



DETERMINING THE EXTENT OF IT USAGE IN PUBLIC PROCUREMENT PROCESSES

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Statement of the Problem

Regardless of the effort by the governments of developing countries, like Ghana and development partners like World Bank to improve the performance of the procurement function, public procurement is still marred by inefficiencies and effectiveness. This has resulted in unnecessary high operational costs, uncoordinated business activities, and failure to attract and retain experienced and skilled personnel in the procurement positions, thus affecting procurement performance (David, 2002; DCD/DAC, 2003; NSSF, 2005; Atkinson, 2006). This research work, therefore, seeks to investigate the effect of IT on the public sector procurement performance. Knudsen, (1999) also suggested that procurement performance starts from purchasing efficiency and effectiveness in the procurement function in order to change from being reactive to being proactive to attain set performance levels in an entity. The procurement system at the Judicial Service is marred with inefficiencies, delays, transparency and effectiveness which has affect procurement performance. The use of information technology has helped in achieving improved performance as practiced in the private sector which has yielded greater results (Aberdeen, 2005). The research work is therefore to determine its effect on procurement performance in the Judicial Service which lacks efficiency and effectiveness in the execution of its procurement activities. Information Technology which is an enabling tool to aid in the performance improvement is described to incorporate computer hardware, software, and communication systems, and the workforce and resources devoted to supporting the facilitation of information management, that is, the aggregation, analysis, and dissemination of task-related information (Weill, Peter 1992). The literature, therefore, supports that IT in organisational operations gives the organisations abilities to track processes with the use of technology to ensure every aspect of the operation is monitored in other to make improvements when necessary (Lee and Whang, 2001). This has therefore called for the researcher to investigate the Effect of Information Technology on Public Sector Procurement Performance in Ghana by using the Judicial Service as a case study.

KEYWORD: Stakeholder Management, Procurement Administration, Procurement Process

INTRODUCTION

For decades now procurement performance has attracted immense attention from practitioners, academics, and researchers due to poor performance resulting from non-adherence to proper processes and procedure. The Public Sector is used to the manual procurement system which has led to delays and lack of transparency, efficiency, and effectiveness in operation. The procurement function has not been given the recognition it deserves in developing countries, in most public entities, regardless of the effort by partners like the World Bank, the International Trade Organisation, the United Nations Conference on Trade and Development, the World Trade Organisation and, others. This could be deliberate or sheer ignorance on the value the procurement function could contribute to any organization (Telgen, Zomer, & de Boer, 1997).

The emergence of technology in modern businesses has now become a trend that has led to increase benefits in many private organisations (Aberdeen, 2005). Over the past decades, Public Procurement has gained much consideration amongst developing

nations. In most developing countries, the procurement function is transitioning from a clerical non-strategic unit to an effective socio-economic unit that is able to influence decisions and add value (Knight, Harland, Telgen, Thai, Callender, & Mcken, 2007). None the less, most developing countries are facing a problem of rapid changes in public procurement requirements. The changes are impacting how the procurement function performs its internal and external processes and procedures in order to achieve its objectives. The ability to realize procurement goals is influenced by internal forces and external forces (Mlinga, 2009).

Procurement spending plans in developing nations represent around 50 percent of government expenditure globally (Mlinga, 2009), numerous governments have undertaken a number of reforms in the area of Procurement systems to streamline and harmonize legitimate and institutional structure. In recent years, the role of procurement has developed into a sophisticated function in most successful private organizations. Information technology in procurement is therefore seen to accelerate business changes.



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It takes into consideration making change, utilization, and information of tools, machines, procedures, specialties, systems, or techniques for organizations, to take care of an issue, enhance a previous arrangement, accomplishing an objective, or perform a particular capacity in connection with procurement and the procurement process (Aberdeen, 2005). The researcher, therefore, seeks to investigate the effect of information technology (IT) on public sector procurement performance in the Judicial Service of Ghana. Procurement can be extensively seen as the acquisition of goods or services at the best possible cost of ownership, regularly in the right amount and quality, at the right time, in the perfect place and from the right source for the immediate benefit or utilization by, organizations, people, and corporations at large by means of an agreement (Lysons and Farrington, 2006).

Public Procurement, as indicated by the Public Procurement Act, 2003 (Act 663), is 'the procurement of goods, works and services at the best possible total cost of ownership, in the right amount and quality, at the right time, in the right place for the immediate advantage or utilization of governments, organizations, or people, by and large through a contract' (PPA Module, 2007). As such, Public Procurement is the procedure by which organisations get products, works, and services utilizing public funds. It is a comprehensive process that keeps running from proper procurement planning, budget allocation, bids invitation, bid evaluation, the award of the contract, contract management, and performance measurement, monitoring, auditing, and reporting.

The Public Procurement Act, 2003 (Act 663) is a thorough enactment intended to wipe out the deficiencies and authoritative shortcomings which were natural in Public Procurement in Ghana. A study by the World Bank (2003a) reported that around 50-70% of the national spending plan (after individual payments) is procurement related. Consequently, an effective Public Procurement system could guarantee esteem for cash in government use, which is vital to a nation confronting tremendous formative difficulties.

Despite the fact that the Public Procurement Act, 2003 (Act 663) has realized some rational soundness into public procurement practices, incorporating the use of information technology practice into public procurement is seen as a modern and more effective way to achieving efficiency and transparency which is been looked at by the researcher.

In public sector procurement, the procurement processes, guidelines, and exchanges must be spelled out and made accessible to people in general and in addition to potential suppliers in order to achieve procurement performance (Ameyaw et. al., 2012).

