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Assessing the Impact of E-Procurement Implementation in Ghana Health Services, Ashanti Region of Ghana

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Abstract
Purpose: E-Procurement is more than just a system for making purchases online. Some companies implement e-procurement and succeed while others fail. This study was carried out to assess the impact and the strategic challenges of e-procurement implementation in some selected health facilities in the Ashanti region of Ghana. The main objective of the study is to assess the impact of electronic procurement implementation and its challenges in some selected health facilities in the Ashanti region of Ghana.**Methodology:** The study adopted a descriptive approach in trying to establish the factors that influence the success of e-procurement implementation projects. The population sample for the study was four public hospitals, PPA, and medical suppliers in the Ashanti region with the used of census survey and the data collection methods used in the study were secondary and primary data. The data was collected from the respondents through questionnaires.**Findings:** It was revealed that Ghana health service institutions have not yet adopted the e-procurement management system. The critical success factors for e-procurement implementation identified were: organisational and environmental issues, technical issues, and management commitment to successful e-procurement adoption. It was also revealed that for the e-procurement implementation to be successful there is the need for education and training of stakeholders, resources investment to the provision of IT and ICT network infrastructure and reliable power supply, establishment of legal and regulatory framework to serve as legal backing and employing the requisite technical personnel to man the e-procurement system effectively. Again the study found that set-up cost, top management posture, lack of skilled personnel, the inadequacy of IT and ICT infrastructure, and lack of e-procurement legal backing tools are the major challenges impeding e-procurement adoption in the health sector.**A unique contribution to theory, practice, and policy**: The study recommends that Ghana health service institutions need to incorporate all the e-procurement activities into the system by finding out ways of encouraging employees to make use of the e-procurement system.
Keywords: e-procurement, e-reverse auctioning, value for money, cost reduction, and saving
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1.0 INTRODUCTION

Over the past 30 years, public organizations have increasingly relied on information and communication technologies (Asgarkhani 2005; Buffat 2015), such as e-procurement systems, to enhance managerial efficiency and effectiveness and reduce transaction costs. Also, procurement budgets in developing countries account for about 14 percent of the gross domestic product of government expenditure according to PPA Act 663 (Act 2003).

In Ghana, public procurement represents about 24% of total imports and apart from personal emoluments, public procurement represents 50-70% of the national budget and 14% of Gross Domestic Product (GDP) according to Adjei (2005). Ghana's government is engaged in identifying rationalization initiatives. The adoption of e-Procurement in the Ghana Health Service would ensure efficiency in the procurement process with the reduction of purchasing and administrative costs and timely execution of contracts. It must be noticed, however, that the semantics of many "e" terms is still not universally shared and their meaning is continuously shifting and often incoherent; for instance, the term "e-service" is also applied to the public sector in the narrower sense of a service provided on the web by an administration to their citizens. E-procurement-related innovations in technology and organization have been considered mostly for private operators according to (Kim and Shunk, 2004).

However, successive reviews of the public procurement regimes in Ghana reveal substantial inefficiencies, corruption and lack of transparency, and delays in contract execution to completion within the scheduled time in the procurement processes of health services-related activities. It is against this background that the research study intends to assess the impacts Ghana Health Service stands to benefit from and the challenges it would encounter in the implementation of e-procurement to improve upon the manual traditional procurement process. Electronic procurement (e-procurement) is the process of electronically purchasing the goods and services needed for an organization's operation (Beauvallet, Boughzal, and Assar, 2011). It entails implementing electronic means to process, publish, exchange, and store information concerning procurement without a paper medium. Hence, in concrete terms, it consists of publishing calls for tenders on the Internet, sending out documents and specifications (consultation files for companies, binding tender forms, etc.) in digital form, receiving tenders electronically, and so on, to ensure greater efficiency in managing procedures for awarding procurement contracts according to Beauvallet*et al*, (2011).

