EXPLORING THE PROSPECTS AND CHALLENGES OF PROCUREMENT PERFORMANCE MEASUREMENT IN SELECTED TECHNICAL UNIVERSITIES IN GHANA

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ABSTRACT

This study was conducted to assess to the prospects and challenges of procurement performance measurement in selected technical universities in Ghana. The study employed exploratory and descriptive research designs and non-probability sampling techniques to select 120 participants. Primary data were gathered using structured questionnaire. The study found all technical universities periodically assess procurement contribution to the university's performance as a metric of measuring procurement performance. Majority of the employees consider the performance measuring metric as important. Also, quality of purchase is considered in procurement performance measuring metrics as important. The technical university uses response time to user demand, supplier lead times, compliance to university's procurement guidelines, and contributions of procurement to corporate competitiveness, supplier relations and customer satisfaction as a metric of measuring procurement performance. Concerning the prospects of measuring procurement performance the study found that 93% of procurement officers agreed that procurement prospects enhance procurement efficiency. Majority 89% indicated that procurement prospects promote better procurement control processes. Regarding the challenges study found that lack of relevant performance indicators, difficulties in measuring supplier lead times as this was affected by various factors, inability to account for the contribution of other functions in the procurement process e.g. users and finance, lack of transparency in the procurement process was a challenge faced when measuring procurement performance. The study concludes that there are adequate measures in place to assess procurement performance in technical universities in Ghana. The study recommends that management should ensure total compliance with the public procurement act to enhance procurement efficiency.

Define the key words of your paper here

1. INTRODUCTION

According to Ghana Integrity Initiative (2007), Public Procurement "is the acquisition of goods and services at the best possible total cost of ownership, in the right quantity and quality, at the right time, in the right place for the direct benefit or use of governments, corporations, or individuals, generally via a contract". It can be said to be the purchase of goods, services and public works by government and public institutions. Procurement therefore has both an important effect on the economy and a direct impact on the daily lives of people as it is a way in which public policies are implemented (Ghana Integrity Initiative, 2007).

Burton (2005) believes that public procurement is the central instrument to assist the efficient management of public resources. He further argued that public procurement supports the works and services of the government and can cover all acquisitions, including stationery, furniture, temporary office staff and complex and high cost areas such as construction projects.

A United Nations (1999) report earlier on argued that public procurement is a government business system which is concerned about the government procurement process such as preparing project specification, requesting, receiving and evaluating bids, awarding contract and payment. However public procurement is not a one-off activity, it is a processes based action with multi-phases. Matechak (2002)

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identified three main phases of procurement process which include procurement planning and budgeting, procurement solicitation, and contract award and performance.

The Ghana public Procurement Act 2003 (Act 663) as amended was implemented to ensure value for money. The main objective of the Public Procurement Act 2003 (Act 663) as amended is to achieve a judicious, economic and efficient use of state resources in public procurement; and to ensure that public procurement is carried out in a fair, transparent, non-discriminatory and competitive manner. Moreover, it has to satisfy requirements for goods, works, systems, and services in a timely manner. Furthermore, it has to meet the basic principles of good governance: transparency, accountability, and integrity. Nonetheless, its implementation is not without challenges including: delay and long procurement processes, significant human interference, state interference, less transparency, lack of professionalism and discrimination in the selection and award of government contracts. In short the current system proves to be a recipe for bureaucracy, high level human interference and control, and circumvention of processes and procedures. Since the implementation of the procurement act in Ghana there have been number of studies which focused on adoptions, compliance. What is however lacking in literature includes the prospects and challenges procurement performance measurement. In view of this, the study is intended to explore the prospects and challenges of procurement performance measurement in selected technical universities in Ghana.

Objectives of the paper have not been stated

2. KEY CONCEPT DEFINED

2.1 Performance Measurements

Performance is the act of quantifying efficiency and effectiveness of employee's productive hours or performance measurement can be regarded as the systematic means of attributing numbers to entities. Although several definitions have been offered to performance management, they all seem to have one common identity and that is trying to evaluate the performance of companies or organizations.

According to Giese (2011) and The Supply Chain Council (2008), performance measurement is the process of quantifying efficiency and effectiveness of employee's productive hours. Real performance measurement is conducted through the use of BSC, the performance pyramid, quantum performance measurement and the Skandia Navigator. Within Supply Chain Operations Reference (SCOR) models were mostly used. Performance management involves the process where criteria are been established by procurement based on strategic planning goals to ascertain the results and quality of activities (Vaidya, Yu and Soar, 2003).

Performance measurement simply involves using systematic steps to determine whether procurement is meeting its objectives. From the perspective of procurement management strategic measures are needed to measure how effective procurement initiatives and decision are in fulfilling organizational goals (Wittig, 2003). Neely *et al.* (2005) defined Performance measurement as the metrics adopted to quantify efficiency and effectiveness of actions. The definition of Neely *et al.* (2005) is known to be limited when considered from a broader literature review base.

2.2 Procurement Performance

Procurement performance is grouped into two; efficiency and effectiveness (Van Weele, 2002). According to Van Weele (2002) effective procurement is when previous set goals and objectives are successfully accomplished. This definition relates actual and planned performance based on which judgment is made. Subsequently, efficient procurement relates planned and actual acquired resources intended to meet set goals and objectives. This integrates suppliers into procurement performance.

Organizations do not change overnight to achieve results but in order to become competitive, Amaratunga and Baldry (2002) emphasized that procurement performance plays a key role in improving

the quality of services. In the absence of adequate procurement performance, barriers are created that deteriorate purchasing functions. In developing countries, changes are fast fusing their operations due to the internal influence ion their market activities. These rapid changes are affecting the complexion of procurement performance thereby leaving pressure on procurement officers. This tassel between internal and external forces influences procurement performance. Procurement performance laid the bases to effectively control resources and demonstrate value of procurement functions. Many organizations in Ghana have no procurement policies to ensure effectiveness and efficiency. However, organizations that have procurement performance policies have it in scattered and incomplete manner (Anvuur and Kumaraswamy, 2006).

