

An Evaluation of Information Systems and Technology Procurement Process: The Case of Public Organizations in Accra Ghana

Isaac Asampana
University of Professional Studies, Accra
Post Office LG 149, Legon

Albert A. Akanferi
University of Professional Studies, Accra
Post Office LG 149, Legon

ABSTRACT

In recent years, researchers have given much attention to public procurement in Ghana. It is however observed that very few researchers have examined public procurement in the context of specific goods and services, especially those on which economic growth largely depends such as services and goods relating to the application of information technology and systems. In view of this gap, this study seeks to evaluate the extent to which the procurement of goods and services relating to the application of information technology and systems in public organisations harmonises with the Public Procurement Law 2003 (Act 663). This study is a survey of 44 randomly selected public organisations in Accra, Ghana. The chi-square and binomial tests are the statistical tools used to analyse data. According to findings, public organisations in Accra observe all the stages or steps of the Public Procurement Law 2003 (Act 663) symmetrically in procuring services and goods relating to the application of information technology and systems, though the extent of the systematic observance of the law is not strong. Public organisations are therefore encouraged to maximise their compliance to the Public Procurement Law 2003 (Act 663).

Keywords

Information systems, Information technology, Procurement Process, Public Organisations.

1. INTRODUCTION

Until recently, procurement was not regarded as a prerequisite for organisational growth and accountability in Ghana. In the past, public organisations in Ghana have less stringent procedures to adhere to in procuring what they need (Sowuh, 2014). The public also had little concern about how a public organisation procures and accounts for items procured (Ameyaw et al. 2012; Gnanih, 2012). The need to gear public procurement towards better organisational accountability and growth however gave rise to the need for public procurement reforms (Anvuur et al. 2006). Implemented procurement reforms in Ghana have consequently rendered public procurement in Ghana robust, transparent and more growth-oriented (Anvuur et al. 2006; Gnanih, 2012). To better understand this argument in the context of this study, the word procurement is worth defining.

Sowuh (2014) provides the most current definition of procurement in a Ghanaian context. She defines procurement as "the acquisition of goods, works or services" (p. 3). According to Cole (2007), the purchase of merchandise or services at the optimum possible total cost in the correct amount and quality through some processes is termed procurement. The definition of Cole (2007) provides a basis of knowing the nature of what is being procured. Thus, it is favourable that the goods and services are procured at the best

possible cost to meet the needs of the purchasers in terms of quality and quantity, time and location. Purchasing on the other hand is also the buying of goods at an available market (Sowuh, 2014). Since every individual and organisation has its unique needs of goods and services, as well as procurement interests, varying procedures could be used in procurement at the individual and private level. However, public organisations are restricted to standards of procurement (Astbrink & Tibben, 2013). This understanding brings to light what is generally termed public procurement.

In public procurement, public organisations are required to follow a standard of procurement that is constitutionally driven. In Ghana, public procurement is governed by the Public Procurement Law 2003 (Act 663) in the nation's 1992 constitution. The central objective of the act is to create a standard platform on which all public institutions can procure goods and services to ensure better transparency, accountability and impact on organisational growth (Kotoka, 2012; Osei-Tutu et al. 2012). In the face of this act, all public institutions are expected to be compliant, regardless of which subsector of the public sector is involved and what items or services are being purchased. The need for compliance to the act in this context means that all public organisations must adhere fairly to the standards of procurement defined in the Public Procurement Law 2003 (Act 663). Failure to adhere to the standards of the law is tantamount to non-compliance, which comes with its negative effects on the organisation and the nation at large.

Impressively, researchers have given much attention to public procurement in Ghana. As a result, there is quite a large stock of empirical studies that examine the public procurement process either in the context of appropriateness (such as the studies of Sowuh, 2014; Osei-Tutu et al. 2011; Gnanih, 2012; Ameyaw et al. 2012, etc.) or level of firms' compliance to it (such as the studies of Sarfo, 2011; Kotoka, 2012, etc.). Researches have justified the appropriateness of the public procurement law and process in Ghana, though some organisation-specific challenges limit the appropriateness of the procurement procedure. Researches have also provided ample evidence about the considerable level of compliance to the Public Procurement Law 2003 (Act 663). It is even more impressive to mention that these studies have provided a framework of suggestions that can be used to improve compliance and appropriateness of the Public Procurement Law 2003 (Act 663). However, procurement research in Ghana has failed to provide public knowledge about the nature of public procurement in specific industries and goods/services, especially the dominant goods/services such as services and goods related to information technology (IT) and information systems (IS).

In Ghana, virtually all public organisations make elaborate use of information systems or technology on which their productivity is pivoted (RLG, 2013). With the proliferation of emerging technologies in recent times, the level of use of IT and IS in public organisations is further heightening. In essence, public organisations engage frequently in the procurement of IT/IS services and goods, either directly or by virtue of outsourcing. In view of this development, there is the need for researchers to probe into the area of IT/IS procurement process to unfold evidences relevant to effective procurement of IT/IS services and goods in Ghana. Currently, the extent to which this concern has been addressed by researchers is abysmally low. This serves as a threat to the maximum utility of IT/IS and its services in Ghana. Moreover, researchers' contribution to academic debate on public procurement in the area of IT/IS goods and services is poor. In response to this challenge, this study seeks to examine the process of IT/IS procurement in the perspective of the Public Procurement Law 2003 in Ghana.

