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Preventing Procurement Corruption in the Health Sector of Ghana: A Factor and Principal Component Analysis

Godfred Owusu-Bempah[1, 2*] Dennis Amoako[2] Richmond Frempong[2] Effah Assampong[2]
1. All Nations University, PO box KF 1908, Koforidua, Ghana
2. Koforidua Polytechnic, P.O Box 981, Koforidua, Ghana
* gowusubempah@yahoo.com

Abstract

A report by the World Bank called "Quiet Corruption" has revealed that 95 per cent of resources allocated to the health sector in Ghana was diverted into the pockets of individuals. Ghana is second to Chad in terms of the most corrupt when it comes to managing resources in the health sector in Africa."Quiet Corruption" is an annual Africa Development Indicators report that revealed that the problem of corruption goes beyond bribes and graft and affects health, education, and agriculture sectors on the continent. As the Commission on Human Rights and Administrative Justice (CHRAJ) and other government agencies have not been able to map up the right programmes to prevent the further aggravation of the sordid situation, it was therefore important for a researchers to ascertain how to tackle corruption in Ghana. The sample size covered 72 experts in the two biggest hospitals in the country (Korle-Bu Teaching hospital and Komfo Anokye Teaching Hospital). This included all the 18 top officials of the two hospitals, 36 procurement officials, 12 IT officials, and 6 accountants. The quota sampling technique ensured that the non top managers (officials) selected occurred in the ratio 3:2:1 respectively. The ratio indicated the level of involvement of these officials in the procurement process of the hospitals. Those who were more involved in procurement practices and adequately knowledgeable had greater representation in the sample. Their views were analysed with Factor Analysis and Principal Component Analysis. These tools were used to establish the relative importance of measures used to prevent corruption in procurement. The relative importance of the elements of appeared in the following order: The use of good rules, Putting in place efficient management systems, Enhancing access to information and Promoting integrity among officials. This is the order of priority that must be given to the elements used in preventing corruption in the health sector of Ghana.

Keywords: Corruption, Procurement, Fraud, Good rules, transparency and monitoring

2.0 Introduction

Experts identify procurement as one of the areas most prone to corruption in the health and education sectors. Corruption in procurement affects the efficiency of public spending and donors' resources, creates waste and, ultimately, affects the quality of health and education services and the opportunities they present to improve quality of life.

2.0 Theoreothical Background

2.1 Reports on corruption in the health sector of Ghana

A report by the World Bank called "Quiet Corruption" has revealed that 95 per cent of resources allocated to the health sector in Ghana was diverted into the pockets of individuals. Ghana is second to Chad in terms of the most corrupt when it comes to managing resources in the health sector in Africa.“Quiet Corruption” is an annual Africa Development Indicators report that revealed that the problem of corruption goes beyond bribes and graft and affects health, education, and agriculture sectors on the continent.

The 2010 report painted a gloomy picture of Ghana’s health sector alleging that officials are failing to deliver government goods and services to the ordinary people they are aimed at. (Gardener, 2012)

The sordid situation has saddened the Commission on Human Rights and Administrative Justice (CHRAJ). The commission said it has begun developing vigorous programmes to change the attitude of Ghanaians when it comes to corruption. A mystery shopping survey conducted on quality of service provided by the nation’s health facilities has revealed some level of malpractices which do not auger well for the image of the service.

Mystery shopping is field-based marketing and research technique in which researchers pose as customers to gather information about product quality and service delivery of a company. The research revealed that while some of the facilities were charging illegal fees those who charged, the appropriate fees also failed to issue receipts to clients. It also uncovered that some of the staff were involved in illegal or private sale of drugs to patients and, in some cases, found out that there was unauthorised trading within wards. (Safo, 2011)

2.2 Cases of corruption in Korle-Bu Teaching Hospital (The nation’s premier hospital)

Omane, K. (2011) indicates that auditors at Korle-Bu, the nation's premier teaching hospital, have uncovered corruption in the hospital's procurement process that may be a cue to massive embezzlement that may have gone undetected for some time, specifically in the Supplies Department (Central Stores) of the hospital.