The researcher, therefore, looked at the various systems, tools, and equipment that will aid in the achievement of the research objectives. The researcher used the areas of Procurement, Logistics, Finance, Works, Projects and Reforms and the Internal Audit Departments through a purposive sampling technique of 150 sample size to collect information for the study. As the procurement capacity of numerous organisations is turning out to be more key, procurement technology takes into account a procedure re-outline that makes the procurement process open with enhanced responsibility, transparency and reporting abilities; in this manner accelerating the procurement cycle and giving more noteworthy access to more open doors for suppliers (CIPS Technology in Purchasing, 2012).

SCOPE OF THE STUDY

The study provides a picture of the effect of information technology on public sector procurement performance while focusing on the Judicial Service of Ghana which was carried out for a period of six months. The study concentrates on stakeholders of the Judicial Service who include; suppliers, service providers and employees of the Judicial Service through the administration of questionnaire from a sample size of 150 with a target population of 200 staff and service providers. The Judicial Service of Ghana is a Public institution that can use information technology to reduce cost and lead time in all its procurement activities similar to all other public institutions and therefore identified problems will not differ as might exist in other public institutions. The research was conducted through the administration of a questionnaire to solicit information.

A. Significance of the Study

The expectation of the researcher was that by the end of the study, the independent variables under the digitally enabled procurement resources would be accessed to determine their effect on procurement performance. But much concentration was given to the Judicial Service in order to determine the level of their procurement efficiency. The explanation of the study lies in the significance of the utilization of IT in the Procurement process to improve performance and its progressively outstretching influences on guaranteeing viability, proficiency and all the more



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significantly diminishing corruption. It is in light with this and others that this study is to see if technology in procurement has had an impact on enhancing procurement performance. The study will serve as a guide to researchers, procurement professionals and supply chain partners like suppliers and contractors who have enthusiasm for the utilization of information technology in public procurement to help their work.

B. Limitation of the Study

The research work like any other research work was faced with challenges of time and money since the researcher had to combine office work with gathering information for the study which involved the use of money for transport. Most especially getting the respondents to answer the questionnaire, it became a challenge since some of them were always busy hence, getting them to answer the questionnaire became a challenge. Also, the study was limited to only one institution and it is therefore recommended that future research work should consider more than one institution. The researcher, however, was able to find time to gather more information for this research work.

METHODOLOGY OF THE STUDY

This research work like any other socially constructed activity exists in a context dealing with principles and procedures in research, therefore there is the need to indicate the strategy and methods of collecting and collating data and information to be used. The study considered the Resource Base View theory to collect data where digitally enabled procurement resources (procurement process, partner support and IT infrastructure, Managerial and staff skills) was used to achieve procurement performance. This study used quantitative methods of research, and strategies such as questionnaires and field research to assess the target group understanding of technology, hence the use of mixed method techniques with primary and secondary data collection. Review of related literature on the effect of information technology and tools from SPSS and Ms Excel was used.

The study sample represents the functional departments that work within the supply chain like Logistics, Finance, Projects and Reforms, Internal Audit and Works Departments etc. that are considered support staff to the Judiciary who make up the Judicial Service participating in this study through purposive sampling technique to assess the effect of information technology on public sector procurement performance in Ghana. It is therefore expected that these initiatives will lead to the formulation of strategies that will enhance or improve performance in public sector

procurement. These will result in sufficient discussions to conclude with practical and achievable recommendations for implementation.

LITERATURE REVIEW

A. Overview of Procurement

Procurement is about all the activities involved in obtaining materials and services, managing their inflow into an organization toward the end user (Zenz and Thompson, 1994). This includes obtaining manufacturing supplies and semi-finished products for an assembly line as well as obtaining paper and pencils for a bank (Hough and Ashley, 1992). Situated between an organisation's internal customers in need of materials to satisfy their need and external suppliers providing goods and services, this function needs to connect various holes so as to simultaneously manage external and internal relationships and to balance participant's diverse objectives.

Purchasing is about the procedures of acquiring, subsequently identification of need, sourcing and selecting of a supplier, negotiating prices and other vital terms and making subsequent follow-ups on delivery, procurement is generally seen to incorporate viewpoints, for example, stores management, traffic, incoming inspection and salvage (Hugo et. al.,2002). Lambert and Stock, 1992 additionally say that, purchasing fundamentally refers to the genuine procurement of materials and whatever other exercises connected with the buying process. Procurement is more extensive in degree and incorporates buying, activity, warehousing and getting materials. Therefore for the purposes of this study the resources that could be used to aid procurement performance in a digitally enabled procurement system will be looked at.

Procurement can also be described to mean a process whereby organisations address their needs for goods, services, works and utilities in a way that accomplishes value for money on a whole life basis regarding the generation of benefits not only to the organisation, but as well as to society and the economy whilst minimizing harm to the environment (Sustainable Procurement Task Force, UK; 2009).

The Public Sector which is mostly synonymous with government refers to the Ministries, Departments and Agencies of Government. The main sources of funding for the public sector which is the primary implementer of government projects are consolidated funds of government, taxes, loans from institutions, for example, the World Bank and the International



Monetary Fund, and grants from international donors and other benevolent considerate organisations.

Public procurement is therefore about undertaking procurement activities which are under the jurisdiction of government or any other public sector organisation and with the use of public funds (Ameyaw et. al., 2012). The topic under study which is looking at how government resources put together with skilled labour through the influence of technology to improve processes considers the processes of procurement efficiencies to achieve the objective (procurement performance).