2. OBJECTIVE OF THE STUDY

This paper seeks to evaluate the process of procuring information systems and technologies among public organisations in Accra, Ghana. This paper provides an overview of the compliance of public organisations to the public procurement procedure of Ghana in the context of IT/IS goods and services procurement.

3. RELEVANCE OF THE STUDY

This paper seeks to bridge the gap in the body of studies focused on the procurement of specific goods and services in the context of the Public Procurement Law 2003 (Act 663) in Ghana. This study is among the few researches that seek to provide a framework for procuring IT/IS services and goods in Ghana by public institutions, considering the increasing demand for IT/IS services and goods in Ghana. Moreover, this study serves as a source of information to other researchers who would like to conduct similar studies in future.

4. LITERATURE REVIEW AND CONCEPTUAL FRAMEWORKS

The Public Procurement Law 2003 (Act 663) of Ghana specifies five main methods of procurement in Ghana. These methods are competitive tendering, request for quotations, two-stage tendering, restricted tendering and single source procurement. Based on the objective of this study, this review of literature focuses on standard steps that must be followed by public organisations, regardless of which method of procurement is used.

In the context of the Public Procurement Law 2003 (Act 663), a procurement process involves four major stages, namely deployment process, requirement determination, acquisition and contract fulfilment or completion. With support from Sowuh (2014), Osei-Tutu et al. (2011), Gnanih (2012) and Ameyaw et al. (2012), Krasniqi (2012) indicated that these four basic stages are components of eight (8) steps. These eight steps are discussed briefly below:

Procurement planning: This is the first stage of public procurement where the objective of purchasing goods and services is determined alongside a coherent schema of making the purchase. At this stage, goods and services to be purchased must be determined alongside the needs of the organisation and their potential effect on the growth of the organisation (Anvuur et al. 2006; Krasniqi, 2012). Also, timelines of procurement and the individuals or departments

responsible for making correspondences in the procurement process are determined.

Determining value and classification of the procurement contract: This is the second stage of procurement where the value of the procurement contract is calculated with the purpose of relating budgets to quality and affordability of goods/services and their destinations (Krasniqi, 2012). Measures taken at this stage are relevant to determining the procedure of procurement and the tenders to involve (Sowuh, 2014; Anvuur et al. 2006).

Determination of the procurement procedure: By the time management gets to this level, a good plan and estimated value of the procurement contract must exist. At this stage, management decides which method of procurement to use based on available plan and estimated value of the procurement contract (Othman et al. 2010). The goal at this stage is to choose a method that is cost and time-efficient (Krasniqi, 2012).

Preparation of tender dossier: Aspects of what is done here are covered in procurement planning, where tenders are expected to have some characteristics to deliver the best goods and services to the organisation at a good cost (Krasniqi, 2012). Here, management makes a list of all features the required contractor must have. These features provide justification about the ability of the contractor to deliver goods and services that meet the criteria of management.

Announcement of the notice (i.e. publication): After making a list of all criteria that potential contractors must satisfy, there is the need to publicly announce the availability of the procurement contract, with all eligibility criteria and application deadline specified (Krasniqi, 2012). The standard is to use a national newspaper or a media that is most widely accessed. This increases the chance of reaching as many potential contractors as possible.

Opening and evaluation of tenderers: This involves unfolding the portfolio of selected tenderers to assess the eligibility of each of them vis-à-vis the procurement plan established (Krasniqi, 2012; Ameyaw et al. 2012). The assessment is mainly done with respect to the tract records of applicants which reveal their success in dealing with similar contracts. The Public Procurement Law 2003 (Act 663) requires that no tenderer is discriminated. This ensures that the most eligible tenderer is chosen.

Giving and signing of contract: At this stage, management issues the procurement contract to the most eligible tender. In appraising tenders, management often considers their track records from the perspective of quality, adherence to time schedules and proximity of contractors to the organisation's office location (Sowuh, 2014; Anvuur et al. 2006; Krasniqi, 2012). Also, the organisation and accepted tender sign agreement relating to the procurement contract at this stage. The agreement comes with all standard and quality requirements of the procurement procedure (Krasniqi, 2012).

Contract administration: This stage entails contract closure, where deliverables are presented to management for inspection. During this stage, management expects services or goods to meet or exceed quality specifications indicated at the stage of signing the contract (Sowuh, 2014; Anvuur et al. 2006). If quality specifications are not met, management has the right to reject deliverables and take actions that it deems right. Based on the above review of literature, the stages of public procurement are conceptualised as shown below.