Organizations adopt e-procurement due to the myriad benefits: integration taps digitization benefits, improves procurement efficiency, cost management, and elimination of sourcing errors (Done *et al*, 2011, European Union, 2012 Reddick, 2004). Efficiencies are generated from the adoption of e-procurement technologies which enables transaction processes to less mistakes, and more efficient purchasing (Singh and Punia, 2009). Many private companies have adopted e-procurement due to the benefits of digitization, easy management of catalogs, and the advantage of convenience (Singh *et al*, 2009). There is, however, a flip side to this: integration issues, language barriers, legal bottlenecks, and network challenges (European Union, 2012 Singh *et al*, 2009). In this sense, therefore, Ghana Health Service must take a long look ahead before they fully cut over to e-procurement technologies. The e-procurement is viewed as the value-added application of e-commerce solutions to facilitate, integrate and streamline the entire procurement process from initial strategy development through contract placement to payment. The broad aim of this research study is to encourage Ghana Health Service organisations to have e-procurement plans for goods, works, and services so that stakeholders can access and approve projects easily online. This will also enhance transparency, competition, value for money, fairness accuracy, and speed in the tendering process and improve coordination among e-procurement stakeholders.

1.1 Statement of the problem

The purpose of the e-procurement implementation in Ghana Health Service is to improve the objectives of the Public procurement process such as harmonizing the processes of procurement in the public entities in a speedy and timely manner to secure a judicious, economic and efficient use of state resources in public procurement and ensure that public procurement is carried out in a fair, transparent and non-discriminatory manner while promoting a competitive local industry. However, several reports relating to irregularities in the manual procurement processes were leveled against Public Entities (PE) and other stakeholders involved directly or indirectly in procurement were among the findings of the reforms. These allegations include inefficiency, delay in procurement due to long procurement processes, high cost of projects, lack of fairness, transparency, and non-discrimination in the selection and award of government contracts, as well as inflating contract figures according to PPA monitoring and evaluation of procurement performance report in (2009). According to PPA (2019), Ghana, E-Government Procurement (e- GP) also referred to as E-Government Procurement (e-GP) is defined as a comprehensive process in which governments use IT Systems (including the Internet) to establish agreements for the acquisition of products or services. Electronic procurement (e-procurement) implementation is a strategy by organizations aimed at reducing administrative and logistic complexity in the purchasing process (Van Weele, 2005).

It is obvious that the benefits of e-procurement implementation that Ghana Health Service would benefit are numerous and can only be achieved by the total commitment of senior management interest, establishing e-procurement legal framework regulation by the government to serve as a legal mandatory for all public institutions to implement it, the need for government to commit resources in the ICT and IT infrastructures development and also train the human resource personnel to manage the e-procurement project effectively and efficiently hence proposing that e- procurement management be implemented in the Ghana Health Service and other public institution.

1.2 Objectives of the Study

The main objective of the study is to assess the impact of electronic procurement implementation and its challenges in some selected health facilities in the Ashanti region of Ghana.

2.0 LITERATURE REVIEW

2.2.1 Theoretical framework

New Public Management Theory (NPM)

The NPM theory is a theory that advocates that governments as well as procurement entities in the modern era should be proactive, responsive, customer-oriented, competitive, and efficient as well as result oriented. According

to the theory, the procurement entity will have to adopt mechanisms by integrating well qualify constituted procurement professionals and ICT basic tools to manage procurement and other ways of doing business that has been originally linked to the success of private sector business, so that efficiency, effectiveness, accountability and sustainability of the public sector organisation procurement and contract management can be ensured. In effect, one of the key ways by which organisations achieve efficiency and competitiveness is through the implementation of ICT systems and highly skilled procurement professionals in formulation, implementation/execution, and contract administration works activities (Geentanjali, 2011). Among other things, the adoption of IT systems for procurement will go a long way in helping the public sector organisation and the government as a whole in improving service delivery of public procurement policy and more importantly helps in ensuring transparency and efficiency in the procurement process and contract management (Ramadhani KY, Adawiyah WR, Novandari W 2021). Essentially, through the adoption of e-procurement, the sustainability of public sector organisations will be ensured because ICT and qualified procurement team composition in procurement and contract management have the potential to reduce transaction cost, and also resulting in the making of faster and well-informed decisions thereby ensuring value for money and total cost of ownership.