B. Public Procurement - Perspective on Developing Countries

As per Hunja (2003) in numerous developing countries, Public Procurement has not been seen as having a strategic effect in the management of public resources. It was to a great extent regarded as a process oriented, function often implemented by non-professional staff of the purchasing offices. Therefore, little effort was made to guarantee that the strategies, rules and the institutional structure overseeing the procurement system were kept up in a way that guaranteed that, public funds were utilized as a part of the most effective and economical approach to delivering the best value for money. Hunja (2003) notwithstanding, showed that this has been changing and it is because of reasons, such as contracting spending plans, the need to battle corruption, and need to achieve good governance by increasing in citizens that, public funds are well spent.

McDonald (2008) demonstrated that the principles directing government procurement and contracting should be accountable and transparent. This does not only limit corruption but contributes to a more accountable relationship between government and citizens. It is additionally essential as a result of the immense sum included. Moreover, in government procurement accounts forms, roughly 4.5% of developing countries (GDP) and governments have a tendency to be the biggest single buyers of goods and services in many countries. A government's utilization of purchasing can accordingly be an extremely significant tool to achieve socio-economic objectives. On the other hand, if procurement reform is done accountable, with a view to achieving both cost effectiveness and more extensive advancement objectives, it can assume a powerful part in poverty reduction (McDonald, 2008).

Public procurement has been recognized as the government activity most vulnerable to corruption. As a major interface between the public and the private sectors, public procurement provides multiple opportunities for both public and private actors to divert public funds for private gain. For example, according to the 2005 Executive Opinion Survey of the World Economic Forum, bribery by international firms in Organization for Economic and Development (OECD) countries is more pervasive in public procurement than in utilities, taxation, judiciary and state capture (OECD, 2007). Furthermore, Falvey et al, (2012) stipulated that developing countries are characterized by relatively low levels of competition and have limited or no formal competition policy. Even though government procurement accounts for a significant share of public spending, the procedures for awarding and monitoring contracts lack transparency.

Therefore measures need to be put in place to promote and/or regulate competition and to make procurement more transparent in order to offer potential benefits in enhancing the competitiveness and efficiency of the business environment. Falvey et al, (2012) have also indicated that the two features that make developing countries prone to anti-competitive business practices are the small or very small number of firms which tends to dominate many sectors because of small markets that can only sustain a few large firms, with the relatively weak institutional framework. Singh (2002) also argued that it is important for developing countries to establish formal competition policies, primarily because of structural changes due to privatization and deregulation.

Many developed and developing countries have embraced changes of their national procurement systems for guaranteeing that public funds are utilized as a part of the most proficient and economical way and that the system delivers value for money. Progressively, it is contended that government recognizes the (money related) savings from a better organised and transparent procurement system (Hunja, 2003). The primary targets of public procurement systems are value for money, efficiency, transparency, probity and accountability (Arrowsmith, 2005). A related issue is the opening up of the procurement business sector to foreign competition, where agreements have been reached at both the regional and international levels. The justification behind opening up public procurement is that protectionist measures out in the public procurement can constitute barriers to trade (and competition) that promote cost



inefficiencies (Cecchini 1992). It is, therefore, important for governments to open up procurement to international competition since competitive practices promote efficiency in public procurement and help public authorities get less expensive, better quality goods and services at lower costs (Falvey et al., 2012).

European Commission (2004) recommended that upgraded competition and transparency decrease costs by around 30%. The open, non-discriminatory and transparent methodology can likewise help the competitiveness of firms working out in the public procurement markets (The Cecchini Report 1988). In any case, while considering the span of contestable procurement in developing countries one needs to consider that a significant part of procurement in Africa, Caribbean and Pacific (ACP) States which is financed through aid and all the time attached to the procurement of goods and services from the donor country that is, regardless of the Government's own approach, procurement is not open (Falvey et al. 2007). In developing countries, for example, Sri Lanka, more control of public procurement is put in the hands of the organization. The Ministers and Government Departments are in charge of meeting the requirement of the government and are given more power to manage the funds however they more often than not remain firmly controlled by central audit unit operated by the Ministry of Finance and Auditors Office (Arrowsmith and Davis, 1998). However, Raymond (2008) demonstrated that such power or control is frequently abused by the government officials in this way achieving tragic outcomes for the nation. The procurement system in Ghana even though it's vested in the hands of the various departments and ministries within the country, their activities is being controlled by the Public Procurement Act 2003 (Act 663) and its amended Act 2016 (Act 914)

C. The Procurement Process/ Cycle

The International Trade Centre, ICT (1990) saw the Procurement process as a progression of steps and activity which culminate in the user getting the right products, at the right time and the right cost. The researcher has identified the procurement process to be of great importance to the achievement of the research objectives and it was therefore considered as part of the areas looked at. The procurement process starts with the identification of need and communication of that need to the procurement department, selection of a supplier/tendering, sourcing, negotiation, ordering, receiving and accepting products and services, receiving invoice and making payment, post contract control, storage and disposal, thus, the diagram below

shows the Procurement Cycle for Goods for an organization.