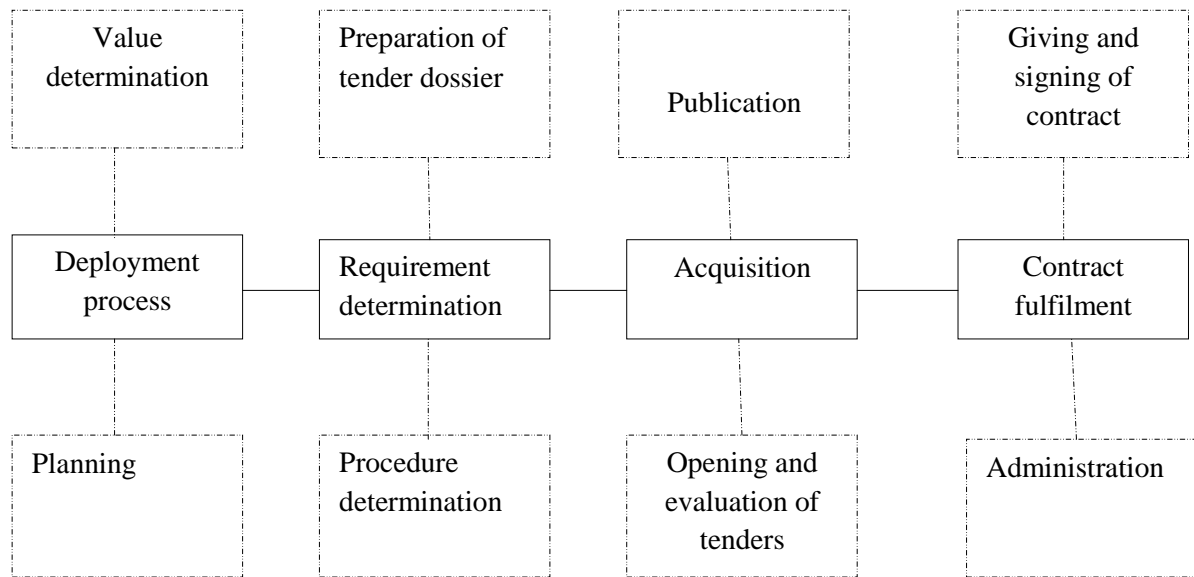


Figure 1: Public Procurement Life Cycle

Source: Krasniqi (2012)

Generally, the stages of procuring IT/IS services and goods under the public procurement procedure in Ghana are not different from what has been discussed. Even so, the Public Procurement Law 2003 (Act 663) and the procurement regulations require the acceptance of minimum tenders for IT/IS goods and services which meet proposal guidelines. The procedures are often quite slow and stretch out over a number of planning cycles as discussed earlier. In a Ghanaian perspective, it is difficult to handle system and software upgrades which are an integral part of today's information technologies. Inherent problems with this process are obvious and inherent in IT/IS procurement efforts.

According to Kotoka (2012), the IT/IS acquisition and management process is reasonable from an ideal view of how the process should function, which involves the delivery of IT/IS systems that operate as intended, within specific time parameters, and in a measurable and cost-effective manner. Krasniqi (2012) makes the submission that buying an existing IT/IS package can be a cost-effective and time-saving strategy compared with developing the application in-house. However, there is the need to carefully consider and plan the buying option to ensure that the selected package contains all of the features necessary to address the organization's current and future needs. Additionally, the purchase option is especially attractive if the software vendor allows the company to modify the technology to meet its needs (Astbrink & Tibben, 2013). Also, this option may not be attractive in cases where customisation is the only method of providing the necessary flexibility to address the company's needs (Astbrink & Tibben, 2013). This option is not the best strategy when the software is either very expensive or is likely to become obsolete in a short time. Regardless of these disadvantages, principles of the Public Procurement Law 2003 (Act 663) and empirical evidences point to the fact that public procurement must be cost-effective and time-saving, where its results should be quality IT/IS goods and services.

Over the years, researchers have given much attention to public procurement in the contexts of its compliance and appropriateness in Ghana and outside Ghana. Astbrink & Tibben (2013) are some of the researchers who have examined the public procurement process in a developed (foreign) country context, focusing on a particular sector, which has to do with engineering services. Their study was however limited to criteria for selecting engineering service clients, where price was disclosed the dominant criterion for outsourcing engineering services. While Astbrink & Tibben (2013) limited their investigation to criteria of procuring engineering services, Krasniqi (2012) examined public procurement holistically, providing evidence about the role, appropriateness and effect of public procurement. The study of Krasniqi (2012) justified the relevance and effect of public procurement, with the following measures constituting the public procurement life cycle: (1) procurement planning; (2) calculating the value and classification of the procurement contract; (3) determination of the procurement procedure; (4) preparation of tender dossier; (5) announcement of the contract (i.e. publication); (6) opening and evaluation of tenders; (7) giving and signing of contract and (8) contract administration. Interestingly, this procurement life cycle of Krasniqi (2012) harmonises with procurement procedures specified under the Public Procurement Law 2003 (Act 663) of Ghana.