Resource-Based View Theory

The Resource Based View Theory focuses on a firm's resources and capabilities as determinants of competitive advantage and performance in the area of procurement management and contract management. This theory was introduced by Wernerfelt (1984) whose study concluded that the competitive advantage of an entity largely depends on its resources and its ability to exploit them. It further explains that these resources are embedded in the organisation's business processes (Ray et al., 2018). The theory assumes that these resources are heterogeneous (they differ from one company to another e.g. skills and capabilities) and immobile (they do not move from company to company at least in the short run). Another view pointed to the fact an effective and efficient use of a firm's internal resources is very paramount which can lead to sustainable competitive advantage (Miller, D., 2019). When ICT is embedded in specific organisational processes such as procurement, benefits such as cost savings, and elimination of paper and delays can be achieved. Processing transactions online through the use of ICT can lead to increased transparency but also exposes the organization to competitive threats (Zhang, et al., 2016). Also, the synergistic benefits achieved through an integrated system provide the sources of sustained competitive advantage for a firm (Shan, et al 2019). This theory greatly supports the variable of electronic procurement technical support staff since they can have unique skills and capabilities which if effectively and efficiently used can lead to outstanding improvement in procurement performance and can be a source of competitive advantage. It must be noted that proper management of electronic procurement technical support staff alone, may not enhance the needed improvement of procurement performance but rather need to integrate with the other factors such as information technology, and workable electronic procurement policies among other factors.

2.2.2 Empirical Literature Review

2.2.3 Web-based e-Procurement for Health Facilities

According to Andrew Allen, (2021), Ghana claimed to have become the first country in West Africa to establish an e-procurement system for public sector purchasing. This however seems to be taking somewhat longer than expected. The electronic system aims to curb irregularities and unnecessary costs in the procurement process and guard against cartels being formed to bid for public contracts, (Mante,2021). The Ghana Revenue Authority and the Social Security and National Insurance Trust have full visibility into the system to ensure companies taking part in public tenders are fully up to date with paying taxes and social security. A benefit of the digital platform for suppliers should be swift payments through the integrated financial management information system. Mante, (2021) stated that e-procurement can only be implemented successfully when Ghana health service institutions have been able to establish a web-based infrastructure to support it to enjoy its numerous benefits. This would serve as a common web-based site where all the stakeholders of public procurement can have access to the site at any time to transact business with the government. This will enable suppliers, contractors, consultants, and the internal organisation procurement actors to easily access the site for tender documents and be able to conduct tendering online to save cost and time hence the objectives of green logistics would be achieved. Although, the use of a Web-based e-procurement system is thought to have implications for enhancing the capability in conducting the task of completing the procurement, and in particular for reducing information asymmetries and changing inter-organizational relationships (Chin-Fu, Yi-Ming, Wen-HsiungandJau-Jeng, 2008). He stated that there are two main types of web base benefits namely operational benefits and strategic benefits are two major advantages of implementing a Web-based e-procurement system. He again stated that operational benefits arising from lowered transaction costs and heightened information transparency and examples include automating the procurement process, integrating the processes between procurement and engineering, and bringing joint benefits for both trading partners. In contrast, strategic benefits arise through the buyer organization positioning itself to take advantage of opportunities arising in the relationship. These include more advanced information sharing, tighter technology cooperation, and more enhanced ability to recognize and elucidate the benefits of implementing a Web-based e-procurement system. Coordinated procurement and contract management for (ICT) is essential for

achieving coherent and sustainable digital government policies such as e-procurement under the e-government policy. ICT is applied in the works procurement industry to support operations, communicate and share (documents, drawings), and store information for reuse. For instance, a government with a specific procurement policy for ICT projects could achieve significant efficiencies in the procurement process to contract administration. Organisational learning and knowledge-sharing practices in the works procurement contract management industry require social capital and rely on direct communication with the aid of robust ICT software rather than formal traditional reporting systems and intranets (Styhre, 2016). For example, the UTAUT (Unified Theory of Acceptance and Use of Technology) synthesis model (Venkatesh et al., 2012) has been adopted by many researchers and includes four works contract management industry: performance expectancy, effort expectancy, social influence, and facilitation or enabling conditions.

Again, Mäki and Kerosuo, (2020) state that advanced ICT, such as BIM, on delivery sites is said to be hindered by a lack of mobile devices and employees familiar with the use of BIM and this can pose resistance to achieving its usefulness. It is therefore suggested that implementation of BIM requires not only tools but also changes to site managers' daily tasks such as collaboration with designers and encouraging them to participate in design management processes. To effectively and efficiently carry out these tasks, site managers require (i) blueprints, specifications, and other contract documents; (ii) local union and labour activities, safety regulations, labour agreements, quality control, and testing regulations; (iii) work status and progress reports, detailed schedule, critical item action reports,s, and a field diary; and (iv) purchase order control, shop drawing and sample control, procurement status, field labour, back charges, vendor and subcontractor and change order report. Attempts have been made to automate monitoring of labour input using global positioning systems (Navon and Goldschmidt, 2010). Instead, the focus is on ICT being used in current procurement and contract management practice during formulation, implementation, and administration of contracts to support monitoring and problem solving, that is, technologies commonly used works projects for these purposes such as laptops, mobile telephones, and tablets.

