Reactive Adherence and the Myth of Ghana's Public Procurement Law: Insight from Public Hospitals

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ABSTRACT

The public health supply chain has transited through many phases as new models, tried and tested to define best practices and to improve the functional relationships within the sector. Yet like most public agencies, the health sector in Ghana is one of the sectors that have had difficulties with strict adherence to the provisions of the public procurement policies enacted in the Public Procurement Act (2003). We assemble and validate a collection of non-additive fuzzy integrals on data collected from 50 procurement officers in five public tertiary hospitals in these institutions. Consistent with existing literature, we note that political interference, individual level corruption, non-enforcement of punitive measures against offenders and other associated factors influences this trend. We observed that while the proposal for e-procurement could ameliorate the challenges of current procurement system, it is no stranger to potential manipulations based on experience of similar applications in handling port and educational services.

Keywords: Procurement, Law, Adherence, Challenges, Ghana, Fuzzy

INTRODUCTION

In December 2003, Ghana enacted its first Public Procurement Act (PPA) leading to the establishment of the Public Procurement Authority. As reported by Suleiman (2010) the new policy came to fill void created by the absence of a comprehensive regulatory policy or existing framework for public procurement activities, institutional arrangement, documentation and principal organisation for procurement. This is without prejudice to efforts by the Ghana National Procurement Agency (GNPA), Ghana Supply Company Limited (GSCL) and International development agencies to regulate procurements that related to their established mandates (Adjei (2005).

In essence the Public Procurement Act was established to offer clear general guidelines, regulations and administrative instructions to government institutions involved in procurement (Asiamah, 2015). In line with practices in other countries, the law enactment body wanted the new regulation to promote a fair and transparent process of supplier selection and public procurement. Asampana and Akanferi (2014) recall some of the classic work on public procurement in the context of its compliance and appropriateness in Ghana and beyond. This study highly recommends the research by (Astbrink & Tibben, 2013) because it is an industry example that examines public procurement process in a developed country context. Astbrink and Tibben (2013) found out that price was a dominant criterion for outsourcing engineering services. Krasniqi (2012) (reiterated in Asampana and Akanferi (2014) the suitability and offers and more comprehensive evidence about the public procurement process.