In Ghana, studies have confirmed the relevance of the Public Procurement Law 2003 (Act 663), as well as the compliance of organisations with it. In the studies of Sowuh (2014), Osei-Tutu et al. (2011), Gnanih (2012) and Ameyaw et al. (2012), the public procurement life cycle of Krasniqi (2012) is confirmed in a Ghanaian context. This means that the eight stages of public procurement in the study of Krasniqi (2012) are not foreign to the public procurement procedure in Ghana. In the studies of Sarfo (2011), Kotoka (2012) and other studies conducted in a Ghanaian context, public organisations fairly comply with the Public Procurement Law 2003 (Act 663). Meanwhile, compliance with the public procurement procedure is a reflection of the systematic observance of each

stage of the public procurement life cycle by organisations. The purpose of this study is to identify if all the stages of the Public Procurement Law 2003 (Act 663), as conceptualised in Figure 2, are observed by public firms in Accra Ghana.

Based on the above conceptual and empirical evidences, the process of procuring IT/IS goods and services under the Public Procurement Law 2003 (Act 663) is conceptualised as shown in Figure 2.

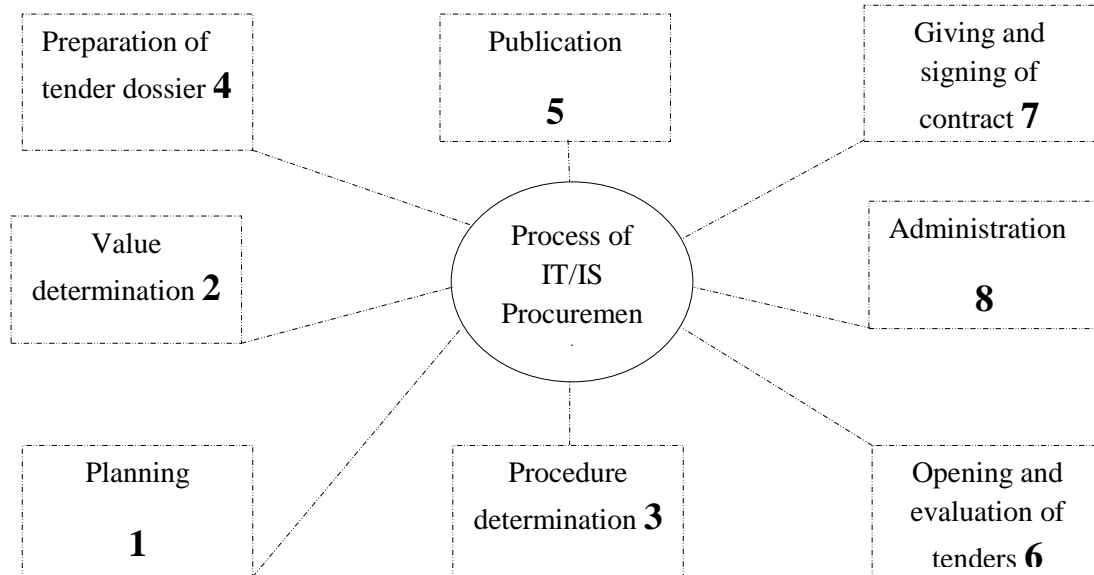


Figure 2: Levels of IT/IS Procurement Process According to Public Procurement Law 2003

Figure 2 conceptualises the stages of IT/IS goods and services procurement. The numbers in the rectangles represent the stage of procurement according to the Public Procurement Law 2003 (Act 663). A good and compliant IT/IS procurement process is the one that honours all the eight stages systematically (Krasniqi, 2012; Astbrink & Tibben, 2013). Based on this argument and conceptual framework, the researcher finds out in this study if these stages are systematically observed by public organisations in Accra.

5. METHODS AND MATERIALS

A quantitative research approach was generally employed in this study based on the goal of the researchers to employ inferential statistical tools in presenting results and the need to adhere to standard research reliability and validity measures. The researcher's choice of a quantitative approach in this study was also influenced by the goal of generalising findings, at least over public firms in Accra, using a random sampling procedure.

The study made use of primary data. The primary data were collected using questionnaires issued to the information systems officers or procurement officers of the 44 Ministries, Departments and Agencies (MDAs) and MMDAs that participated in the survey. The study population was the entire number of public entities in the Greater Accra Region captured in PPA's online procurement planning system. As at May 2012, the number of such organisations is 223. As a result of time and financial constraints, the researcher could not incorporate all organisations in this study. A sample size of 44 organisations was therefore chosen, based on the researcher's capacity to meet the time and financial demands of data collection. The balloting method of the simple random sampling procedure was used in this study to select participating organisations.

A self-administered questionnaire was used in data collection. This instrument is made up of items measured on a five-point likert scale. The questionnaire was designed to elicit responses that address the objective of this study. Moreover, the questionnaire was used in a pilot study, which provided an opportunity to adjust items in the instrument to give rise to valid and reliable data (see Table 1 for reliability coefficient).

Questionnaires were administered by hand delivery and electronic mail, depending on which of the two methods a respondent was conversant with. As a result of the small sample size employed and some ethical measures (such as giving each respondent an office pen and giving them sufficient time to complete questionnaires) taken, a response rate of 100% was achieved. Thus all 44 respondents completed and returned their questionnaires on schedule.