Mukopi and Iravo (2015) agree to the fact that effective performance measurement must accomplish the functional goals as well as the metrics that show a balance between financial and non-financial measures in decision-making. This means that improvement in public procurement structures would have direct effect on the overall economic benefit of the country. Almost all countries consume large and huge sums of government procurement of goods and services and works that is channeled through the government (Basheka, 2009).

Procurement performance is the results of purchasing efficiency and effectiveness (Venkatesh *et al.,* 2003). Performance provides the bases to examine the effectiveness of public entities towards achieving set goals and objectives and also decide on initiatives that promote performance. Estimating performance functions of procurement officers yield benefits to organizations like reducing costs, increase profitability, continuous quality improvement, gain competitive advantage and enhance profitability (Basheka, 2009).

2.3 THEORETICAL FOUNDATION OF THE STUDY

2.3.1 Institutional theory

The theory was deployed to depict the reasons why most organizations adopt homogeneous systems in terms of business operation. Several studies conducted revealed that most organizations adopt a change due to external influence. Several organizations deploys strategies not as though personal initiative to improve the organizations' activities but as result of imitating other business organizations (Carbone & Moatti 2011; Shi *et al.,* 2012; Adebanjo *et al.,* 2013; Hsu *et al.,* 2013; Lee *et al.,* 2013). This type of change within an organization does not help the organization to become self-reliant thus decision making process is unstable as the organizations' operation is based on the influence of others (Zhu & Sarkis, 2007).

Similarly, Zhua et al. (2013) deployed a conceptual model with respect to the theory. Adebanjo et al. (2013) assessed the relevancy of the theory. From the study, three main external factors were revealed; coercive, mimetic and normative. Organizational leaders must be able to gear the organization into achieving its goals through effective management without the application of external influence. With this, the organization is able to become self-reliant and make informed decisions to help improve the activities of the organization thus enhancing the business operation.

2.4 VALUES THAT DETERMINE PROCUREMENT PERFORMANCE MEASUREMENT

Rorich (2015) have reiterated that procurement performance connects with efficiency and effectiveness in carrying out daily activities. There are eight indicators that have been selected to measure operational performance and these include; the level of contract utilization, suppliers performance, procurement cost, level of price variance, expiration management, procurement cycle time and variability, staff training and payment processing time. Procurement performance reduces cost, improves quality, create competitive advantage, enhance profitability and facilitate supply of goods and services (Kamotho, 2014).

George *et al.* (2004) identified three categories used to measure effective procurement management and these include; input, process and output. Outputs cannot be transferred across companies but can be

linked to a business objective among businesses. Input directly influences output by increasing competence that increase performance. The link is mostly not transparent unless there are further probing. Irrespective of the business strategy chosen, it must be integrated within the broader goals and objective of the company.

In Kenya, Kingori and Ngugi (2014) assessed procurement performance at a retirement institution. It was clear that activities like employee competence; adoption of technology, support from top-management and policies for procurement and among others increases the prospects of procurement performance in retirement benefit institutions. Information technology enhances the sharing of vital information among business partners particularly with customers and along the supply chain of the company. The effective dissemination of information assists in managing inventories in a more effective and streamlined manner. Moreover, developing procurement policy, the rate at which this policy is being formulated and reviewed increases the efficiency of procurement operations and hence procurement performance. It can therefore be concluded that procurement policy is the reason behind most procurement performances in companies.

For procurement to perform to its expectation, there are some determinants that influences such performances. There are no standardize and one approach to performing procurement activities in the public sector hence the need for procurement officers to be conversant with many different generic procurement skills because it is of importance to identify, assess and develop competencies as a procurement officer at the public sector to help ensure that, there is value for money. Developing the competence of an employee increases the efficiency of procurement practices. In pecking order, capacity building influences procurement the most followed by resources and stakeholder influence and lastly, government policy (Kavua and Ngugi, 2014). In a study, Kiage (2013) found that procurement planning significantly influence procurement performance where planning accounts for about 26.9% to procurement performance, resource allocation contributes up to 17.2%, staff competency contributes 20.1% and contract management account for 23.3% of procurement performance.

There is been concerns that procurement performance in public sectors is rarely measured compared to employee performance in public institutions. The inability to establish performance standards affects procurement function and leads to irregular anticipations, which affects decision-making, which dearly hurts all institutions based on the wrong decision they have made. Few studies in literature have spoken about the determinants of procurement performance like procurement planning, staff competency, contract management and resource allocation (Kakwezi and Nyeko, 2010). Rotich (2011) admitted that measuring procurement performance provokes procurement officers and because of this, companies use to monitor their internal activities which does not directly evaluate the work of the procurement officer. This approach forgets that they are in a competitive environment and needs to do due diligence to their actions.

Kumar *et al.* (2005) measured procurement performance with the aim to improving their competitive advantage and also develop a framework that will ensure continuous improvement in their procurement mandate. Procurement of physical materials and its measurement has been handled expertly through the use of scorecards compared to immaterial services. Barsemoi *et al.* (2014) examined the influencing procurement performance measurement in the private sector. The study found that IT is the best way to enhance procurement performance. Performance measures like service delivery, staff competence, and organizational management influence procurement performance the most compared to quality management.

Murigi (2014) tried to examine the influence supplier appraisal has on procurement performance. Supplier appraisals have some level of link that are significant to supplier appraisal and these include; supplier appraisal practices, supplier development, supplier appraisal criteria, supplier appraisal models and assessment and others that leads to development. The standards that are deployed in assessing suppliers determine their level of suitability in helping the procurement unit to achieve competitive edge. On the contrary, the lack of management support, commitment, clear structures and limited resources has factors that hinder the implementation of supplier appraisal, which reflects in the procurement performance of a company. Conducting thorough supplier evaluation limits the chances subjectivism in

the procurement process to avoid contracting unqualified supplier. Adequate evaluation of suppliers ensures good procurement function which impacts positively on the organizational performance.