After months of investigations it has emerged that the director of the department, abused the due process of procurement and purchased items that would last 17 years. A case in point is what is called 'Post Operative Charts' that are used to monitor patients' progress. The quantity ordered is estimated to last till 2019. Worse still, that type of charts had been officially banned by the authorities of the hospital and worldwide since 1989.The procurement officials flouted the order and accommodated those obsolete items for the hospital in 1999 and 2000. This revelation by the auditors has raised eye-brows and concern about the management of the resources of the hospital, which had gone 'HIPC' for years now. (Omane, 2011)

In an attempt to track down mismanagement and corruption in the premier hospital, the Board of Directors during their 80th general meeting in 2001 charged the internal auditors to investigate allegations of corruption and 'serious breach of procurement procedures 'by Central Stores. The auditors' investigations were to cover a review of the procurement practices and substantiation of the supplies delivered to the hospital between theperiod1999andFebruary2001.(Omane,2011)

Apart from the post operative charts it also came to light that the procurement official purchased 'Report Mounting Sheets' that would last 7.5 years. The report, which was signed by the chief internal auditor, and dated March 22, 2002, made interesting reading as a number of revelations are featured in the four-page report. The report revealed that 'NO PURCHASE REQUISITION' was maintained by the supplies division, which is a formal notification from the storekeepers to the suppliers to initiate processes for the purchase of goods.

The auditors discovered that no maximum and minimum stock levels as well as re-order quantity and re-order stock level had been instituted for each item of stock kept by the Central Stores. This, therefore, meant that one could not determine the basis upon which the quantum of stocks bought was arrived at. It all started in 1999 when the head of procurement office decided to do his own thing. He corrupted the procurement process and over-ordered 190,000 of 'obsolete' charts, though the financial cost was not as heavy. The hospital was no longer using that type of charts.

In spite of excessive stock held at the close of 1999, in May 2000 he further ordered for the supply of 50,000 of the same obsolete charts. The report revealed that in 1999, out of the 190,000 copies ordered, only 19,000 were used, while in 2000 only 6,000 of the charts were used. An average of 12,500 was registered yearly. Currently about 215,000 copies of the charts are held in stock. Additionally, the investigations revealed that the operative charts were re-designed in 1998. (Omane,2011)

However, the orders placed for the hospital in 1999 and in 2000 were of the old design and most of the charts were being used as jotters. On the Report Mounting Sheet, the report revealed that a total delivery in 1999 and 2000 came to 5,000,000 sheets whereas an average yearly use is rated at 52,000 sheets and at the close of year 2000, stock held was 395,000 sheets. This represents 7.5years. Additionally, Cannula-24G delivered between 1999 and 2001 was 67,300 units. The expected stock held as at February 2001 was 10,810 units. This means that the hospital uses an average of 18,830 units and as at February 2001, stock held was less than one year.

However, investigations revealed that instead of 10,810 units that should be in store at the close of February 2001, a physical stock of 4,993 units was sighted during the auditing.

Thus, a stock shortage of 5,817 units costing ¢34,902,000 was recorded. This shortage was detected in the Child Health Sub-BMC store. Besides, on August 25, 2000, some 5,200 units of Life Care Cannula, costing ¢20,020,000, was reported to be defective as it broke up often when used.(Omane, 2011)

The auditors concluded that since the stock procurements are financed from the hospital budgetary allocation which caters essentially for the budget period, the hospital stock holding should not exceed one year's consumption.Thus Korle-Bu had been holding excess stock that in one instance would last 17.2 years and in the other 7.5 years. The auditors, therefore, recommended that both head of procurement and the assistant storekeeper in charge of the Child Health Sub-BUC store, be held accountable.

(Omane,2011)

2.3 Preventing corruption in procurement practices

According to Barnnes (2009) good rules, transparency and monitoring are three elements that help to prevent corruption in this area.

- In the case of absent rules or rules which can be manipulated to one's advantage, donors should assist governments in elaborating and enforcing procurement laws and procedural guidelines which comply with international standards.

- These procurement rules should at least minimise confidentiality, state open bidding from pre-qualified suppliers as a principle, guarantee access to information, and make sure bidding documents, procedures, evaluations and awards are publicly and timely available. Access to information can be provided through

documentation and communication systems, including online systems, where information can be shared with auditors, complainants and the general public. Tools for improving electronic procurement systems are supported by the World Bank and other donors.

- Efficient management is one of the most effective preventive mechanisms. It promotes transparency and accountability, facilitates oversight and citizen participation, and brings legitimacy to governmental decisions. Rules that follow these principles also provide a good basis to prevent corruption. Written procurement procedures should outline the whole process, using explicit criteria to award contracts.

- Rules are not enough, however, and law enforcement mechanisms are often weak. Monitoring by local experts and independent oversight agencies can help make existing norms effective. Civil society also has an important role to play in monitoring.