Data analysis was done using Version 20 of Statistical Package for Social Sciences (SPSS) and MS Excel. The binomial and chi-square tests were used to analyse data in view of the fact that data employed in the analysis were categorical. Moreover, these statistical tools were used to test for a significant difference among frequencies of responses on each variable in the questionnaire. The following section comes with data analysis and results.

6. RESULTS

In this section, findings of the study are presented. Before findings are however unfolded, there is the need to justify the reliability of data on which results in this section are based. Table 1 comes with a reliability test in this respect.

Table 1: Reliability Test

		N	Reliability Statistics	
Cases	Valid	44	Cronbach's Alpha	Number of Items
	Excluded ^a	0	.914	44
	Total	44		

a. Listwise deletion based on all variables in the procedure

Table 1 shows results of Cronbach's reliability test. From the table, none of the 44 items covered in the questionnaire was removed. This is an indicator of a high reliability of the research instrument used in data collection. Moreover, the high value of the Cronbach's alpha (.914) in the table is a precise estimate of the instrument's high reliability. In essence, data collected in this study, for that matter its findings and conclusions, are reliable. This high reliability level is attributable to the pilot study conducted using this research instrument.

Table 2: IT/IS Process Confirmation: Binomial Test

		Category	N	Observed Prop.	Test Prop.	Asymp. Sig. (2-tailed)
Does your organization have an internet and Email?	Group 1	Yes	44	1.00	.50	.000 ^a
	Total		44	1.00		
Is there IT/IS or Data processing Department?	Group 1	Yes	34	.77	.50	.000 ^a
	Group 2	No	10	.23		
	Total		44	1.00		

a. Based on Z Approximation.

Table 2 shows results that provide evidence about procurement of IT/IS in the selected public organisations. In the first row, all respondents agreed that their organisations use internet and email (N = 44, p = .000) in their operations. From the table, most respondents agreed that their organisations had IT/IS or data processing departments (N = 34, p = .000). The finding that all organisations use email and the internet means that these organisations embark on IT/IS procurement either directly or through outsourcing. The presence of the data processing or IT/IS department buttresses this evidence. This implies that respondents provided information based on their practical experience of procurement of IT/IS services and goods in their organisations.

Table 3: IT/IS Procurement Process

SN	Statement	Response	Observed N	Expected N	Residual
1	Procurement planning sufficiently carried out	Disagree	6	11	5
		Somewhat agree	23	11	-12
		Agree	12	11	-1
		Strongly Agree	3	11	8
2	Valuation and classification of	Strongly Disagree	2	8.8	6.8
		Disagree	15	8.8	-6.2

procurement contract well done	Somewhat agree	18	8.8	-9.2
	Agree	7	8.8	1.8
	Strongly Agree	2	8.8	6.8
The most suitable procurement method opted for	Disagree	3	11	8
	Somewhat agree	13	11	-2
	Agree	22	11	-11
	Strongly Agree	6	11	5
Tender dossiers were determined in the organization	Disagree	1	11	10
	Somewhat agree	18	11	-7
	Agree	18	11	-7
	Strongly Agree	7	11	4
Procurement contract publication is done in a suitable media and in good time	Disagree	3	11	8
	Somewhat agree	22	11	-11
	Agree	18	11	-7
	Strongly Agree	1	11	10
Opening and evaluation of tenders well done	Disagree	2	11	-9
	Somewhat agree	28	11	17
	Agree	9	11	-2
	Strongly Agree	5	11	-6
Procurement contracts are appropriately offered	Disagree	3	11	-8
	Somewhat agree	21	11	10
	Agree	14	11	3
	Strongly Agree	6	11	-5
The administration of contracts is generally well done	Disagree	3	14.7	-11.7
	Somewhat agree	24	14.7	9.3
	Strongly Agree	6	14.7	-8.7
All the above eight stages of procurement are systematically	Disagree	1	11	-10
	Somewhat agree	2	11	-9
observed	Agree	34	11	23
	Strongly Agree	7	11	-4
All procurement procedures	Disagree	2	11	-9
	Somewhat agree	9	11	-2

according to the Public Procurement Law 2003 (Act 663) are adhered to	Agree	30	11	19
	Strongly Agree	3	11	-8
There is a Public Procurement Act (Act 663) which guides in IT/IS procurement process	Disagree	3	11	-8
	Somewhat agree	21	11	10
	Agree	17	11	6
	Strongly Agree	3	11	-8

Table 3 shows results indicating the observance of each of the 8 stages of public procurement by organisations. From Table 3, most respondents generally agreed to the following statements: procurement planning sufficiently carried out; valuation and classification of procurement; the most suitable procurement method opted for; tender dossiers were determined in the organisation; procurement contract

publication is done in a suitable media and in good time; opening and evaluation of tenders well done; procurement contracts are appropriately offered; the administration of contracts is generally well done; all the above eight stages of procurement are systematically observed; all procurement procedures according to the Public Procurement Law 2003 (Act 663) are adhered to; and there is a Public Procurement Act (Act 663) which guides in IT/IS procurement process. With respect to the five levels of the likert scale used, most respondents chose somewhat agreed for all statements, except for the statements with serial numbers 4, 9 and 3. It could mean that the extent of prevalence of the statements is not strong. With respect to the first statement, this could mean that procurement planning sufficiently is carried out in most of the organisations but not to a high extent. With respect to statements with serial numbers 4, 9 and 10, the extent of prevalence of the statements is relatively higher.