Musau (2015) investigated the effect of the market environment on procurement performance. There were three main forces associated with the market environment that influences procurement performance and these forces included legal forces, political forces and the socio-economic force that influences procurement performance. Within the context of market environment, competition is very high coupled with the need to accomplish socio-economic objectives and the responsibilities to fulfill government needs are the major components that influence procurement performance.

The legal environment concentrates on the content of contracts, developing regulations, financial regulations, personal guides, research and manufacturing regulations affects procurement performance. Politically, the budgets of institutions are affected based on budgetary allocations, political pressures possess a challenge as well as interest groups and alternative procurement statute. All the stated factors politically contribute either to the success or failure of public institutions. The socio-economic aspects of the forces that influence procurement performance include; subsidies from government, pressure from environmental activists and favourable and unfavourable economic indicators like inflation.

In Kenya, Osir (2016) examined the role of e-procurement adoption on procurement performance. Particularly, the study concentrated on e-tendering, e-awarding of procurement performance, e-ordering and e-invoicing of procurement performance. Many public institutions are adopting e-tendering, e-awarding, electronic ordering and e-invoicing is increasing the tendency to enhance procurement performance. The study have confirmed that e-procurement positively influence procurement performance.

The adoption of e-procurement has led to sustainable development among corporations but surprisingly; Kenya is behind in terms of adoption of e-procurement and in using it in full potential. There is the need for the government of Kenya to develop holistic systems that would be integrated well alongside technologies to deploy procurement effectively. There is also the need to develop proper legal works and government policies that is mandatory to select bidders through the e-procurement by installing solid security systems and authentication among public institutions. Lastly, there is the need to develop comprehensive e-procurement implementation strategy to ensure adoption of public institutions.

Patrucco *et al.* (2016) evaluated how effectiveness, efficiency and compliance to public procurement have become an important part of government concern. Public institutions have come to the realization that appropriate controls and diagnostics are necessary to fulfill procurement performance. At the local metropolitan assemblies, procurement performance existed on four main pillars; evaluation, inventory, procurement systems and awarding. There are also cost, sustainability, time, quality, innovation and compliance. Procurement performance must not be only viewed from the perspective of cost measurement, which constitutes the traditional forms of measuring procurement. Odero and Ayub (2017) established the effect of procurement practices on PP. planning procure has a positive effect on procurement performance whereas the competence of staffs have a strong relationship with procurement performance. There is the need to implement effective procurement practices.

Kepher *et al.* (2015) aimed at investigating the role of supplier management on procurement performance. The study discovered about 81% of changes in procurement performance is explained by four factors; buyer-supplier integration, supplier quality management, supplier training and supplier collaboration. Managing supplier performance plays an integral role in procurement performance, as suppliers are indispensible part of organizations.

There is the need to train suppliers to understand the vision and mission of companies in order to deal with them successfully. This practice has improved procurement performance to an appreciable level in companies constituting approximately 94.6%. Technology has not been properly integrated to control procurement performance hence its impact is less. Chimwani *et al*. (2014) belief that the level of education and years of experience and others improves procurement performance. Record management is one of the most important variables that influences procurement performance.

2.5 FINANCIAL MEASURES THAT DETERMINE PROCUREMENT PERFORMANCE

In Kenya, Kirai and Kwasira (2016) assessed the determinants of PP in Kenya's pipeline company. The company has alluded that budget allocation is strictly implemented with no external influences and tendering was done based on the resources available. However, the resources that were supposed to sustain PP were not available at the right time. The fact that resources influences PP, companies should be much particular to ensure they are available all the time.

Organizations also value the skills of employees and their experiences and it is based on this that employees are appointed to a particular position. Competence needs to be developed and enhanced through training and education and workshops because they help to improve, motivate and facilitate measure of performance. Stakeholders also have their own interest and priorities, which influences the activities of the procurement officer. Mostly, the interests of stakeholders are not aligned to that of the organization, which leads to conflicting demands on procurement.
Companies do not always adhere to procurement plans, procurement planning and this affects procurement budgets procurement plans leading to poor performance from the procurement department (Kirai and Kwasira, 2016). Also, being committed to quality, suppliers financial capacity and suppliers competence positively influence PP. another critical area to be considered in procurement is supplier evaluation where companies have to seek the advice of suppliers (Mutai and Okello, 2016).

Kakwesi and Nyeko (2010) identified financial and non-financial measures that contribute to improving procurement functions. Procurement performance can be measured using both financial and non-financial measures. Implementing a performance measure is not meant to satisfy itself but to ensure effectiveness and efficient monitoring and control function (Waal, 2007). Hence, organizations with established measures of performance incorporating their processes, plans and structures, lead to customer satisfaction or dissatisfaction and can create employee turnover. Implemented measures are intended to measure what they are designed to measure. Implementing procurement measures are not that easy which requires preparation, teamwork, communication, coordination and feedback.

Hussein (2014) also examined the relationship between procurement performance and efficiency in operations in the telecom industry. Factors like flexibility, cost, quality, time and others enhances procurement performance. In Kenya, Kariuki (2013) investigated financial factors that affect procurement performance measurements. Banks by nature control finances, which also plays a significant part of procurement activities by ensuring transparency in financial report and in sourcing for suppliers. The procurement performance of companies particularly in banks is becoming adequate.
There is a positive relationship between procurement performance measurement and ethics; internal process, culture and staff training increases enhanced procurement. Banks are responsible for preparing budgets with the frequency of measuring procurement performance. Transparency in procurement ensures that corruption is detected at an early stage and fraudulent activities.