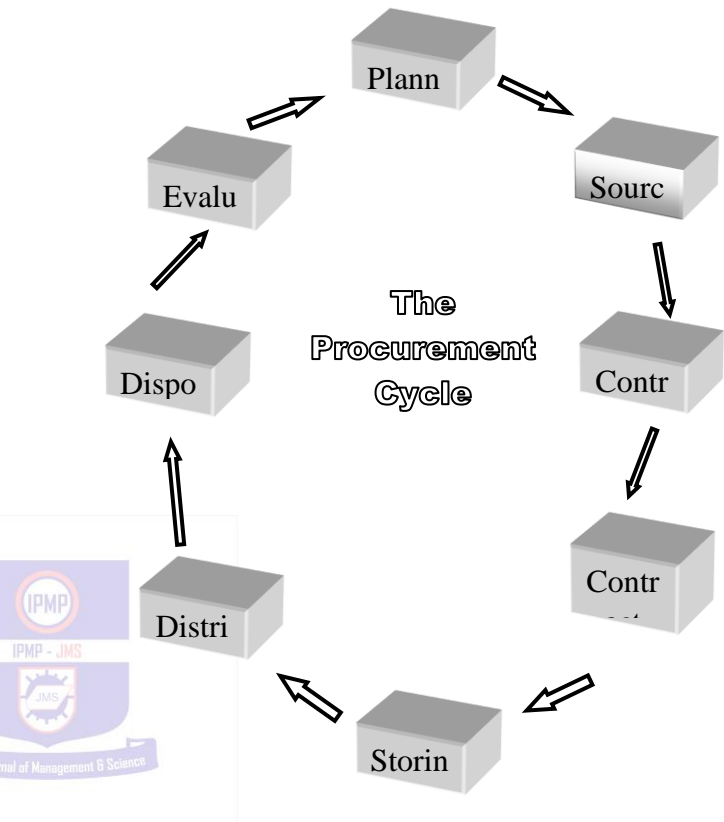


Figure 2.1: Public Procurement Process
 Source: Public Procurement Act 2003, (Act 663)

a. Procurement Planning: This starts the procurement process and refers to the acknowledgment by the user department of the requirement for a specific item, works or services. The identified need is then communicated to the procurement department to start the sourcing of that good, work or services. Public Procurement Act 2003, (Act 663). Planning is seen to be a vital tool for the achievement of every objective hence the need to plan. Procurement Entities/Units in the wake of accepting a need for managing demand from the user department is required to set up a plan for the financial year. A procurement plan ought to give a detailed breakdown of the goods, works, or services required; a schedule of the delivery, implementation or finishing dates for products, works, and services required; source of funding; an indication



of any item that can be accumulated for procurement as a single package; and an estimation of the value of every package of goods, works, or services and the procurement method to be utilized. Satisfactory procurement planning and prioritization of needs by a procurement entity/unit is an essential prerequisite for ensuring that there is a value for any amount of money spent on goods, works or services. Public Procurement Act 2003, (Act 663). In the public sector, regular checking and redesigning of the procurement plan are important to enable comparison between actual performance and planned performance and to make changes where necessary.

b. Sourcing: Lyons (1996) characterizes sourcing as the process of identifying, selecting and developing suppliers. Section (35-42) of the Public Procurement Act 2003, (Act 663) of the republic of Ghana states five (5) Methods of procurement that guides people in public sector Procurement in selecting a supplier for the award of the contract. The Methods include Competitive Tendering, Two-stage Tendering, Restricted Tendering, Single-source Procurement, and Request for Quotation. This will help achieve the researcher's objectives of improved procurement performance since supplier's consideration in terms of integration will be paramount.

c. Evaluation and Award: After tenders or bids have been received, there is the need to do an evaluation of the bids to choose the supplier who is most economically responsive. In the Public Sector, the criteria used for the evaluation and award of contract are; lowest cost, quality, and cost based, the margin of preference and others. Also, based on the evaluation, there might be the need to negotiate. If that happens the organization will have to go through the negotiation process which includes; planning, setting negotiation objectives, coming out with the negotiation teams and styles and finally, establishing areas for an agreement where the contract will be based. This as part of the researcher's objective will help establish whether information technology can be of help in this area of evaluation in order to achieve procurement performance.

d. Contracting: At this phase in the procurement process, an agreement is made between the purchasing organisation and supplier after a successful evaluation of the offers. Moreover, this is the place where economical responsive or potential suppliers are notified that they have won the agreement or otherwise with reason (i.e debriefing). In the case of the public sector, a contract is awarded only to a successful

tender and the award notice is published. Contracts awarded should be managed by allocating of responsibility and performance benchmarks to suppliers, modifying the forms of contract as and when necessary, communication and using the right? and dispute resolution methods to ensure a contract awarded to a supplier is well executed. All these processes could be digitalized in order to reduce the process cost and increase efficiency

e. Contract Management: Here, a contract manager must be selected to monitor and evaluate the contract performance. Then, the manager will come out to allocate responsibilities and performance standards to be met by the supplier. By using communication channels, doing expediting and how disputes will be resolved in case any do arise. Lastly, making sure that the contract awarded to the supplier is well executed. A digitally enabled procurement will be able to provide a platform where all processes could be monitored through a designed software.

f. Inspection and Accepting Issues: The basic principle of procurement is to obtain goods, works or services that meet the needs of the user organization. In ensuring that this aim is achieved, goods received, or works and services procured are checked on delivery by comparing it to the specifications on which the contract was added to know if they are of good quality standards. Hence, goods, works or service procured can then be accepted and paid for where the procurement officer or the buyer's organization is satisfied with the delivery. These could be done electronically if findings from the research prove information technology can be used in procurement management at the Judicial Service.