2.2.4 Effect of ICT on Procurement and Contract Administration

Information integration is a key component in many automatic replenishment programs (ARP), especially in inventory management. For instance, initiatives such as Vendor Managed Inventory (VMI) and collaborative planning, forecasting, and replenishment (CPFR) are based on an increased level of automation in both the flow of physical materials, goods, and other associated information between companies to improve the efficiency in the supply chain entire system. Hotterbeekx (2013) also reckoned and suggested that basic software such as enterprise resource planning (ERP) systems are essential for supporting internal information sharing among the supply chain actors mostly between the suppliers and the procurement department. Externally, inter-organizational information systems (IOIS) constituting automated information systems shared by various firms can be used to support information-sharing with customers and suppliers. It is therefore obvious to state that ICT contributes to improved communications patterns, increased demand for coordination of joint activities and new organisational structures through its ability to store transmit and process information, and speed up inter-organisational activities. ICT enables organisations to decentralise operational procurement processes and centralise strategic ones due to higher transparency. Naibei (2020) also added that ICT provides a collaboration platform by allowing customers and suppliers or contractors to work together on product design using specialist ICT design tools.

2.2.5 Procurement Performance

Procurement is part of a supply chain function that has developed considerably over time; at the outset, it was wholly a clerical function until Porter (1980) impelled firms to think of procurement as a strategic function rather than an administrative one in his five forces model where he proved supplier and buyer power as two vital forces for competitive advantage. Today, procurement is considered a strategic value-adding and profit maximisation activity instead of a purely cost-oriented transactional function. Procurement activities are not only operational but also include risk management, competitive intelligence continuous improvement, and technological innovations. It measures how well a firm’s procurement function achieves set goals and objectives through efficiency, effectiveness, transparency, and quality of the products (Namukasa, J., 2017). Other scholars define procurement performance as the ability of the procurement function in the organisation to achieve its mission through sound management and strong governance (Oluka, P.N. and Basheka, B.C., 2014). This can be enhanced through procurement excellence by aligning the procurement objectives with the corporate objectives, supplier development, and collaboration, and leveraging supply markets smartly, risk management is increasingly becoming an important factor in delivering efficient operations within successful companies. However, looking deeper, adequate measurement is a big issue. It is obvious that entities that aim at securing efficiency and effectiveness in their procurement need to staff the procurement department with highly qualified and competent personnel and provide the necessary ICT infrastructure to improve procurement performance. This can be done by reengineering existing work processes so that there are fewer breakdowns, bottlenecks, and redundancies on the job. Procurement performance can be determined by examining aspects such as delivery, flexibility, quality, and cost (Shalle et al., (2014).

Again, Namukasa (2017), indicates that procurement performance in terms of compliance with the

procurement guidelines leads to minimisation of waste, transparency, audit trail, and ease to trace payments. Procurement performance should be able to reduce procurement lead-time from the bid preparation time, award and ordering time as well as execution period and payment time (Harland et al., 2007). According to Muriuki, J.I., (2021) increased information sharing through the use of ICT improves monitoring and supervision and timely tracking of delivery status such as shipment performance of suppliers. The dependent variable was measured by determining the effect of ICT on the following procurement performance indicators: lead time, transparency, contract management performance, and supplier performance. Procurement lead time consists of the bid preparation time, award and ordering time as well as goods receipt and payment time (Harland et al., 2007). According to Silver et al. (2008), lead time which he defines as the period between order placement, order processing, and inventory receipt can lead to improved service delivery. With the aid of ICT and the project team, the project delivery can be Improved from procurement performance to contract administration in conformance to specifications and flexibility in responding to unexpected changes in demand. It is of the view that transparency in procurement involves the advance publication of procurement plans; advertisement of tender notices; bidder participation in the tender opening process; publishing of procurement opportunities; publishing clear and comprehensive bidding documents and publication of contract awards and prices paid among others. According to Muriuki (2021), procurement performance can be defined as the process of quantifying efficiency, effectiveness, transparency, and acquisition of quality goods and services.