Christopher (2005) belief there is major transformation from functions to process, products to customers, transactions to relationship, profit to performance, inventory to performance and others. Measures of procurement performance have to be measured to ensure consistent performance. The perception for Key Performance Indicators (KPI) states that while there are different measures of procurement performance need to be employed in companies with just small dimensions contribute to either the success or failure of actions.

Balanced scorecard provides guidance to key players to manage critical areas of companies. Success is reflected in three areas; better, faster and cheaper means of achieving organizational goals. The objective of every organization integrates customer-based performance measures in terms of total quality with internal resources and asset utilization. Benchmarking facilitates the process of identifying current practices in an industry and this directs attention towards how processes can be re-engineered and controlled to achieve success in procurement.

2.6 PROSPECTS OF MEASURING PROCUREMENT PERFORMANCE

Mwanjumwa and Simba (2015) examined the effect of organizational structure, information technology, procurement policy and donor funding on procurement performance. Among the factors considered organizational structure, information technology, procurement policy and donor funding, adoption and integration of information technology is the only factor that increases procurement performance at the International Committee of the Red Cross (ICRC) in Kenya.

Procurement policies turn to be hindrances to procurement performance. Kiage (2013) found that procurement planning significantly influence procurement performance where planning accounts for about 26.9% to procurement performance, resource allocation contributes up to 17.2%, staff competency contributes 20.1% and contract management account for 23.3% of procurement performance.

Karanja and Kiarie (2015) established the influence of procurement practices on organizational performance. Procurement controls performance in organizations. It influences organizational performance to a greater extent helping to cut-down costs and increases the prospects of management to succeed through performance measurement. Electronic procurement has recently influenced procurement performance more than any other factor.

It must be noted that procurement processes are automated and its effectiveness contribute to organizational performance. Inventories are vital to organizational operations where managing inventory involves lots of finances. Streamlining inventory through regulations and space defines operational performance. Planning procurement as expected contributes to organizational performance and planning is done every fiscal year with intermitted emergency purchases (Karanja and Kiarie, 2015).

Bureaucracy is an organizational system that affects procurement and procurement planning is not a smooth exercise. Contract management also contributes positively to performance. Avotri (2012) assessed the prospects and challenges of procurement in the Volta River Authority (VRA). The Public Procurement Act 663 is familiar among stakeholders through seminars and workshops as well as on the job training programmes, which are held for stakeholders on the issue of procurement. More so, public procurement reforms have provided uniform and structured framework for procurement in the public sector. These challenges are bureaucracy that burdens the whole organization hence people have called for the public procurement act to be reviewed

2.7 CHALLENGES OF MEASURING PROCUREMENT PERFORMANCE

Amenba *et al.* (2013) identified the challenges facing the public sector in terms of procurement performance in Kenya. The public sector is in awe of selecting the suitable person to award a contract to which is a major challenge with due justification, record keeping and this is because very few public institutions have adequate record in the public sector of Kenya. This is a major problem that needs to be addressed hence the need for public institutions to keep appropriate records through keeping data, documents to enable them control management purposes.

In order to bring about uniformity in public procurement operations, standardize mechanisms should be instituted to conduct procurement but there should be flexibility to improvise when the need arise while there should also be a policy to follow-up on projects. The processes in the public sector regarding procurement have fostered fraudulent and corrupt ordeals over the years. It is ideal for public sector to adopt measures that would be emulated by the private sector (Karanja and Kiarie, 2015).

Wanyonyi and Muturi (2015) evaluated the factors that affect the performance of procurement functions. It has come to light that technology adoption, staff competency and good ethics progressively increase procurement functions through training. Hence, there is the need to adopt technology in order to promote

procurement performance in public institutions to achieve success in procurement functions. Competence of employees should be promoted at the workplace and in institutions that are fundamentally the structural frameworks that guides activities.

In the view of Oyugi (2013) the factors that affect procurement include time consuming processes, training costs, timely delivery, failure to involve suppliers, bureaucracy, stakeholders' involvement and specification brings about inconsistencies in operations. Lengthy processes leads to cost ineffectiveness, failure to involve suppliers; just in time and learning supply chain management.

Chebet *et al.* (2016) explored the factors that affect procurement measures and performance. The study selected supplier development, information technology and staff competency as independent variables to predict the procurement performance of organizations in order to improve performance in the hotel industry. On this bases, procurement managers alongside cross-sectional managers should enhance practices that lead to procurement performance. This improves a company's ability to become competitive in their industry.

Dwivedi and Butcher (2009) listed some factors that affect procurement and supply chain performance measurement and these include; flexibility, technology, quality, supply chain relationship and environmental uncertainties. Environmental changes deals or captures those activities that are unstable and hence cannot be predicted in respect to customers' behaviour, competitors actions and reactions, technological adoption, suppliers and among others.

Communication is very important within the supply chain of every company and this is made possible through telecommunication and computers. The use of information technology helps to build a network among manufacturers, customers, distributors, suppliers, retailers and others to reduce the time it takes to accomplish a mission, limit the use of paper works and avoid unnecessary activities. Managers stand to benefit when there are free flow of information that helps to coordinate manners, exchange data, build supplier relationship and enhance customer relationship, manage inventory and access information (Handfield and Nichols, 2002).

Sekyere (2014) assessed the performance of procurement practices. Conducting transparent tendering and costing helps to attract companies that will adopt measures that are ideal to deal with procurement in a more sober way compared to using fictitious practices. In Ghana, the adoption of information technology is still at its adoption stage because the public sector and procurement officers lack the knowledge and skills to use applications and tools relating to procurement.

It must be noted that, there are inadequate funding experienced by many institutions and as well they lack understanding of the procurement act specifically among the local suppliers. Companies also experience cost overrun, inadequate qualified personnel and interference from top hierarchy and among others. These revelations demands that companies liaise with the public procurement authority and others relevant offices at the local levels to seek clarification, understand, monitor and evaluate procurement activities and ensure that officers that violate the compliance codes are duly chastised and penalized for their actions and unprofessional practices (Sekyere, 2014).