g. Storing: The stores may be defined as a place in an organization where all bought in materials and equipment are kept and issued to the user departments. The store's function is basically concerned with holding stock, inventory control systems and management will then be used to make sure that the goods are stored under appropriate conditions. The stores should also have appropriate materials handling equipment, ensuring safety, security of goods and stores personnel. Lastly, ensures proper allocation of responsibilities.

h. Distribution: The store's function is responsible for the distribution of all items in the stores to various user departments either through the use of regional stores or a centralized store by using the appropriate transportation system taking into consideration the



available infrastructure. A tracking system could be employed through a digitally enabled procurement system to ensure all items get to their destination.

i. Disposal: The contribution of the stores functions in ensuring a successful completion of the procurement process is very essential and covers the disposal of obsolete stock items and surplus items. Disposal of stock items is normally done through auctioning. However, in Ghana's Public Sector, the section 84 of the Public Procurement Act 2003, (Act 663) provides a guide for disposal of obsolete and surplus items which states that disposal shall be by transfer to government departments or other public entities, with or without financial adjustment; sale by public tender to the highest tenderer, subject to a reserve price; sale by public auction subject to a reserve price; or destruction, dumping or burying.

j. Evaluation: A review of the performance of the whole procurement function is very necessary to enable the procurement department to identify the various areas that need improvement and more resources. It also helps to measure the level of compliance with laid down principles and procedures in the procurement process to ensure efficiency and effectiveness of the procurement function. Procurement audit is one of the tools that are used in evaluating the procurement function in the public sector. The emergence of technology has made system audit very simple since a software can easily audit the whole process within a short time.

D. Procurement Process, Efficiency, Effectiveness and Performance

Knudsen, (1999) suggested that procurement performance starts from purchasing efficiency and effectiveness in the procurement function in order to change from being reactive to being proactive to attain set performance levels in an entity. According to Van Weele (2006) purchasing performance is considered to be the result of two elements: purchasing effectiveness and purchasing efficiency. Performance provides the basis for an organisation to assess how well it is progressing towards its predetermined objectives, identifies areas of strengths and weaknesses and decides on future initiatives with the goal of how to initiate performance improvements. This means that purchasing performance is not an end in itself but a means to effective and efficient control and monitoring of the purchasing function (Lardenoije, Van Raaij, & Van Weele, 2005).

Purchasing efficiency and purchasing effectiveness represent different competencies and capabilities for the purchasing function. CIPS Australia (2005) presents the differences between efficiency and effectiveness. Efficiency reflects that the organisation is "doing things right" whereas effectiveness relates to the organisation "doing the right thing". This means an organisation can be effective and fail to be efficient, the challenge being to balance between the two.

For any organisation to change its focus and become more competitive Amaratunga & Baldry (2002) suggest that performance is a key driver to improving the quality of services while its absence or use of inappropriate means can act as a barrier to change and may lead to deterioration of the purchasing function.

Organisations which do not have performance means in their processes, procedures, and plans experience lower performance and higher customer dissatisfaction and employee turnover (Artley & Stroh, 2001, Amaratunga & Baldry, 2002 and CIPS Australia, 2005). Measuring the performance of the purchasing function yields benefits to organisations such as cost reduction, enhanced profitability, assured supplies, quality improvements and competitive advantage as was noted by Batenburg & Versendaal (2006)

Until an organisation measures purchasing performance they will never know how well they are performing and why they should measure purchasing performance. Department of Public Works, Queensland Government (2006) identified four reasons for measuring purchasing performance:

- It provides feedback on the extent to which the planned outcomes for purchasing are being achieved in the organisation.
- It provides information for analysis and decision-making.
- It provides information to executive management about the effectiveness, efficiency, value and contributes to the recognition of the procurement function.
- It provides focus and motivation for purchasing staff.

E. Information Technology and Procurement

Information technology in procurement can best be described to mean any business process that relates to the product, methods, inventions and standards used for the purpose of producing information (Kumar, 2006). Information technology can also be described



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to mean the preparation, collection, transformation, retrieval, storage, access, presentation and information into either graphics, text, image, voice or video.

Information technology normally takes the form of information movement between human, people, and machines or between machines. It guarantees the determination, advancement, organization, operation, upkeep and development of data innovation resource predictable with authoritative objectives and goals (Boar, 1993). He further says information technology is the ability base on what an organisation builds up its business information system. The practice leads to cost and time reduction in procurement management. Another advantage is the improvement of processes like contract management, supplier relationship management, and workflow management.

F. E-Procurement

As per Elliff, (2001), e-procurement is concerned with any buying related action that includes electronic correspondence, for example, the internet or another related programming, to offer organisations some assistance with achieving expanded quality. Beginning from point-and-snap requesting which utilizes Web-based indexes of individual suppliers to commercial centers that unite in one place, and the items offered by various suppliers.

The definitions above clearly explains that information technology in procurement could be done from both the internet and any other electronic software system that allows for information transfer. Because of the way procurement is a sweeping capacity, a satisfactory e-procurement solution ought to incorporate all purchasing circumscribing viewpoints to understand the full esteem.

a. Prospects of E-procurement

Gaining from the effects and agreements that the sending of creative systems in organisations and applications as of now had numerous establishments, we imagine considerably more radical changes to business phones and hierarchical structures throughout the following years as electronic trade agreements turn out to be more develop and more across the board. As a general improvement in the development framework, we see the part change between end clients and the procurement capacity merge, i.e., new purchasing systems will proceed to either computerize buying operations or push them down to the end client, permitting the purchasing division to focus more on vital and administrative assignments. Computerized purchasing, contract posting, e-tendering and

electronic barter are different regions where enormous increases are yet to be harvested.