2.2.6 Perceived Benefits with e-procurement Implementation

An e-procurement solution provides access to, and easy purchasing from, a catalogue of many different suppliers while eliminating paperwork, automating the approval process, and enforcing the purchase policies that apply to each Buyers' supplier according to (Asiamah, G.P.D.A.K. and Emmanuel, A., 2015). With the number of cost-effective e-procurement solutions available today, procurement entities like Ghana Health Service cannot afford to miss the opportunity to increase profits for their organisations for the procurement of drugs and other materials to enhance quality health service delivery. Companies using e-procurement report savings of 42% in purchasing transaction costs associated with less paperwork which translates into fewer mistakes and a more efficient purchasing process. Also, the e-procurement system will enable firms to be more efficient and accurate to capture and aggregate how much they are spending corporate-wide in various purchasing product areas, allowing the firms to bring what may be significant buying power leverage to market. The following are some of the benefits that an organisation can be realised through the adoption of e-procurement according to (Aberdeen benchmark groups in 2022).

2.2.7 Challenges and Barriers to e-Procurement Implementation

Even though much progress can be made in the implementation of e-procurement in the Ghana Health Service, significant challenges to successful e-procurement implementation are as follows: According to Jalal

Faraj, S.A., (2016), .e-procurement implementation encounters some challenges and barriers such as the following; lack of skilled personnel; inadequacy of it and networking infrastructure; user adoption, budget and policy support, legal and regulatory framework, lack of top management interest; set-up costs;

3.0 METHODOLOGY

This begins with the study area; population and sampling techniques, as well as analytical procedures to be presented. It further dealt with the presentation of the data gathered, sampling techniques, instruments for data collection, and sources of data. The population for this study covers the public sector health facilities which comprise those who are involved in public procurement activities in the Ghana Health Service of Ashanti Region. The research covered a target population of over thirty-one (31) direct stakeholders and (4) health institutions in the Ashanti region. The research study used a deductive research type to test the existing theories in procurement and contract management as stated in the literature review.

The researcher used a census survey method which is the process of administering all members of the population for analysing. It provided intensive and in-depth information covering many facets of the problems

The study purposively selected four public hospitals, medical suppliers, and PPA to represent procurement activities in the Ashanti Region. The study involved members of entity tender committees, tender evaluation panels, procurement and management staff of Health Entities (HEs), suppliers/contractors and consultants as well as staff of the Public Procurement Authority. The main research instrument used was the primary data collection method where questionnaires were administered using both open and closed interviews, and field observations. Also, the research study used the secondary data collection method by reviewing various publications of foreign and Local Origin, books, journals, articles, newspapers, and reports obtained from libraries, the PPA website, Public Entities, and the internet on the subject to obtain additional information to answer the questions set in the problem definition.

Finally, the research study employed both quantitative and qualitative methods in the data analysis hence the Statistical Package for social science (SPSS) and Excel would be used in the data entering and analysis of the data collected. The findings from the study gave credence to its validity and reliability. Neuman (2006) refers to it as the ability to generate findings beyond a specific study. The data gathered directly addressed the issues raised in

the research questionnaires. In this regard, the respondents of the questionnaires were treated with tact and the questionnaires were administered meticulously so as not to influence any response.

4.0 PRESENTATION OF FINDINGS, ANALYSIS AND INTERPRETATION

The research study was conducted to find out first if the institutions have a well-functioned procurement unit with qualified staff and whether they have knowledge of the e-procurement systems. The respondents were also asked to indicate whether they have adopted e-procurement systems or intent to implement it. From the research data, it was indicated that the majority of the health institutions; hospitals, the suppliers of the medical have not adopted the e-procurement system except PPA Ghana the regulatory body that has implemented the e-Government project and yet to enforce it to all public sector procurement entities. This is an indication that the majority of the respondents that participated in this study have a fair knowledge of e-procurement systems through seminars, the Internet, and colleges/universities.

Several factors can determine the successful adoption of e-procurement systems. These are the most important factors that a firm needs to pay attention to in their efforts of implementing electronic procurement systems and practices aimed at improving their competitiveness. The respondents were asked to indicate the extent to which they agreed with various factors that contribute to the success of e-procurement implementation in the Ghana health service using a four Likert scale of 1= Agree strongly; 2 = Agree; 3= Disagree and 4=Disagree strongly.