Similarly, Kiromo (2015) examined the factors affecting procurement and supply chain performance. Companies access their raw materials from suppliers, which are demanded through either written or verbal requests. In the construction industry, the companies face the challenge of distance problems such as transportation with reference to the distance between suppliers and distance sites. Poor roads that is inaccessible during raining season causes undue delays, which worsen these challenges, experienced by building contractors.

The researcher made a profound recommendation where both procurement officers and suppliers need to be trained and schooled to understand the importance of efficiency and what this means to customers. Since planning of upcoming strategies are not static but consider the volatility of the market and the changes that are arising to make decision, annual planning should be participatory, frequently reviewed to reflect existing environmental changes and emerging practices (Karanja and Kiarie, 2015).

3.0 MATERIAL AND METHOD

The study adopts the exploratory research design. Exploratory design used sought ~~adopted~~ to explore new phenomenon, ideas, concepts and others. This describes to increase knowledge of new phenomenon, ideas, concepts and others then the final stage explains the social issues. The descriptive research can be related to both an extended version of exploratory and a piece of explanatory research design (Creswell, 2009). The target population comprised of senior, middle and junior staff from procurements unit of the selected technical universities. The study employed convenience-sampling techniques to select 100 staff. Primary data were gathered through a structured questionnaire. Statistical Package for Social Sciences (SPSS) and Microsoft excel were used to analyze the data.

3.1. Research Design

This study employed both exploratory and descriptive designs. Exploratory design is adopted to explore new phenomenon, ideas, concepts and others. This describes to increase knowledge of new phenomenon, ideas, concepts and others then the final stage explains the social issues. The descriptive research can be related to both an extended version of exploratory and a piece of explanatory research design (Creswell, 2009. The exploratory and descriptive designs were utilized by the researcher to determine the prospects and challenges of procurement performance measurement in selected technical universities in Ghana.

3.2. Population of the Study

According to Burns and Grove (1993) a population is defined as all elements (individuals, objects and events) that meet the sample criteria for inclusion in a study. The study is ~~to the study is~~ to determine ~~to~~ the prospects and challenges of procurement performance measurement in selected technical universities in Ghana. The population of this study comprises of the management and staffs of the Kumasi Technical University, Sunyani Technical University, Tamale Technical University and Accra Technical University.

3.3 SAMPLING TECHNIQUES AND SAMPLE SIZE

Sampling is a key component of any investigation and involves several considerations. The sampling techniques used for this study were quota and convenience sampling techniques. Out of the large technical universities population the present study focused on Kumasi Technical University, Sunyani Technical University, Tamale Technical University and Accra Technical University.

The study used sample size 120. Each selected technical university was allocated 25 respondents. Convenience sampling technique was used to select a cross section of senior and middle management staff to share their knowledge, experience, perceptions and challenges on procurement performance. The convenience sampling technique was employed due to the busy nature of the target respondents. Hence those how were available during and willing to participate in the study were considered

3.4 DATA COLLECTION METHOD AND INSTRUMENT

The study relied on both primary and secondary data. Primary data was collected with the use of questionnaires and secondary data was also obtained from external sources such as the internet, Journals on supply chain management and other documentations. The purpose of sourcing for secondary data was to help in the formation of problems, literature review and construction of questionnaire.
The questionnaire was chosen as the main data collection instrument. A questionnaire is a printed self-report form designed to elicit information that can be obtained through the written responses of the

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respondents. Data was collected with the aid of questionnaires to determine to the prospects and challenges of procurement performance measurement in selected technical universities in Ghana. The questionnaire was designed to meet the objectives of the study. It was adopted from previous works but the researcher redesigned them to suit the objectives of the current study in order to solicit answers that would meet the objectives. The Survey items were adopted from the following sources: Prospects of measuring procurement performance was adopted from Karanja and Kiarie (2015), Challenges of measuring procurement performance was adopted from Amenba *et al.* (2013) finally, Financial Measures that Determine Procurement Performance was adopted from Kirai and Kwasira (2016). Questionnaires were personally distributed by the researcher to top management officials and their staff to complete. The data was collected over a period of one month. Before the questionnaires were administered, the researcher sought permission from the management of the company.

3.5 DATA ANALYSIS

Quantitative data analysis involves the use of statistical methods to assemble, classify, analyze and summarize the data to derive meaning. After the data collection, data reduction was conducted to select, arrange, refine, focus and summarize the data for onward analysis. The data collected was transformed into a form appropriate for manipulation and analysis. The data field surveys were examined to determine suitability, steadfastness, adequacy and accuracy of the data. The responses from the survey for diverse respondents were coded into Statistical Package for Social Sciences (SPSS) and Excel. Tables and charts like bar frameworks. The following types of analyses were considered in the study: Correlations, regression, means and standard deviation. The measurable devices utilized passed on the importance of the figures caught and all things considered made the examination straight forward

4. RESULTS AND DISCUSSIONS

Table 1: Procurement Performance Measuring Metrics

Statements	Mean	SD	NI	SI	I	VI	NA
We assess procurement's contribution to university performance	4.16	0.81	1.0%	4.0%	8.0%	52.0%	35.0%
We assess effectiveness of the procurement activities e.g. negotiations, processing of orders etc.	4.15	0.73	-	3.0%	11.0%	54.0%	32.0%
We assess quality of purchases	4.10	0.76	-	6.0%	6.0%	60.0%	28.0%
We assess response time to user demand	3.83	0.94	3.0%	5.0%	21.0%	48.0%	23.0%
We assess supplier lead times	4.06	0.84	1.0%	4.0%	14.0%	50.0%	31.0%
We assess compliance to university's procurement guidelines	4.11	0.69	1.0%	1.0%	10.0%	62.0%	26.0%
We assess contribution of procurement to corporate competitiveness	3.95	0.86	2.0%	3.0%	18.0%	52.0%	25.0%
We assess supplier relations	4.02	0.69	-	4.0%	11.0%	64.0%	21.0%
Customer satisfaction	4.11	0.79	1.0%	2.0%	14.0%	51.0%	32.0%
We assess procurement reduces administration cost	4.04	0.76	1.0%	1.0%	18.0%	53.0%	27.0%
Supplier performance	4.17	0.87	3.0%	2.0%	6.0%	53.0%	36.0%
We assess contribution of procurement department towards	4.23	0.84	3.0%	-	8.0%	49.0%	40.0%

	the university's social responsibility							

Where NI=Not Important; SI=Slightly Important; I=Important; VI=Very Important; NA=Not Applicable, SD=Standard Deviation