- Beginning with institutionalized products, particularly MRO supplies, electronic auctions may start to assume a vital part in numerous more diverse aggressive environment than today. Including suppliers and bidders around the world, they would rehash continuously, so a planned buyer could dial in and see the spot cost of paper, seats, or some other gear supplies and figure out if to buy now or to sit tight a while at the cost to perhaps turn out to be greater. As more advanced depiction strategies advanced, cutting edge purchasing will likewise highlight more mind boggling things and permit coordinating of supply and request as for cost, as well as for components, for example, management of quality or rate of delivery.
- Developing an electronic RFQ and transferring it to the electronic market space to be simple for purchasing organisations. Suppliers and temporary workers would have the capacity to electronically get in touch with one another, arrange a group-based methodology, and consequently react to the RFQ.
- An organisation with a few decentralized little purchasers of the same goods would have the capacity to join the requests to influence its buying energy to agree at the best cost, usage, for instance, intranet-based inward Web shapes for solidification. The same idea can likewise be connected in-between hierarchical settings where an outsider or purchasing affiliation would go about as a go-between utilizing purchasing power for little and medium-sized organisations utilizing the Internet and The Web for correspondence and as a device for sourcing.
- Under ordinary circumstances, IT will bolster or even robotize every single distinctive sort of procurement systems and procedures over the whole organisation by directing specialized details, endorsement structures, and payment guidelines as indicated by interior strategy limitations, outer necessities,



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and business sector opportunities. Therefore, procuring divisions will, in the end, get to be made out for the most part supervisors and systems integrators, less of agents, secretarial staff, and regulatory backing. Also, this has been the advanced system from which buying has customarily moved from to end up acquisition which is more vital.

In spite of the fact that what's to come depends on a few improvements that are as at now unmistakable as we push ahead, their novelty and the absence of accessible innovation and industry measures make it exceptionally hard to conjecture future advancements. It is not clear what future Internet-based procurement systems will look like or convey to endure and how well they will be acknowledged by purchasing and offering organisations in the business, whether regular gauges will develop, resemble, and what the subsequent changes in procurement procedures will, in the long run, get to be.

b. Operational Impact of E-Procurement

Thompson et al., (2000), expressed that e-procurement's points of interest are fundamentally found in the circuitous purchasing area (products and managements that are not connected specifically to the assembling systems) with the under-recorded significant advantages:

- Systems that permits suppliers to have new entry clients furthermore takes into consideration purchasers to discover new suppliers.
- There is an expanded exactness of the information given by lessening the quantity of information passage focuses inside of the procedure. The vital information is just entered once.
- The procurement of an electronic steering which dispenses with the issue of lost reports and the requirement for manual processing. This prompts expanded control and responsibility for business acquisition.
- The system gives constant processing of all request status.
- Payment for buys made by most elements can be naturally activated after checking of the receipt of the delivery note and the buy request (happens consequently). In spite of the fact that it doesn't inexorably mean

programme payment coordination with Electronic Funds Transfer (EFT) or Procurement Card (P-Card) agreements would robotize the aggregate procure-to-pay process.

- Reduced organizational cost, and additionally decreasing the organization weight of procuring experts in an organisation.

DATA DISCUSSIONS

A. Procurement processes

In investigating the effect of information technology in public procurement performance in Ghana, a 7-point Likert scale was developed by the researcher to measure the perspectives of respondents on how the effect of Information Technology can help improve Public Sector Procurement performance. The scale ranges from 1= strongly disagree, 4 = Indifferent/not sure, 7 = strongly agree.

Given the average midpoint value of 4 as indicated in table 4.3 with means scores of M=6.63, M=5.25, M=4.88, M=4.25 and Standard deviations SD=0.49, SD=0.72, SD=1.06 and SD=1.21 respectively shows that the staff of the Judicial Service conduct procurement in an effective and efficient manner. With the midpoint of 4, there was an average response rate above 4 which shows there are effective procurement systems to allow for the operation of IT.

Table of Procurement processes

	N	Mean	Std. Deviation
procurement is conducted in an effective and efficient manner	80	6.63	0.49
there is transparency in the procurement process	80	4.25	1.21
procurement is undertaken in a faster way without delays	80	3.85	1.27
management understands procurement process	80	4.88	1.06
management adhere to all necessary process	80	5.25	.72



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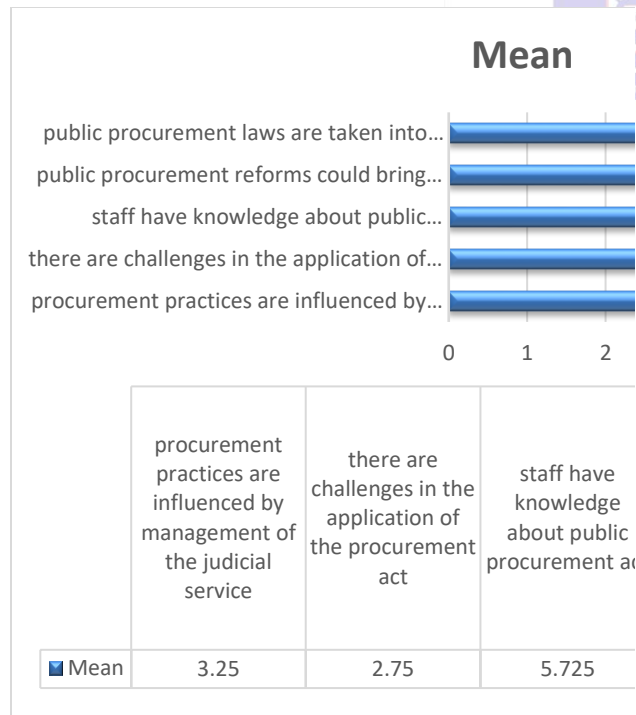
Note