Table 4.1 factors influencing e-procurement Implementation

Factors	**Responses**				
Factors for e-procurement Adoption	**Strongly Agree**	**Agree**	**Disagree**	**Disagree strongly**	**Total**
Organisational factors	17	7	2	1	27
Environmental factors	15	11	0	1	27
Senior management Posture	18	7	2	0	27
Capacity building for all levels of management	22	3	2	0	27
Technical factors	20	4	2	1	27
Stakeholders involvement	20	5	2	0	27
Total	112	37	10	3	162
Percentage(%)	69.1	22.8	6.2	1.9	100

Source: Field Work, 2022

The research study revealed that 69.1% admitted strongly that organizational factors, environmental issues, senior management interest, capacity building for all levels of management, technical factors such as ICT and IT infrastructure, and stakeholders involvement are critical success factors to Ghana health services to consider during the implementation of e-procurement. Another thirty-seven (37) respondents representing 22.8% agree that there is a need to be considered all these factors by Ghana Health Service when adopting e-procurement systems. Also, ten (10) respondents representing 6.2% believe that there is no need for Ghana health service to consider these factors before implementing the e-procurement system whiles three (3) representing 1.9% respondents disagree strongly that there is no need for these factors to be considered by Ghana health service when implementing the e-procurement system.

4.1 Assessing the Perceived Benefits and Challenges/Barriers of E-Procurement Implementation in the Ghana Health Service

The research study was conducted to assess the perceived benefits that Ghana health service would gain from the e-procurement implementation such as cost reduction and cycle time, increases productivity, improves procurement process, and strengthen supplier relationships. Respondents were asked to select the most suitable benefits of e-procurement implementation from the possible answers.

Table 4.2 shows the benefits of e-procurement implementation

Respondents	Cost reduction and cycle time	Reduces corruptions	Complicates procurement process	**Total**
PPA Staff	2	0	0	**2**
Hospital Management And Staff	13	2	0	**15**
Medical Suppliers	5	4	1	**10**
Total	20	6	1	**27**
Percentage (%)	74.1	22.2	3.7	**100**

Source: Field Work, 2022

The data revealed that twenty (20) respondents from the hospital Staff, PPA Staff, northern zone, and Medical Suppliers out of twenty-seven (27) representing 74.1% believed that cost reduction and cycle time are one of the most suitable benefits of e-procurement implementation for Ghana Health Service. Meanwhile, only six respondents out of the twenty-seven chose reducing corruption as one of the benefits of e-procurement implementation for Ghana health service representing 22.2% whereas only one(1) respondent representing 3.7%believes that the benefits of the e-procurement system complicates the procurement process.

4.2 Assessing the strategic challenges of e-procurement implementation in the Ghana health service

The research study was conducted to find out the challenges that Ghana's health service would encounter during the implementation of e-procurement systems. The research study stated all the possible strategic challenges of e-procurement implementation with one odd answer and expected the respondents to select the odd answer that is not necessarily a challenge of e-procurement implementation.

Table 4.3 shows the challenges of e-procurement implementation

Respondents	Lack of skilled personnel	Inadequacy of IT and ICT infrastructures	Legal and regulatory framework	Operational level management	Total
PPA Staff	0	1	0	1	2
Hospital Management And Staff	2	2	2	9	15
Medical Suppliers	0	1	4	5	10
Total	2	4	6	15	27
Percentage (%)	7.4	14.8	22.2	55.6	100

Source: Field Work, 2022

The data revealed that two (2) respondents from the hospital Staff, PPA Staff, and the Medical Suppliers out of twenty-seven (27) representing 7.4% believed that lack of skilled personnel is one of the odd answers; meaning is not rather the challenges of e-procurement implementation for Ghana Health Service. Only four(4)respondents out of the twenty-seven (27) chose inadequacy of IT and Network infrastructure as not one of the challenges of e-procurement implementation for Ghana health service representing 11.1%, whereas six(6)respondents representing 22.2%believes legal and regulatory framework is not a challenge of e-procurement implementation for Ghana health service, whiles fifteen(15) respondents representing 55.6% believe that lack of skill personnel, the inadequacy of IT and Network infrastructure and legal and regulatory framework are the strategic challenges of e-procurement implementation for Ghana health service except operational level management which is not necessarily a challenge of e-procurement implementation for Ghana health service.