~~The~~ Table 1 presents procurement performance measuring metrics of the selected Technical universities. As indicated in the Table 1, majority (M=4.16, SD=0.81) of the respondents do assess procurement's contribution to university performance as a metric of measuring procurement performance. Beside, whopping majority (60%) of the respondents had rated this performance measuring metric as important. As said by Juma (2010); Migai (2010) the success of every organization is significantly contributed by procurement performance hence management scholar's belief that procurement performance is the backbone of every successful organization since it makes the company competitive. Procurement performance facilitates the acquisition of goods and services that places the organization at a competitive position in the market.

Again, majority (M=4.15, SD=0.73) do assess effectiveness of the procurement activities e.g. negotiations, processing of orders etc. as a metric of measuring procurement performance. Likewise, majority (65%) indicated this performance measuring metric as important. Furthermore, majority (M=4.10, SD=0.76) do assess quality of purchases procurement performance measuring metrics quality of purchases as a metric of measuring procurement performance and 66% of the respondents evaluated this performance metric as important.

Procurement performance is grouped into two; efficiency and effectiveness (Van Weele, 2002). According to Van Weele (2002) effective procurement is when previous set goals and objectives are successfully accomplished. This definition relates actual and planned performance based on which judgment is made. Subsequently, efficient procurement relates planned and actual acquired resources intended to meet set goals and objectives. This integrates suppliers into procurement performance. Also, majority (M=3.83, SD=0.94) do assess response time to user demand as a metric of measuring procurement performance with 69% of the respondents that had indicated that, this performance metric as important. In addition, majority (M=4.06, SD=0.84) do assess supplier lead times as a metric of measuring procurement performance. Majority (64%) of the respondents had rated this performance metric as important. Procurement performance is the results of purchasing efficiency and effectiveness (Venkatesh *et al.,* 2003). Performance provides the bases to examine the effectiveness of public entities towards achieving set goals and objectives and also decide on initiatives that promote performance. Estimating performance functions of procurement officers yield benefits to organizations like reducing costs, increase profitability, continuous quality improvement, gain competitive advantage and enhance profitability (Basheka, 2009).

In spite of that, majority (M=4.11, SD=0.69) do assess compliance to university's procurement guidelines as a metric of measuring procurement performance. Whooping majority (72%) of the respondents had ranked this performance metric as important and majority (M=3.95, SD=0.86) do assess contribution of procurement to corporate competitiveness as a metric of measuring procurement performance. A large number (70%) of the respondents had rated this performance matric as slightly important. In a study, Kiage (2013) found that procurement planning significantly influence procurement performance where planning accounts for about 26.9% to procurement performance, resource allocation contributes up to 17.2%, staff competency contributes 20.1% and contract management account for 23.3% of procurement performance.

However, majority (M=4.02, SD=0.69) do ass~~es~~ supplier relations to be important as a metric of measuring procurement performance 75% of the respondents regarded this performance metric as important as well as majority (M=4.11, SD=0.79) of the respondents do assess customer satisfaction as a metric of measuring procurement performance. Even so, majority (65%) of respondents indicated this performance metric as important. Kepher *et al.* (2015) aimed at investigating the role of supplier management on procurement performance. The study discovered about 81% of changes in procurement performance is explained by four factors; buyer-supplier integration, supplier quality management, supplier training and supplier collaboration. Managing supplier performance plays an integral role in procurement performance, as suppliers are indispensible part of organizations.

Nonetheless, majority (M=4.04, SD=0.76) do assess reduces administration cost as a metrics measuring procurement performance 71% of the respondents rated this performance metric as important. Despite the fact that, majority (M=4.17, SD=0.87) do assessed supplier performance as a metric of measuring procurement performance, majority (69%) of the respondents also indicated this performance metrics as important.

Lastly, majority (M=4.23, SD=0.84) do assess contribution of procurement department towards the university's social responsibility as a metric of measuring procurement performance. 57% of the respondents classified this metric as important. Patrucco *et al.* (2016) evaluated how effectiveness, efficiency and compliance to public procurement have become an important part of government concern.

Public institutions have come to the realization that appropriate controls and diagnostics are necessary to fulfill procurement performance. At the local metropolitan assemblies, procurement performance existed on four main pillars; evaluation, inventory, procurement systems and awarding. There are also cost, sustainability, time, quality, innovation and compliance. Procurement performance must not be only viewed from the perspective of cost measurement, which constitutes the traditional forms of measuring procurement.

Table 2: Systems applicable in the overall performance measurement of the university

Variables	Frequency	Percent
The balanced score card	2	2.0
The performance pyramid	2	2.0
The smart system	7	7.0
The performance measurement questionnaire	58	58.0
The performance prism	31	31.0
Total	**100**	**100.0**

The Table 2 presents systems applicable in the overall performance measurement of the university. As shown in the Table 2, majority (58%) of the respondents indicated that, performance measurement questionnaire system was applicable in the overall performance measurement of the university, 31% showed that, performance prisms system was applicable in the overall performance measurement of the university, 7% of the respondents rated that, smart system was applicable in the overall performance measurement of the university, 2% of the respondents indicated that, performance pyramid system was applicable in the overall performance measurement of the university. Rotich (2011) admitted that measuring procurement performance provokes procurement officers and because of this, companies use to monitor their internal activities which does not directly evaluate the work of the procurement officer. This approach forgets that they are in a competitive environment and needs to do due diligence to their actions.