Scale: 1=storngly disagree; 2=disagree; 3=somewhat disagree; 4=indifferent; 5=somewhat agree; 6=agree; 7=strongly agree

Source: Field Study (2016)

B. Public procurement Processes

The application of public procurement process in the procurement processes of the Judicial Service was considered a variable tool that will aid in the achievement of performance improvement in the overall organisational procurement processes in Ghana and this was represented in figure 4.1. As indicated in figure 4.1, a majority of the respondents with mean scores above the midpoint of 4 were of the view that procurement processes follow the guidelines and procedures of the public procurement Act 663. While a minority score of 3.25 had the perception that procurement practices were influenced by management of the Judicial Service. This shows that there are procedures to ensure procurement was done according to strict policy and implementation of IT which will, therefore, lead to an increased efficiency and effectiveness in procurement management at the Judicial Service.



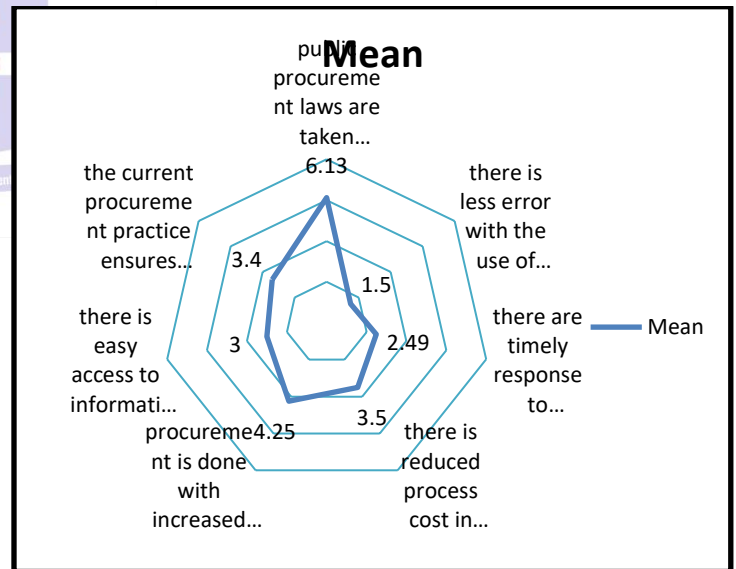
Note

Scale: 1=storngly disagree; 2=disagree; 3=somewhat disagree; 4=indifferent; 5=somewhat agree; 6=agree; 7=strongly agree

Source: Field Study (2016)

C. Partner support

Partner support is an effective tool in achieving success in supply chain management and will, therefore, aid in an effective communication technology in public procurement practice in Ghana. The researcher used 7 determinants with a scale measuring from 1=strongly disagree through to 4=indifferent to 7=strongly agree. Procurement done on transparent basis recorded a high mean of M=6.13 with a standard deviation of SD=0.93 with procurement done with increases efficiency and effectiveness also recording a mean of M=4.25 and a standard deviation of SD=1.097. One of the determinants which recorded the lowest mean of M=1.50 with a standard deviation of SD=0.712 was the question whether there were fewer errors with the use of the manual system of procurement. The result shows that the practice of procurement needs to be improved with the application of information system and technology in Public Procurement.



Source: Field Study (2016)

Figure 4.2: Partner support

Note

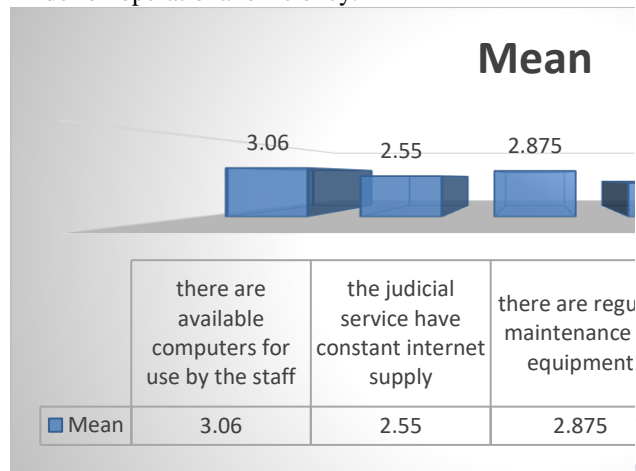
Scale: 1=storngly disagree; 2=disagree; 3=somewhat disagree; 4=indifferent; 5=somewhat agree; 6=agree; 7=strongly agree

D. Availability of IT infrastructure

The radar illustration in figure 4.2 with mean scores of M=4.125, M=3.06, M=2.875, M=2.55 and M=2.125 with most of the responses below the midpoint of 4



show that there is no enough available tools and infrastructure for the implementation of IT in the procurement process of the Judicial Service. The results of this assessments are shown in figure 4.3. This shows that, even though there are structures for the operation of procurement, which would have made the usage of IT implementation very feasible in the Judicial Service, the lack of equipment and tools hinder on operational efficiency.