These include procurement planning, calculating the value and classification of the procurement contract and determining the procurement procedure. The next in the process is to prepare tender dossier, announce the contract (publication) and open and evaluate tenders. The procurement process ends with
giving and signing a contract and contract administration. Significantly processes are consistent with the Ghana’s Public Procurement Law 2003 (Act, 2003) (Asampana and Akanferi, 2014). Specifically, the health sector in Ghana has had difficulties with strict adherence to the provisions of the PPA. Technically, the Ghana public health sector operates a three-tier system for the management of health medicines and health supplies. The Central Medical Stores (CMS), the Regional Medical Stores (RMS) and Service Delivery Points (SDP) together with the transportation network constitute the pipeline for the supply chain (Adusei & Awunyo-Vitor, 2015). The CMS, a unit of the Procurement and Supply Directorate of the Ministry of Health (MoH), is responsible for the receipt, storage, and distribution of all commodities procured by the MoH. Lower levels get supplies from the CMS through the “pull” or “demand” system (Toku, 2015). The MoH currently has in place a number of vertical public sector supply chains based on the type of medicines and health supplies (Patrick Boateng Sarpong, 2017). While integration is currently taking place to look at a more rational way to combine the essential medicines, contraceptives and non-drug consumable supply chains, policy changes necessary to support this have not yet evolved. Currently, drugs are purchased by the Central Medical Stores (CMS) through international competitive bidding (ICB) and from local private suppliers and manufacturers (Antwi et al., 2014). The RMS and teaching hospitals are expected to procure drugs through the CMS and from the local private sector. All SDP are in turn expected to procure from the RMS in their respective regions. While it is MoH policy that facilities procurement through the public system, except in cases of unavailability, studies show significant private sector purchases at all levels. Although integration is taking place, there are still a number of district medical stores which procure from both the RMS and the local private sector. The teaching and regional hospitals and the over 900 SDP are supplied by an RMS, DMS and in many instances procure drugs through the local private sector (Kotoka, 2012). The transportation system for distribution of essential drugs is currently undergoing policy review within the MoH. As observed by (Patrick Boateng Sarpong, 2017) the public health supply chain in Ghana has over the past years gone through transformations with several models suggested, tested and/or tried in order to define best practices and to improve upon the functional relationships with other divisions within the health sector. On the whole there has been uniformity of practice across the country with a few localized systems set up in some settings due to peculiar circumstances (Health, 2009). These have been the exception rather than the rule and have almost always been the source of supply chain challenges in the sector. According to Suleiman (2010) the promulgation of the Public Procurement Act, Act 663 (2003) has impacted the public health supply chain in a variety of ways (Ameyaw, et al., 2012). The liberating force it has unleashed brings with it challenges which when harnessed would improve on procurement and distribution practices. The level playing field, the fairness or nondiscriminatory practices, the accountability and efficiency gains the process espouses should yield in the end a “value for money” spin off of which an incentive could be the provision of an enabling milieu through which the procurement system can splutter and grow. Unfortunately, there are inadequacies in the application of the Public Procurement Act leading to low availability and high cost of essential supplies in many public hospitals. (Agyekum-Kwatial, 2014) summarises this when he notes that the reactions to Act 663 from key stakeholders since its enactment more than a decade ago have been both positive and negative. Some view it as a universal remedy to the numerous problems that bedevil public procurement in Ghana. On the other hand, others see it as an instrument that over rely on competition and therefore inadequate and lack the needed strength to curb the various moral concerns that characterize public procurement practice (Health, 2009). Using the case of Ghana’s foremost hospital; Korle Bu Teaching Hospital (KTH) as a case study, (Agyekum-Kwatial, 2014) investigated the extent to which the objectives of the Public Procurement Act have been achieved. The findings show that some benefits achieved from using Act 663 include reduction in rework, transparency, accountability, and non-discrimination all of which work together to reduce corruption and save some cost. The findings revealed that while Act 663 is offering some solutions, there exist some challenges. Notable amongst them are lack of usage flexibility, the lack of independent procurement, difficulties in applying and implementing the Act due to political interference and uncooperative cultural attitudes to change, lack of proper record keeping and auditing function, and too small threshold for entities such as tertiary hospitals (Health, 2009). Thus, even where there seems to be frantic efforts to follow the law, there is some sense of reactive adherence where institutions knows or suspects that their behaviour is under scrutiny. Thus their perceived conformance to the PPA is in reaction to the regulators presence and hence is distorted from
reality. Our study explores the intrinsic and extrinsic barriers impeding adherence or fostering reactive adherence to the PPA in hospitals. Using non-additive fuzzy integrals, we rank and outline a hierarchy of compliance constraints to PPA in public hospitals. After outlining the research method and materials, we outline the analytical process and present our results. Policy implications from the research conclude this study.

MATERIALS AND METHODS

Data Sampling
The study sampled the views of 50 officers in charge of procurements in five referral hospitals in Ghana. 18 respondents were selected from the Korle Bu Teaching Hospital in Accra while 17 of them were selected from the Komfo Anokye Teaching Hospitals in Kumasi. These two institutions are the largest healthcare facilities in the country. Further 10 respondents were sampled from the responsible department at the Tamale Teaching Hospital which is the largest hospital in the northern part of the country while 8 respondents were also selected from the Cape Coast Teaching Hospital.

The latter is the latest tertiary hospital to be set up by the government of Ghana. Finally, 7 respondents were selected from the 37 military hospitals which is the largest military referral hospital in Ghana. Apart from services to the general public and serving officers of the Ghana Armed Forces, the 37 military hospitals is also a United Nations designated health centre for several West African countries whose healthcare systems have been devastated by the war. Respondents were selected based on their significance in the procurement process and the extent to which they interact with the procurement process, laws and agents in their procurement processes. The number of years respondents have been working with the institutions were also considered important in selecting them. Firstly it was necessary to look for people who worked in the system prior to the PPA.

This could offer critical information to unravelling the experiences under both the traditional and the regulated approach. Next it was also necessary to look for respondents that have undergone a wide range of training in procurement methods including the soon to be introduced electronic procurement system. These respondents were necessary to clarify the perception that electronic procurement is an indispensable cure to procurement abuses under the traditional method. Table 1 highlights the distribution of respondents selected from the various hospitals.