4.3 The various barriers that hinder e-procurement implementation in the Ghana Health Service

The research study was conducted to find out the most likely barrier that Ghana's health service would encounter during the implementation of e-procurement systems. The research study stated the possible barriers that could also hinder the e-procurement implementation in the Ghana health service but one of the possible answers is the most likely barrier to e-procurement implementation in the Ghana health service

Table 4.3 shows the barriers to e-procurement implementation

Respondents	Cumbersome procurement Process	Set up cost	Top Management posture	Total
PPA Staff	0	2	0	2
Hospital Management And Staff	0	11	4	15
Medical Suppliers	3	7	0	10
Total	3	20	4	27
Percentage (%)	11.1	74.1	14.8	100

Source: Field Work, 2022

The study aimed to identify the challenges various barriers that may be encountered by the institutions in their attempt to implement the e-procurement program.

The data revealed that three (3) respondents from the hospital Staff, PPA Staff, and Medical Suppliers out of twenty-seven (27) representing 11.4% believed that the cumbersome procurement process is one of the most likely barriers that could hinder the e-procurement implementation for Ghana Health Service, whereas twenty (20) respondents out of the twenty-seven (27) representing 74.1% believe that setup cost is the most likely barrier that can seriously hinder the e-procurement implementation for Ghana health service and only four (4) respondents representing 14.8% believes that top management posture is rather the most likely barrier of e-procurement implementation for Ghana health service.

4.4.Assessing the Various Risks Associated With E-Procurement Implementation in the Ghana Health Service

The research study was conducted to find out the possible answer that is not one of the risks that Ghana health service institutions would encounter for e-procurement implementation. The research study stated the possible risks that Ghana health service would encounter in the e-procurement implementation except for one possible answer that is not a risk factor for the e-procurement adoption in the Ghana health service institutions.

Table 4.4 shows the risks associated with e-procurement implementation

Respondents	Procurement process risks	Technology risk	Effective and efficient contract Management	Internal business risks	Total
PPA Staff	0	1	1	0	2
Hospital Management and Staff	0	3	10	2	15
Medical Suppliers	1	1	6	2	10
Total	1	5	17	4	27
Percentage (%)	3.7	18.5	63	14.8	100

Source: Field Work, 2022

The data discovered that only one (1) respondent from the Medical Suppliers out of twenty-seven (27) representing 3.7% believed that procurement process risk is not one of the risks that can hinder Ghana Health Service when implementing the e-procurement system whereas five (5) respondents out of the twenty-seven (27) representing 18.5% from the PPA staff, Hospital staff, and medical suppliers believe that technology risks are not one of the risks that can seriously affect the e-procurement system implementation for Ghana health service whereas seventeen (17) respondents representing 63% believes that effective and efficient contract management is rather one of the benefits but not the risks of e-procurement implementation for Ghana health service.

4.5 Proposed ways for effective and efficient e-procurement implementation for the Ghana health service institutions by the respondents.

The data collected reveals that e-procurement management systems can be effectively and efficiently adopted by all stakeholders of Ghana's health service through political will and government commitment to e-procurement infrastructure, capacity building for all stakeholders to acquaint themselves with how to manage it. The respondents also proposed that there is a need to educate and train the e-procurement management and staff as to how, when, and what e-procurement management is all about, its benefits, and the various challenges/barriers and risks that are likely to hinder the smooth operation of the e-procurement management system. The majority of the respondents stated that the e-procurement management system can effectively be adopted by Ghana health service through top management interest and adequate resource investment in the provision of IT and ICT network infrastructures for all the procurement entities of Ghana health service and also the reliable power supply to enable stakeholders effectively and efficiently operate the e-procurement system. The data also reveals that legal and regulatory frameworks should be put in place to serve as legal backing and mandatory for all stakeholders of the Ghana health service procurement entities to adopt and practices the e-procurement management system and ensure that skilled personnel with in-depth knowledge in IT and ICT is employed to effectively and efficiently manage the e-procurement system.

The research study is of the view that all these proposed ways for the smooth adoption of e-procurement should be put in place by the Ghana health service to realise the positive impact of the e-procurement system such as cost reduction, increases productivity, improves suppliers relationship, simplifies the procurement process and cycle time.

5.0 FINDINGS, SUMMARY, CONCLUSION, RECOMMENDATION

5.1 Summary of Findings

Based on the outcome of the research, it can be concluded that the e-procurement system has not yet been implemented by Ghana health service institutions even though most of the respondents have heard of it and have little knowledge of e-procurement. The respondents were able to state where they have heard of e-procurement such as through the Internet, seminars/workshops, and whiles they were in college/universities, and stated vividly that their institutions have planned to adopt this e-procurement management system. However, constraints such as organisational, managerial, technical issues environmental factors, set up cost, management interest, requisite skill personnel, availability of IT and ICT infrastructures and the legal frameworks influence the effective and efficient adoption of the e-procurement management systems.