Note:
 Scale: 1= strongly disagree; 2=disagree; 3=somewhat disagree; 4=indifferent; 5=somewhat agree; 6=agree; 7=strongly agree
 Source: Field Study (2016)

Availability of IT infrastructure

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Increased efficiency and effectiveness	30	4.33	.758	.138	4.05	4.62
Reduce process lead time	30	4.17	.913	.167	3.83	4.51
Reduce process cost	30	4.67	.758	.138	4.38	4.95
Transparent process	30	5.67	.479	.088	5.49	5.85
Challenges in the use of IT	30	3.17	1.367	.250	2.66	3.68
Level of knowledge on the use of IS and IT	30	1.50	1.777	.142	1.21	1.79
Easy access to information	30	4.33	.758	.138	4.05	4.62
how long have you worked with judicial service	30	6.10	1.954	.357	5.37	6.83

E. Managerial and Staff Skills

Table 4.4 with a high mean of M= 5.63 and a standard deviation of SD=0.862 shows that the workers of the Judicial Service believe that the implementation of IT will be able to reduce the workload of workers at the Service even though a less majority of the respondent representing a mean of M=3.14 and a standard deviation of SD=1.375 indicated that staff are trained quarterly. This result shows that IT can be successfully implemented at the Judicial Service and the Public Sector as a whole with more training of staff and management.



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Managerial and Staff Skills

	N	Minim um	Maxi mum	Me an	Std. Deviat ion
Staff are trained on IT	80	4	6	5.13	.933
Staff are trained on IT usage	80	3	6	4.63	1.226
Managem ent and staff trained on electronic requisition	80	3	6	3.88	1.060
Implement ation of IT will help reduce workload	80	4	7	5.63	.862
Staff trained quarterly on procurement	79	2	6	3.14	1.375

1. Values plotted are mean scores

2. Scale: 1=strongly disagree; 2=disagree; 3=somewhat disagree; 4=indifferent; 5=somewhat agree; 6= agree; 7=strongly agree

Source: Field study (2016)

F. Supplier and contractor’s response

Service providers of the Judicial Service were considered an important part of the study since they constitute a major part in determining the success of the application of IT in public procurement. This is so because they are mainly going to be the recipient of the service. A majority of the suppliers with mean scores and standard deviations of (M=4.33 SD=0.758, M=4.17 SD=0.913, M=4.67 SD=0.758, M=5.67SD=0.479, M=3.17 SD=1.367, M=1.50 SD=0.777, M=4.33 SD=0.758, M=6.10 SD=1.954) show that averagely, the perception of the suppliers and contractors of the Judicial service about the use of IT is significant to the success of the use of IT in the Judicial Service. The result of the data recorded shows that suppliers and contractors have been in business with the Judicial Service for a long time and have enough knowledge of the use of IT to be able to use IT for businesses.

Suppliers and Contractors Business data

Scale: 1=strongly disagree; 2=disagree; 3=somewhat disagree; 4=indifferent; 5=somewhat agree; 6= agree; 7=strongly agree

Source: Field Study (2016)

CONCLUSION

The objective of the research was to determine the extent of IT usage in Public Procurement at the Judicial Service. In other to achieve this objective the availability of IT infrastructure was assessed to determine the extent of IT usage in the Judicial Service and what needs to be done to improve upon it. It was revealed that there was no enough available tools and equipment with internet connectivity to enable the implementation of IT with little improvement in infrastructure as shown in table with mean scores M=4.125, M=3.06, M=2.875, M=2.55 and M=2.125 which were mostly below the midpoint of 4. A majority of the staff also indicated from figure 4.2 that it will make their work easy. This support the relation that exists between the independent variable and the dependent variable procurement performance.

Business value of IT continues to stimulate interest and debate among both academics and practitioners. The researcher tries to investigate the effect of IT value in the context of digitally enabled procurement system, which has emerged as one of the major areas for companies to leverage IT to improve procurement performance in global operations. On the basis of the findings of the study, conclusions can be drawn that, the effect of IT on public sector procurement performance in Ghana needs to be given much attention. As shown in the empirical results in tables 4.6 and 4.7, all the variables used are significantly associated with procurement performance along the supply chain with only Availability of IT infrastructure which was not statistically significant with a significant level of 0.063. These findings highlights that IT can create value.

In particular, the value is generated through effective use of the technology to improve procurement performance. This supports the RBV theory that common technologies can be converted into valuable resources through deployment in specific processes which is not for from the previous work of Zhu and Kraemer (2002). As an implication for the IT value literature, the results suggest the usefulness gauge intermediate firm performance and probe into the specific ways that IT is used to improve business processes.



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The theoretical literature has long emphasized the importance of efficient information flows in supply chains (Lee et al. 1997, 2000); the research work provides empirical evidence about how information flow enabled by partner support can improve supply chain performance in the public sector institutions especially the Judicial Service.

More broadly, this paper contributes to the literature on the digitally enabled SCM by developing a resource-based view model of what resources are important to create value in supply chain contexts. The role of tangible IT has been extensively studied and the literature has called for research on value drivers of SCM that go beyond the technology (Rai et al. 2006). This paper identifies intangible resources, especially managerial and staff skills and procurement processes as key value drivers that work together with partner support to improve firm performance, highlighting that integrational, managerial, and relational resources are critical in the global supply chain contexts.

The Judicial Service of Ghana with most of its procurement activities done, in accordance with regulations of the Public Procurement Authority, have not put in enough infrastructure to take care of IT usage. This study was carried out with the use of suitable methodological methods of purposive and convenient sampling of respondents to achieve the objectives of the study.

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