Table 4 is associated with the chi-square test. This test is used to justify the fact that a significant majority of respondents either somewhat agreed or agreed to statements in Table 3, stressing the likelihood of these responses being more characteristic of the population than other responses. In Table 4, the chi-square test is significant for each statement at 5% significant level ($p < .05$). There is therefore sufficient evidence that all public organisations, in the process of procuring IT/IS services and goods, observe each stage of the public procurement procedure systematically, though not at a strong extent.

Table 4: Test Statistics: IT/IS Procurement Process

	Procurement planning sufficiently carried out	Valuation and classification of procurement contract well done	The most suitable procurement method opted for	Tender dossiers were determined in the organization	Procurement contract publication is done in a suitable media and in good time	Opening and evaluation of tenders well done	Procurement contracts are appropriately offered	The administration of contracts is generally well done	All the above eight stages of procurement are systematically observed	All procurement procedures according to the Public Procurement Law 2003 (Act 663) are adhered to	There is a Public Procurement Act (Act 663) which guides in IT/IS procurement process maintenance
Chi-Square	21.273 ^a	24.864 ^b	19.455 ^a	19.455 ^a	30.364 ^a	18.000 ^a	23.455 ^a	66.000 ^a	46.364 ^a	24.000 ^a	37.273 ^a
df	3	4	3	3	3	3	3	3	3	3	3
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 11.0.

b. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 8.8.

7. DISCUSSION

In this study, respondents fairly agreed that each of the stages and steps of the public procurement law or life cycle are systematically observed by public organisations in procuring services and goods relating to the application of information technologies and systems in public organisations. However, the nature of respondents' agreement in this regard indicates that the extent to which the procurement process is systematically followed by public organisations leaves much to be desired. In a developed country context, compliance

with the public procurement process by organisations is confirmed in the empirical study of Sporrang (2011). In a foreign and developing country context, this finding is also confirmed in the study of Othman et al. (2010). Interestingly, the studies of Sowuh (2014), Osei-Tutu et al. (2011), Gnanih (2012) and Ameyaw et al. (2012) support the result of this study in a Ghanaian context. Nonetheless, these Ghanaian-based studies, including those of Sporrang (2011) and Othman et al. (2010), were not focused on IT/IS services and goods or any other specific services and goods. However, result in the study of Astbrink & Tibben (2013) supports this

study's finding from the perspective of procurement of specific goods and service under the Public Procurement Law 2003 (Act 663). Even so, this support is not much considerable in the sense that their study was not based on a Ghanaian population. Evidently, more related studies are needed to buttress the result of this study.

This study's is also supported by the public procurement life cycle framework of Krasniqi (2012). This indicates that the public procurement process used in Ghana squares with international standards of public procurement.

8. CONCLUSION AND RECOMMENDATION

Based on findings of this study, it is concluded that public organisations in Accra, Ghana, procure services and goods relating to the application of information technology and systems according to the systematic process specified in the Public Procurement Law 2003 (Act 663) of Ghana. Thus public organisations systematically observe each stage and step of the public procurement life cycle. This reflects a considerable compliance with the Public Procurement Law 2003 (Act 663) by public organisations in the procurement of services and goods relating to the application of information technologies and systems. However, the extent of compliance with the law by public organisations can further be improved.

It is therefore recommended that public organisations improve and maximise their compliance with the Public Procurement Law 2003 (Act 663) to enhance the transparency, accountability and effectiveness of procuring IT/IS services and goods in public institutions in Ghana. There is also the need for more researches to be conducted on this subject in the context of other highly demanded products and services in Ghana. This would enhance public knowledge on how to gear the public procurement procedure towards procuring goods and services of high demand and relevance to economic growth in Ghana.