Table 3: Application of systems when measuring procurement performance

Variables	Frequency	Percent
Yes	79	79.0
No	21	21.0
Total	**100**	**100.0**

~~The~~ Table 3 presents application of systems when measuring procurement performance. The research revealed that, larger number (79%) of the respondents agreed that, there was application of systems when measuring procurement performance and 21% disagreed that there was application of systems when measuring procurement performance.

Table 4: Prospects of Measuring Procurement Performance

Statements	Mean	SD	SD	D	N	A	SA
Enhances high levels of procurement efficiency	4.28	0.68	-	3.0%	4.0%	55.0%	38.0%
Promotes better control of the procurement process	4.27	0.74	-	3.0%	8.0%	48.0%	41.0%
Helps to identify areas of weakness in the supply chain	2.09	1.08	35.0%	39.0%	9.0%	16.0%	1.0%
Facilities competiveness in the pricing of end products	4.04	0.85	2.0%	5.0%	7.0%	59.0%	27.0%
Enhances supplier performance in quality and timely delivery	2.77	1.38	20.0%	34.0%	10.0%	21.0%	15.0%
Facilities comparisons with other companies	1.74	1.00	51.0%	35.0%	7.0%	3.0%	4.0%
Helps to measures savings through procurement	2.15	1.13	33.0%	40.0%	9.0%	15.0%	3.0%
Helps to identify key areas through which procurement can contribute to profitability and competitive advantage	1.68	0.86	50.0%	39.0%	5.0%	5.0%	1.0%
Helps to measure the fitness of procurement function into corporate strategy and	3.02	1.18	13.0%	21.0%	25.0%	33.0%	8.0%
Helps in the appraisal and rewarding of procurement staff	3.95	0.97	2.0%	10.0%	8.0%	51.0%	29.0%

Source: Field Survey, 2018. *Where SD=Strongly Disagree; D=Disagree; N=Neutral; A=Agree; SA=Strongly Agree, SD=Standard Deviation*

~~The~~ Table 4 presents prospects of measuring procurement performance. As shown in the Table 4, majority (M=4.28, SD=0.68) of the respondents rated that, prospects of measuring procurement performance enhances high levels of procurement efficiency. 93% of the respondents agreed that, this procurement prospects enhance procurement efficiency.

In addition, majority (M=4.27, SD=0.74) indicated that, prospects of measuring procurement performance promote better control of the procurement process, majority (89%) disagreed that, this prospects promote better procurement control processes and minority (M=2.09, SD=1.08) of the respondents rated that, prospects of measuring procurement performance helps to identify areas of weakness in the supply chain and 74% disagreed that, procurement measures identify weakness in areas of supply chain. Karanja and Kiarie (2015) established the influence of procurement practices on organizational performance. Procurement controls influences performance in organization. It influences organizational performance to a greater extent helping to cut-down costs and increases the prospects of management to succeed through performance measurement.

However, majority (M=4.04, SD=0.85) showed that, prospects of measuring procurement performance help facilities competiveness in the pricing of end products. Again, 86% of the respondent agreed that, this procurement measures facilitate pricing and end products competitiveness, majority (M=2.77, SD= 1.38) indicated that, prospects of measuring procurement performance enhance supplier performance in quality and timely delivery. Moreover, majority (54%) of the respondents disagreed that, this procurement measuring prospects enhance supplier performance. Kakwesi and Nyeko (2010) identified financial and non-financial measures that contribute to improving procurement functions. Procurement performance

can be measured using both financial and non-financial measures. Implementing a performance measure is not meant to satisfy itself but to ensure effectiveness and efficient monitoring and control function (Waal, 2007).
Hence, organizations with established measures of performance incorporating their processes, plans and structures, lead to customer satisfaction or dissatisfaction and can create employee turnover. Implemented measures are intended to measure what they are designed to measure. Implementing procurement measures are not that easy which requires preparation, teamwork, communication, coordination and feedback.

Notwithstanding, minority (M=1.74, SD=1.00) of the respondents rated that, prospects of measuring procurement performance help facilities comparisons with other companies as well as, whopping majority (86%) of the respondents disagreed that, this procurement measuring measures help facilitates comparisons, majority (M=2.15, SD=1.13) showed that, prospects of measuring procurement performance help to measure savings through procurement, 73% of the respondents disagreed this method helps to measure savings through procurement, minority (M=1.68, SD=0.86) also, concealed that, prospects of measuring procurement performance helps to identify key areas through which procurement can contribute to profitability and competitive advantage likewise 89% disagreed that, this prospects measuring procurement measures helps identify key areas through which procurement can contribute to profitability and competitive advantage.

Nevertheless, majority (M=3.02, SD=1.18) showed that, prospects of measuring procurement performance helps to measure the fitness of procurement function into corporate strategy and 53% of the respondents were neutral with their decision and majority (M=3.95, SD=0.97) rated that, prospects of measuring procurement performance help in the appraisal and rewarding of procurement staff. Whopping majority (80%) agreed that this measuring procurement help in appraisal and rewards procurement staff.