Table 1: The distribution of respondents selected from the various hospitals

<table>
<thead>
<tr>
<th>Name of Public Hospital</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Korle Bu Teaching Hospital</td>
<td>17</td>
</tr>
<tr>
<td>Komfo Anokye Teaching Hospital</td>
<td>18</td>
</tr>
<tr>
<td>Tamale Teaching Hospital</td>
<td>10</td>
</tr>
<tr>
<td>Cape Coast Central Hospital</td>
<td>8</td>
</tr>
<tr>
<td>37 Military Hospital</td>
<td>7</td>
</tr>
</tbody>
</table>

Over a period of six months, we conducted in-depth interviews with these departmental heads, procurement supervisors and other assistant supervisors and managers in charge of procurement units in the respective hospitals. Prior appointment was made with the respondents in telephone conversations which were followed with email reminders. Sample interview guides designating specific question were sent ahead of the interview dates. These served as guides to the semi-formally structured interview process used. More probing questions regarding respondents understanding, role and factors influencing the procurement process in their respective hospitals were collated.

We employed the services of key evaluators with significant knowledge in Ghana’s public procurement system to evaluate the responses based on content analysis. Individual range for the linguistic variables was graded based on their judgments within the range from 0-100. We used fuzzy addition and multiplication to retrieve the average fuzzy numbers for the priority values under each criterion for procurement strategy. These fuzzy judgment values of different evaluators regarding the same evaluation criteria were averaged.

Data Analysis
The fuzzy measure is a measure for representing the membership degree of an object in candidate sets. In 1974, Sugeno introduced the concept of fuzzy measure and fuzzy integral, generalizing the usual definition of a measure by replacing the usual additive property with a weak requirement, i.e. the monotonic property with respect to set inclusion. Sugeno and Terano have developed the $\lambda$ -additive
axiom (Sugeno and Terano, 1997) in order to reduce the difficulty of collecting information.

Let \((X, \beta, g)\) be a fuzzy measure space:

\[
\lambda \in (-\infty, \infty), \quad A \in \beta, \quad B \in \beta; \quad \text{and} \quad g(A \cup B) = g(A) + g(B) + \lambda g(A)g(B).
\]

Let set \(X = \{x_1, x_2, \ldots, x_n\}\) and the density of fuzzy measure \(g = g_i(x_i)\), which can be formulated as follows:

\[
g_i((x_1, x_2, \ldots, x_n)) = \sum_{i=1}^{n} g_i + \lambda \sum_{i=1}^{n} \sum_{j=i+1}^{n} g_i g_j + \cdots + \lambda^{n-1} g_1 g_2 \cdots g_n.
\]

For an evaluation case with two criteria, \(A\) and \(B\), there are three cases based on the above properties.

- **Case 1:** If \(\lambda > 0\), i.e., \(g_A(A \cup B) > g_A(A) + g_B(B)\), implying that \(A\) and \(B\) have a multiplicative effect.
- **Case 2:** If \(\lambda = 0\), i.e., \(g_A(A \cup B) = g_A(A) + g_B(B)\), implying that \(A\) and \(B\) have an additive effect.
- **Case 3:** If \(\lambda < 0\), i.e., \(g_A(A \cup B) < g_A(A) + g_B(B)\), implying that \(A\) and \(B\) have a substitutive effect.

In a fuzzy measure space \((X, \beta, g)\), let \(h\) be a measurable set function defined in the fuzzy measurable space. Then the definition of the fuzzy integral of \(h\) over \(A\) with respect to \(g\) is

\[
\int_A h(x) dg = \sup \{\alpha \wedge g(A \cap H_x) | H_x : \{x | h(x) \geq \alpha\}\}.
\]

A is the domain of the fuzzy integral. When \(A=X\), then \(A\) can be taken out. Next, the fuzzy integral calculation is described in the following. For the sake of simplification, consider a fuzzy measure \(g\) of \((X, \mathcal{N})\) where \(X\) is a finite set. Let \(h: x \rightarrow [0,1]\) and assume without loss of generality that the function \(h(x_i)\) is monotonically decreasing with respect to \(j\), i.e.,

\[
h(x_1) \geq h(x_2) \geq \cdots \geq h(x_n).
\]

To achieve this, the elements in \(X\) can be renumbered.