9. REFERENCES

- [1] Ameyaw, C., Mensah, S., Osei-Tutu, E. (2012). Public Procurement in Ghana: The Implementation Challenges to the Public Procurement Law 2003 (Act 663), *International Journal of Construction Supply Chain Management*, 2 (2): 55-65.
- [2] Anvuur, A., Kumaraswamy, M., Male, S. (2006). Taking Forward Public Procurement Reforms in Ghana, *Construction in Developing Economies: New Issues and Challenges*, January 18th - 20th; 2006 - Santiago, Chile, pp. 2-10.
- [3] Astbrink, S., Tibben, W. (2013). The role of public procurement in improving accessibility to ICT, *Telecommunications Journal of Australia*, 63 (2): 1-12.
- [4] Cole A. (2007). Procurement Definition, EzineArticles.com/?expert=Alison_Cole
- [5] Gnanih, E.L. (2012). Investigating the Effect of the Public Procurement Law on the Ghanaian Educational Sector, Bachelor's Thesis, Department of Business Administration, Ashesi University College Ghana, pp. 4-57.
- [6] Kotoka, A.F. (2012). Assessing the Level of Compliance with the Public Procurement Act 2003, (Act 663) In Public Entities in Ashanti Region of Ghana, Master's Thesis, School of Distance Education, Kwame Nkrumah University of Science and Technology, Kumasi, pp. 8-105.
- [7] Krasniqi, S. (2012). Public Procurement Procedures and Its Cycles, *IJRRAS*, 10 (1): 151-158.
- [8] Osei-Tutu, E., Mensah, S., Ameyaw, C. (2011). The Level of Compliance with the Public Procurement Act (Act 663) in Ghana, *Management and Innovation for a Sustainable Built Environment*, pp. 20-23.
- [9] Othman, R., Zakaria, H., Nordin, N., Shahidan, Z. Jusoff, K., (2010). The Malaysian Public Procurement's Prevalent System and its Weaknesses, *American Journal of Economics and Business Administration*, 2 (1): 6-11.
- [10] PPA (2013). Ensuring Compliance in Public Procurement through effective Monitoring & Evaluation, *Electronic Bulletin Ma*, 4 (3): 1-8.
- [11] RLG, The Growth of Ghana Dependent on the Application of Information Systems and Technologies: What can RLG do? *Management Report 2013*, pp. 3-15.
- [12] Sarfo, A. (2011), Assessing the effects of the procurement act in Ghana, *Public Financial Management Reform Series*, 16 (1): 77-90.
- [13] Singh, I., Punia, D.K. (2011). Employees Adoption of E-Procurement System: An Empirical Study, *International Journal of Managing Information Technology (IJMIT)*, 3 (4): 85-95.
- [14] Sowuh, O. (2014). The Role of Procurement in the Supply Chain of a Public Organization: A Case Study of Kwame Nkrumah University of Science and Technology, Master's Thesis, Ghana Institute of Management and Public Administration, Graduate School, pp. 3-6.
- [15] Sporrang, J (2011). Criteria in consultant selection: public procurement of architectural and engineering services, *Australasian Journal of Construction Economics and Building*, 11 (4) 59-76.

10. APPENDIX

No	Entity Name
1	Bank of Ghana
2	Parliament
3	National Commission For Civic Education
4	Electoral Commission
5	Commission on Human Rights and Administrative Justice
6	Ghana Audit Service
7	Council of State
8	Merchant Bank
9	Agricultural Development Bank
10	Students Loan Trust Fund
11	Judicial Service
12	MINISTRY OF WATER RESOURCES, WORKS And HOUSING
13	MINISTRY OF FOOD And AGRICULTURE
14	MINISTRY OF TRADE, INDUSTRY & COMMERCE
15	Ministry of Tourism
16	Ministry of Information
17	MINISTRY OF EDUCATION
18	MINISTRY OF DEFENCE
19	MINISTRY OF LOCAL GOVERNMENT AND RURAL DEVELOPMENT
20	MINISTRY OF FINANCE AND ECONOMIC PLANNING
21	MINISTRY OF JUSTICE AND ATTORNEY GENERAL
22	Ministry of Youth and Sports
23	MINISTRY OF FOREIGN AFFAIRS
24	MINISTRY OF HEALTH
25	MINISTRY OF ROADS AND HIGHWAYS
26	MINISTRY OF THE INTERIOR
27	MINISTRY OF CULTURE And CHIEFTAINCY
28	MINISTRY OF ENERGY
29	MINISTRY OF COMMUNICATION
30	Ministry of Employment and Social Welfare
31	Ministry of Environment Science and Technology
32	Ministry of Lands and Natural Resources
33	Ministry of Transport
34	Ministry of Women and Children Affairs
35	Accra Metropolitan Assembly
36	Tema Metropolitan Assembly
37	Dangme West
38	Dangme East
39	Ga East
40	Ga West (Ga)
41	Tema Municipal Assembly
42	Adenta
43	Weija
44	Ashaiman
45	Ledzokuku-Krowor
46	Ashaiman Municipal Assembly
47	Dangme West District Assembly
48	Microfinance and Small Loans Center (MASLOC)

49	Divestiture Implementation Committee
50	Ghana Aids Commission
51	Internal Audit Agency
52	President Committee on Emoluments (Political)
53	Pensions Reforms Implementation Committee
54	National Population Council
55	State Enterprise Commission
56	National Identification Authority
57	President Committee on Chieftancy
58	Office of Accountability
59	Ghana Investment Promotion Council
60	Greater Accra- Regional Co-ordinating Council
61	37 Military Hospital
62	National Cardiothoracic Centre
63	Ridge Hospital
64	Office of the Regional Health Directorate – Greater Accra Region
65	Ghana National Fire Service
66	Ghana-India Kofi Annan Center of Excellence
67	Irrigation Development Authority
68	Land Valuation Board
69	Forestry Commission
70	Department of Parks and Gardens
71	Department for Community Development
72	Public Utilities Regulatory Commission
73	Radiation Protection Board
74	Hydrological Services Department
75	National Nuclear Research Institute
76	Controller And Accountant General Dept
77	Ghana Atomic Energy Commission
78	Energy Commission
79	Lands Title Registry
80	National Communication Authority
81	Minerals Commission
82	National Road Safety Commission
83	Hotel Catering And Tourism Training Institute
84	Ghana Metrological Agency
85	Ghana Museum and Monument Board
86	Fisheries Commission
87	Organization of African Trade Union Unity
88	National Board for Small Scale Industries
89	GRATIS Foundation
90	Ghana Free Zones Board
91	Ghana Export Promotion Council
92	Pharmacy Council
93	Northern Region Rural – Integrated Programme (NORRIP)
94	Kpong Irrigation Centre
95	Biotechnical And Nuclear Agriculture Research Institute
96	Environmental Protection Agency
97	Registrar Generals Department
98	National Service Secretariat
99	Department of Children
100	Ghana Investment Fund For Electronic Communications

