall health resources within the service Promote healthy mode of living and good health habits by people
- Establish effective mechanism for disease surveillance, prevention and control
- Determine charges for health services with the approval of the Minister of Health
- Provide in-service training and continuing education
- Perform any other functions relevant to the promotion, protection and restoration of health.
- Ensure access to health service levels by providing health services or contracting out service provision to other Contracting out service provision together recognized health care providers
- Contract with teaching hospitals for the treatment of referred patients

Data Presentation, analysis and Discussions

Introduction

This section presents the summary of the data gathered and results presented using frequency tables. The main aim of the study is to assess the role of Information Communication Technology in procurement; a case study of Central Regional Medical Stores. To solicit for Sponsors, 25 questionnaires were administered. All 25 questionnaires distributed were retrieved which represent 100% response rate.

Demography of Respondents

This section reveals the demographic information of respondents of the study. These include gender, age and educational level.

Table 1: Gender of respondents

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	13	52	52	52
Female	12	48	48	100
Total	25	100	100	

Source: Field survey, 2021]

As indicated in table 4.1, out of the twenty-five (25) respondents, majority of the workers were males representing 52% and the remaining 48% were females. This indicate that majority of the workers are males.

Table 2: Age group of respondents

Age	Frequency	Percent	Valid percent	Cumulative Percent
20-30	10	40	40	40
31-40	10	40	40	80
41-50	5	20	20	100
Total	25	100	100	

The age distribution was made up of the following, 20-30 years representing 40%. 31-40 years representing 40%.41-50 years representing 20%. It can be deduced from the table

that the institution has energetic workforce because majority of the workforce fall within ages 20-40.

Table 3: Level of education

Qualifications	Frequency	Percent	Valid percent	Cumulative percent
HND	13	52.0	52.0	52.0
Degree	10	40	40	92
Masters	2	8	8	100
Total	25	100	100	

Source: Field survey, 2021]

From the Table 4.3, it was realized, 13 of the respondents representing 52% were HND holders, 10 respondents representing 40% were degree holders and only 8% were

postgraduate. It can be observed from the table that the institution has an experienced workforce.

Table 4: Position or rank within the firm

Variable	Frequency	Percent	Valid Percent	Cumulative Percent
Procurement Officer	3	20	20	20
Stores officer	10	40	40	60
Position procurement assistant	5	20	20	80
Other positions	5	20	20	100
Total	25	100	100	

Source: Field survey, 2021]

As indicated in Table 4.4, five personnel (Procurement Officer, Procurement Assistance and other Positions) representing 20% of the respondents and one person each representing 4% of acting procurement officer, Head or store, procurement officer were part of the respondents to solicit their views on the role of ICT in procurement. This really implies that, for maximum representation, the majority or the target group were contacted; therefore, the right information was given.

to achieve procurement objectives and goals and also to the challenges associated with the use of ICT in procurement. Data collected was analyzed and represented using tables. Conclusion was drawn and recommendations made after the data analysis and critical discussions.

Major role ICT plays within the institution

This objective was analyzed to find the role ICT plays in helping to achieve the institution's objective. This was analyzed in line with the research questionnaire.

Demographic of respondents C

Study reveal that majority of the respondents were females with a percentage of 52. The remaining 48 were females. Most of the respondents were graduates and majority or they were between the ages or 20oOWS that the institution has energetic and experienced workforce.

Table 5: Shows in table literacy in IT frequency percent and valid percent

How ICT helps in achieving procurement objectives and goals

Various questions were asked about the role of CT in procurement. For example, were procurement activities computerized? Majority of the respondents admitted that, procurement activities were partially computerized. This implies that, the office has some of the activities computerized but not to the extent that in fastens the day activities. Majority of the respondents agreed that workers were ready for the implementation of the ICT in procurement to fasten and make day-to-day activities easier.5.2.3 Challenges associated with the use of ICT in Procurement. Majority of the respondents were of the view that there were more challenges in the usage of ICT within the institution as indicated by 52%. The rest of the respondents view the challenges in the usage of ICT to be minimal.

Literacy in IT	Frequency	Percent	Valid Percent	Cumulative
Yes	20	80	80	80
No	5	20	20	100
Total	25	100	100	

Source: Field survey, 2021

Out of twenty five respondents, Table 4.5 shows that 20 personnel representing 80% are IT literate and personnel representing 20% are not II literate, so in all the majority of the respondents have more knowledge about ICT.

Summary of findings, recommendations and conclusion

Introduction

This chapter has a summary of the findings of the research, recommendations and conclusion based on the findings.

Recommendations

The following recommendations were made from the finding that were obtain from the research: The institution (Central Regional Medical Stores) needs to have a mechanism put in place to train and develop workers to refresher courses to keep them abreast with ever changing trends in the world of information communication technology. Workers needed to be enlightened on the fact

Summary

The entire research was focused on assessing the role of Information and Communication Technology (ICT) and procurement, a case study of Central Regional Medical Stores. Specific objectives set were to identify the major role of ICT plays within the institution, whether ICT helps

that ICT is not there to replace them, but rather to work efficiently and effectively.

In the entire study, the researcher observed that Information and Communications Technology has got a lot of benefits for the institution. And systematic efforts must be directed towards putting in place certain mechanism to formulate a concise plan that enables procurement department of the institution to achieve their objectives.

Conclusion

This study has explored the role of ICT in procurement in Central Regional Medical Stores. With regards to findings of this research, it is obvious that Central Regional Medical Stores is not using ICT in procurement to its maximum. The researcher found out that ICT has a vital role to play in the procurement sector and its use has a positive impact on the activities they perform. In addition, it also fastens the preparation of tender documents and finally helps easy communication. Almost the responses from the questionnaire were the same.

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