With this, we then have

\[
\int_A h(x) dg = \bigvee_{i=1}^{n} [f(x_i) \wedge g(x_i)],
\]

where \(X = \{x_1, x_2, \ldots, x_n\}, i = 1, 2, \ldots, n\).

In practice, \(h\) is the evaluated performance on a particular criterion for the alternatives, and \(g\) represents the weight of each criterion. The fuzzy integral of \(h\) with respect to \(g\) gives the overall evaluation of the alternative. In addition, we can use the same fuzzy measure using Choquet’s integral, defined as follows:

\[
\int h(x_i) g(X_i) + [h(x_i) - h(x_i)] g(X_{i+1}) + \cdots + [h(x_n) - h(x_1)] g(X_n)
\]

The fuzzy integral model can be used in a nonlinear situation since it does not need to assume the independence of each criterion. Specifically in this study, the fuzzy integral is used to combine assessments primarily because this model does not need to assume independence among the criteria. The fuzzy integral proposed by (M. Sugeno, 1974) and (Kwon. 1995) is then applied to combine the efficiency value of those related criteria to produce a new combined performance value. A brief overview of the fuzzy integral is presented here: Assume under general conditions,

\[
h(x_1^j) \geq \cdots \geq h(x_i^j) \geq \cdots \geq h(x_n^j),
\]

where \(h(x_i^j)\) is the performance value of the \(j\)-th alternative for the \(i\)-th criterion, the fuzzy integral of the fuzzy measure \(\mathcal{g}(\cdot)\) with respect to \(h(\cdot)\) on \(\mathcal{N}\) \((g: \mathcal{N} \rightarrow [0,1])\) can be defined as follows. (Chen Y.W and Tzeng, 2001; Chiou, 2002; Keeney R. and Faiffa, 1976):

\[
\int h(x_i^j) g(X_i^j) + [h(x_i^j) - h(x_i^j)] g(X_{i+1}^j) + \cdots + [h(x_i^j) - h(x_i^j)] g(X_n^j)
\]

where, \(g_i(X_i^j) = g_i([x_i^j, x_i^j]), \ g_i(X_{i+1}^j) = g_i([x_i^j, x_i^j]), \ldots, \ g_i(X_n^j) = g_i([x_i^j, \ldots, x_i^j])\)

The fuzzy measure of each individual criterion group \(g_i(X_i^j)\) can be

\[
\sum_{i=1}^{n} g_i(x_i^j) + \lambda \sum_{i=1}^{n} g_i(x_i^j) g_i(x_i^j) + \cdots + \lambda^{n-1} g_i(x_i^j) g_i(x_i^j)
\]

as follows:

\[
g_i(X_k^n) = g_i([x_k^j, \ldots, x_k^j])
\]

\[
\frac{1}{\lambda} \left[ \prod_{i=1}^{n} \left( 1 + \lambda g_i(x_i^j) \right) - 1 \right] \quad \text{for } -1 < \lambda < +\infty
\]

\(\lambda\) is the parameter that indicates the relationship among related criteria (if \(\lambda = 0\), equation (7) is an additive form, if \(\lambda \neq 0\), equation (7) is a non-additive form). The fuzzy integral defined by equation \((\int f dg)\) is called the Choquet integral.
RESULTS

Table 2: Results of Decision Factors on PPA Adoption Drawbacks

<table>
<thead>
<tr>
<th>DECISION CRITERIA</th>
<th>LOCAL WEIGHT</th>
<th>BNP OF OVERALL WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier Influence</td>
<td>(0.236 0.427</td>
<td>0.161</td>
</tr>
<tr>
<td>Low Threshold</td>
<td>(0.114 0.197</td>
<td>0.223</td>
</tr>
<tr>
<td>Individual Level Corruption</td>
<td>(0.263 0.437</td>
<td>0.476</td>
</tr>
<tr>
<td>System Bureaucracy</td>
<td>(0.130 0.242</td>
<td>0.268</td>
</tr>
<tr>
<td>Market Penetration</td>
<td>(0.066 0.124</td>
<td>0.139</td>
</tr>
<tr>
<td>Lack of Punitive Measures</td>
<td>(0.218 0.353</td>
<td>0.388</td>
</tr>
<tr>
<td>Ignorance of the Law</td>
<td>(0.119 0.211</td>
<td>0.232</td>
</tr>
<tr>
<td>Cost of Compliance</td>
<td>(0.081 0.143</td>
<td>0.160</td>
</tr>
<tr>
<td>Lack of Technical Support for User</td>
<td>(0.039 0.062</td>
<td>0.070</td>
</tr>
<tr>
<td>Mismatch of organization objectives and PPA Policy</td>
<td>(0.097 0.172</td>
<td>0.197</td>
</tr>
<tr>
<td>Political Interference</td>
<td>(0.235 0.412</td>
<td>0.571</td>
</tr>
<tr>
<td>Insufficient technical and managerial skills</td>
<td>(0.090 0.143</td>
<td>0.159</td>
</tr>
</tbody>
</table>