101	Noguchi Memorial Institute
102	Information Service Department
103	National Lottery Authority
104	West African Health Examination Board
105	St. John’s Ambulance Brigade
106	Navrongo Research Unit
107	National Health Insurance Authority
108	Ghana Standards Board
109	Lands Commission
110	Foods and Drugs Board
111	Community Water and Sanitation Agency
112	Council for Scientific and Industrial Research
113	Centre for Scientific Research Into Plant Medicine
114	Board For Traditional Medicine
115	Births and Death Registry
116	Dubois Centre
117	Office of Administrator of Stool Lands
118	National Commission on Culture
119	Chieftaincy Division
120	Millienium Development Authority
121	School of Social Work
122	National Labour Commission
123	Department Of Feeder Roads
124	Survey Department
125	Ghana Health Service
126	Ghana Police Service
127	Value Added Tax Service
128	National Coordinating Committee for Vocational And Technical Education (NACVET)
129	National Council for Tertiary Education
130	National Film and Television Institute
131	National Sports College
132	Non Formal Education Division
133	West African Examination Council
134	Ghana Veterinary Council
135	District Assembly Common fund
136	Ghana Tourist Board
137	Narcotics Control Board
138	Ghana Statistical Service
139	Internal Revenue Service
140	National Accreditation Board
141	National Media Commission
142	Public Procurement Authority
143	National Onchocerciasis Secretariat
144	Revenue Agency Governing Board
145	Driver and Vehicle Licensing Authority
146	Export Development and Investment Fund
147	National Development Planning Commission
148	Public Records And Archives Administration
149	Securities and Exchange Commission
150	State Enterprise Commission
151	Public Works Department
152	Criminal Investigation Department

153	Ghana Immigration Service
154	Ghana Prisons Service
155	Management Development And Productivity Institute
156	Ghana News Agency
157	National Pensions Regulatory Authority
158	National Board for Professional And Technical Examinations
159	Legal Aid Board
160	Economic and Organised Crime Office
161	Department of Rural Housing
162	National Petroleum Authority
163	Council for Technical and Vocational Education and Training
164	Department Of Urban Roads
165	Ghana Railway Development Authority
166	Ghana Revenue Authority
167	Bureau of National Investigations (BNI)
168	National Disaster Management Organization
169	Ghana Shippers Council
170	Ghana Irrigation Development Authority
171	Ghana Reinsurance Company Ltd
172	Ghana Book Development Council
173	Ghana National Commission for UNESCO
174	Ghana Library Board
175	Copyright Administration
176	Water Resources Commission
177	Ghana Education Service
178	Bureau of Ghanaian Languages
179	Custom, Excise and Preventive Service
180	Council for Law Reporting
181	Law Reform Commission
182	Department of National Lotteries
183	Bulk Oil Storage and Transportation
184	Ghana National Petroleum Corporation
185	Ghana Post Company
186	Volta Lake Transport Company Limited
187	Metro Mass Transport Ltd
188	Ghana Highway Authority
189	Tema Development Corporation
190	Ghana Broadcasting Corporation
191	Graphic Communication Group
192	State Housing Company Limited
193	Assembly Press Limited (Ghana Publishing Corporation)
194	National Insurance Commission
195	Ghana Supply Company
196	Ghana Water Company Limited
197	SIC Life Company Limited
198	Social Security and National Insurance Trust (SSNIT)
199	Tema Oil Refinery
200	Architectural And engineering Services Limited
201	Ghana Oil Company Limited
202	New Times Corporation
203	Ghana Civil Aviation Authority
204	Ghana Grid Company Ltd.

205	Ghana Airports Company Limited
206	Ghana International Airlines
207	GIHOC Distilleries
208	Ghana Trade Fair Company Limited
209	Volta River Authority
210	Ghana Food Distribution Corporation
211	Electricity Company of Ghana
212	Kpong Farms
213	National Theatre of Ghana
214	Bonsa Tyre Company Limited
215	Grains And Legumes Development Board
216	Tema Port
217	Ghana Cocoa Board
218	Ghana Railways Corporation
219	Ghana Ports And Harbours Authority
220	Precious Minerals Marketing Corporation
221	Volta Hotel
222	Korle bu Teaching Hospital