Table 5: Challenges faced when Measuring Procurement Performance

Statements	Mean	SD	SD	D	N	A	SA
Lack of relevant performance indicators	1.78	0.97	46.0%	40.0%	8.0%	2.0%	4.0%
Difficulties in measuring supplier lead times as this is affected by various factors	1.92	0.88	34.0%	49.0%	8.0%	9.0%	-
Inability to account for the contribution of other functions in the procurement process e.g. users and finance	1.85	0.99	44.0%	38.0%	10.0%	5.0%	3.0%
Lack of transparency in the procurement process	4.15	0.91	3.0%	4.0%	5.0%	51.0%	37.0%
Lack of clear procurement policies and procedures	4.15	0.91	3.0%	4.0%	5.0%	51.0%	37.0%
Lack of adequate professionalism in procurement	2.42	1.22	24.0%	40.0%	13.0%	16.0%	7.0%
Procurement is an activity performed by anybody-secretaries, personnel officers, administration assistants and accountants	3.72	1.15	7.0%	8.0%	17.0%	42.0%	26.0%
Poor recording systems for procurement data; and	1.67	0.99	56.0%	31.0%	7.0%	2.0%	4.0%
Employees' attitude. Some feel measuring is tedious; they don't have time for I etc.	1.80	1.01	46.0%	40.0%	6.0%	4.0%	4.0%

Source: Field Survey, 2018. *Where SD=Strongly Disagree; D=Disagree; N=Neutral; A=Agree; SA=Strongly Agree, SD=Standard Deviation*

~~The~~ Table 5 presents challenges faced when measuring procurement performance. As shown in the Table 5, Minority (M=1.78, SD= 0.97) of the respondents indicated that, lack of relevant performance indicators was a challenge faced when measuring procurement performance. Besides, 86% disagreed that, lack of relevant performance indicators was a challenge faced when measuring procurement performance and majority (M=1.92, SD= 0.88) of the respondents indicated that, difficulties in measuring supplier lead times as this was affected by various factors was a challenge faced when measuring procurement performance. On top of that, majority (83%) of the respondents disagreed that, difficulties in measuring supplier lead times as this was affected by various factors was a challenge faced when measuring procurement performance. In the view of Oyugi (2013) the factors that affect procurement include time consuming processes, training costs, timely delivery, failure to involve suppliers, bureaucracy, stakeholders' involvement and specification brings about inconsistencies in operations. Lengthy processes leads to cost ineffectiveness, failure to involve suppliers; just in time and learning supply chain management.

Again, majority (M=1.85, SD= 0.99) rated that, inability to account for the contribution of other functions in the procurement process e.g. users and finance was a challenge faced when measuring procurement performance. In addition, majority (82%) disagreed that, inability to account for the contribution of other functions in the procurement process e.g. users and finance was a challenge faced when measuring procurement performance, majority (M=4.15, SD=0.91) indicated that, lack of transparency in the procurement process was a challenge faced when measuring procurement performance.

Also, a large number (88%) of respondents strongly agreed that, lack of transparency in the procurement process is a challenge faced when measuring procurement performance. Kariuki (2013) found a positive relationship between procurement performance measurement and ethics; internal process, culture and staff training increases enhanced procurement. Banks are responsible for preparing budgets with the frequency of measuring procurement performance. Transparency in procurement ensures that corruption is detected at an early stage and fraudulent activities.

Continuing from the above, majority (M=4.15, SD= 0.91) showed that, lack of clear procurement policies and procedures was a challenge faced when measuring procurement performance. However, majority (64%) agreed that, lack of clear procurement policies and procedures was a challenge faced when measuring procurement performance and the also, majority (M=2.42, SD=1.22) showed that lack of adequate professionalism in procurement was a challenge faced when measuring procurement performance.

In order to bring about uniformity in public procurement operations, standardize mechanisms should be instituted to conduct procurement but there should be flexibility to improvise when the need arise while there should also be a policy to follow-up on projects. The processes in the public sector regarding procurement have fostered fraudulent and corrupt ordeals over the years. It is ideal for public sector to adopt measures that would be emulated by the private sector (Karanja and Kiarie, 2015).

In spite of that, majority (68%) of the respondents agreed that, lack of adequate professionalism in procurement was a challenge faced when measuring procurement performance likewise majority (M=3.72, SD=1.15) rated that, procurement is an activity performed by anybody secretaries, personnel officers, administration assistants and accountant was a challenge faced when measuring procurement performance. Amenba *et al.* (2013) identified the challenges facing the public sector in terms of procurement performance in Kenya. The public sector is in awe of selecting the suitable person to award a contract to which is a major challenge with due justification, record keeping and this is because very few public institutions have adequate record in the public sector of Kenya. This is a major problem that needs to be addressed hence the need for public institutions to keep appropriate records through keeping data, documents to enable them control management purposes.

Furthermore, 87% strongly agreed also that, an activity performed by anybody secretaries, personnel officers, administration assistants and accountants was a challenge faced when measuring procurement performance and majority (M=1.67, SD=0.99) indicated that, poor recording systems for procurement data was a challenge faced when recording procurement performance. Again, 86% of the respondents disagreed that, poor recording system was a challenge faced when measuring procurement performance.

Lastly, minority (M=1.80, SD=1.01) strongly disagreed that, some feel measuring is tedious; they don't have time for I etc. is a challenge faced when measuring procurement performance. More so, 86% strongly disagreed that, laziness and less time for measurement was a challenge faced when measuring procurement performance. In the view of Oyugi (2013) the factors that affect procurement include time consuming processes, training costs, timely delivery, failure to involve suppliers, bureaucracy, stakeholders' involvement and specification brings about inconsistencies in operations. Lengthy processes leads to cost ineffectiveness, failure to involve suppliers; just in time and learning supply chain management.

CONCLUSION

The study concludes that there are adequate measures in place to assess procurement performance in technical universities in Ghana. The study recommends that management should ensure total compliance with the public procurement act to enhance procurement efficiency.

It is recommended that this study is extended to a lot more universities currently using public procurement to determine the prospects and challenges of procurement performance metrics. It is also recommended that further studies done and extended to determine the impact of public procurement performance measure on the entire supply chain. This study should be extended further to assess the role of suppliers in the success of procurement performance in public institutions.

A subtitle on the discussion of competing interests is missing

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