5.2 Conclusions

Given the findings made from the study to implement the e-procurement management system for Ghana health service, the following conclusions were made; First, the creation of a procurement department/unit in all the

procurement entities in the Ghana health service with qualified procurement staff. The various factors such as organisational, environmental, managerial, and technical factors should be considered when implementing the e-procurement management system. Ghana health service authorities must invest adequate resources in the provision of IT and ICT network infrastructures for all the Ghana health service procurement entities for the smooth adoption of the e-procurement system. The authorities need to also educate and train all stakeholders of Ghana's health service on the e-procurement management systems, its impact, strategic challenges/barriers, and the risks associated with the e-procurement management system. Moreover, the authorities of Ghana Health Service should necessitate action of establishing a legal and regulatory framework to give legal backing and to serve as a mandatory requirement for all procurement entities to adopt the e-procurement management system. The current public procurement Act 663 (Act 2003) should also be amended for the e-procurement system to have an opportunity to operate in the various public procurement entities. Importantly, the top management and other relevant stakeholders of Ghana's health service institutions must show interest in the e-procurement management system to ensure its effectiveness and efficient implementation. The requisite technical personnel should be employed by all the procurement entities to successfully and professionally manage the e-procurement management system.

In conclusion, the implementation of an e-procurement management system in the Ghana health service would encounter a lot of challenges and risks such as set-up costs, lack of skilled personnel, the unwillingness of management interest, inadequate IT and ICT infrastructures and lack of a legal and regulatory framework to give it legal backing, however, the e-procurement implementation will be of beneficial to streamline the procurement process, reduces material and labour cost as well as operational cost, reduces cycle time, enhances fairness and transparency, ensures accountability, reduces corruption, increase productivity, improves supplier's relationships, and improves contract management and therefore should be recommended.

5.3 Recommendations

In light of the discussions, findings, and conclusions, the following recommendations are hereby coined;
First of all, adequate resources should be invested by the authorities of Ghana Health Service in the acquisition of IT and ICT infrastructure, creating common web base sites and reliable power supply to provide reliable and constant internet connectivity to ensure timely and accurate information sharing about procurement activities for all stakeholders. The stakeholders of the Procurement entities, such as the Procurement Staff, Tender Committees, Tender Review committees, Tender Evaluation Panels, Suppliers/Contractors, Consultants, Donors, customers, and community members. This will also enable stakeholders of Ghana health service to tender online; make online payments, and have online visibility about the status of delivery, monitoring and easy tracking of orders online. The research study was again of the view that legal and regulatory framework should be given to the e-procurement management project for it to have a legal backing to enforce all procurement entities especially Ghana health service facilities to adopt the e-procurement system and sanctions should be level against any individual or procurement entities that fails to conduct procurement activities through the electronic means. The regulatory body such as the PPA should supervise all these procurement entities to ensure efficient and effective operation of the e-procurement project. The research study is, again, recommending that the various stakeholders of Ghana's health service should be educated with enough information to fully understand what e-procurement is about, the benefits that the institutions stand to gain, and the challenges and risks likely to affect e-procurement management adoption. Additionally, enough resources should be invested towards capacity building to all levels of management as to how to manage the e-procurement management system effectively and efficiently to achieve cost and cycle time reduction and also value for money. Most importantly, authorities of the Ghana health services should demonstrate their keen interest and strong commitment to the implementation of the e-procurement management system effectively and efficiently. Finally, the research study is recommending that Ghana's health service as a matter of agency employs skilled technical personnel to successfully and resourcefully manages the e-procurement management system. The smooth operation of this project relies mostly on the kind of personnel operating it hence there is the need for Ghana health service to consider employing only the requisite technical personnel to manage the e-procurement effectively.

5.4 Further studies

Many studies including the present studies had limitations in achieving the study objectives. Firstly, the present study focused on some selected health facilities in the Ashanti region of Ghana.. This means that other health facilities in the other region were not included in the research study. In effect, the generalisation of the present findings about other health institutions might not entirely be appropriate and conclusive. In this regard, the study is recommending that future research studies can expand their scope to cover other health facilities especially the public health institutions in other regions of Ghana that involve in huge procurement related activities to ascertain if there will be any differences in the findings results.

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