The information in table 2 provides the weight of factors perceived as contributing to the non-adherence or reactive adherence to the public procurement act by the various hospitals. In all the evidence shows that political interference, individual level corruption, lack of punitive measures and system bureaucracy were the factors with the highest weight hence contributes more to non-adherence than other factors. For example, the empirical evidence indicates that the weight of criteria such political influence or manipulation has a weight of (0.571), while individual level corruption has a fuzzy weight of 0.476 and ranks second in factor influence. The effect of lack of punitive measures (0.388) and system bureaucracy (0.268) were ranked next. Despite the minimal impact the study also underscored the importance of supplier resistance, supplier influence, mismatch of organization objectives and PPA policy, insufficient technical and managerial skills, low threshold, ignorance of the law, lack of punitive measures, lack of technical support for user etc as equally important factors that influence the drawback to public procurement policy adoption.

CONCLUSION AND POLICY IMPLICATION

Our objective in this research was to rank the factors mitigating the adherence to public procurement policies in Ghana. It is evident from the analysis that system interference (largely from political and individual sources) is the major factor that drives non-compliance to the public interest laws such as the public procurement law. Over the years there is a convergence of global wisdom on the need to introduce non-manipulative computerised or e-procurement system to guaranteed effective, fair and transparent procurement and the findings of this research support such initiatives. With the adoption of e-procurement system, buyer software can enable public hospitals to automate transactions and focus on their activities, such as order placement, catalogue management, payment, reporting, and so on. E Procurement is the new paradigm in procurement which acts as information hub to support business planning and decision making, which improves performance of routine tasks like transaction processing, monitoring and enforcement of regulatory compliance (Khanapuri, Nayak, Soni, Sharma, & Soni, 2011). For hospitals and other firms, e-Procurement means the integration of technological tools into purchasing activities taking place within supply chains while performing their operations (Bof & Previtali, 2007). In other words, e-Procurement is a deriving benefit attained from technological enhancements rather than using traditional paper based method in procurement operations. e-Procurement gains the advantage of electronic commerce (e-commerce) to determine potential supply alternatives, to purchase goods and services, to transfer the prices of these goods and services and to interact with suppliers (Angeles & Nath, 2007). Although the concept of e-Procurement has been widely implemented in the US and European markets, the emerging economies are still lagging in this aspect. Nevertheless, the government of Ghana is promoting e-Procurement as part of its ‘e-government’ governance initiative. E-Procurement is a comprehensive e-infrastructure that can help the government and hospitals and the citizens realize the vision of fuelling growth via profitable B2B e-Commerce, providing a robust, proven platform used by the largest companies in the world.
Despite the overwhelming evidence of the influence of the e-procurement in helping to improve transparency and fairness in the procurement, it is not an antidote to the challenges of current procurement system considering that related measures adopted in other sectors of public policy formulation have not eradicated the twin challenges of interference and corruption. For example, introduction of a computerised scanning system at the Ports and Harbours as well as the introduction of the National Computerised Placement system for selection into high schools in Ghana are all related measures but are fraught with manipulation and endemic corruption as reported in various media platforms in Ghana. There is the suggestion that failure to crack the whip or implement prescribed punitive measures outlined in such national policy documents is a major source of challenge to effective implementation and this is supported by the empirical work in this research. This implies that while greater effort is invested into ensuring adoption of e-commerce, there is the need to enforce related punitive measures to serve as deterrent to others who may be nurturing the ambition to do likewise.

List of References