- Donors can also promote integrity in the private sector, e.g. through information campaigns for small and medium sized businesses. It is the latter who lose out in corrupt procurement deals as larger firms can more easily afford to position themselves vis-à-vis decision-makers. (Barnnes, 2009)

3.0 Methodology

3.1 Respondents

The respondents for this study were from the two biggest hospitals in Ghana namely Korle-bu Teaching Hospital in the Greater Accra Region and the Komfo Anokye Teaching Hospital in the Ashanti Region of Ghana. The study was conducted during the period between May and July 2012 through a structured questionnaire. The sample size covered 72 experts in health sector procurement in Ghana. This included all the 18 top officials of the three institutions, 36 procurement officials, 12 IT officials, and 6 accountants. The quota sampling technique ensured that the non top managers (officials) selected occurred in the ratio 3:2:1 respectively. The ratio indicated the level of involvement of these officials in the procurement process. Those who were more involved in procurement practices and adequately knowledgeable had greater representation in the sample.

3.2 Instrument

Participants were asked to evaluate the importance of 30 variables, identified from the literature and personal interviews as potentially influencing the importance of the tools used in preventing corruption, by making five choices for every one of the 30 variables: “extremely important” for the variables which were considered to have the highest importance to the health sector and “not important” for the variables considered to having no influence on preventing corruption in the health sector.

4.0 Results And Discussions

Factor Analysis:

A principal component analyses with a varimax rotation was conducted to determine the reliability and the factorability of the items. The Kaiser-Meyer-Oklin Measure of Sampling Adequacy is employed to examine the

appropriateness of the data for factor analysis. High values (between 0.5 and 1) indicate that the factor analysis is appropriate. The results indicate that the Kaiser Meyer-Oklin value was 0.597 which is higher than the recommended minimum of 0.5 (Kaiser, 1974). Further, Bartlett's Test of Sphericity is a test statistics used to examine the hypothesis that the variables are uncorrelated in the population. Bartlett's test of sphericity (Barlett, 1954) was significant indicating a good factorability of the correlation matrix. As illustrated in Appendix A, all the items loaded well on their factors.

Table 4.2: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.769	13.626	13.626	4.769	13.626	13.626
2	3.493	9.979	23.605	3.493	9.979	23.605
3	3.057	8.734	32.339	3.057	8.734	32.339
4	2.845	8.129	40.468	2.845	8.129	40.468
5	2.406	6.875	47.344	2.406	6.875	47.344
6	2.097	5.992	53.336	2.097	5.992	53.336
7	1.393	3.980	66.876	1.393	3.980	66.876
8	1.295	3.700	70.576	1.295	3.700	70.576
9	1.204	3.439	74.015	1.204	3.439	74.015
10	1.158	3.309	77.324	1.158	3.309	77.324

(full table can be found in the appendix)

Source: Results from PCA

The eigenvalue represents the total variance explained by each factor. The eigenvalue was used to select factors that recorded high variances. The higher the variance, the more important the factor is. In essence, the eigenvalue was used to rate the importance of the elements used in preventing corruption. This means that stakeholders must place more importance on the factors or elements that recorded higher scores than those that recorded lower scores.

From the results of the total variance explained, it can be seen that only 10 out of the 30 components can be examined. This was because the rest had no extraction sums of squared loadings.

Selection of values above 0.5

From the principal component analysis in the appendix , the following factors were found to be the most important factors in preventing corruption in the health sector of Ghana. A value of 0.5 indicates a high level of importance for the factors

Table 4.4 Summary of results from PCA

The level of sustainability in using appropriate **rules** to prevent corruption in the health sector	.547
The success rate in using appropriate **rules** in preventing corruption in the health sector	.751
The required level by which **enhanced access to information** can be used to prevent corruption in health delivery	.557
The success rate in using **enhanced access to information** in preventing corruption in the health sector	.662
The level of sustainability in using **efficient management** to prevent corruption in the health sector	.549
The required level by which **efficient management** monitoring can be used to prevent corruption in health delivery	.692
The level of sustainability in using **promoting integrity** to prevent corruption in the health sector	.750

RATING THE ELEMENTS USED IN PREVENTING CORRUPTION

Inferring from the above table, the ratings of the elements in preventing corruption appear in the following order of importance:

1. The use of good rules
2. Putting in place efficient management systems
3. Enhanced access to information
4. Promoting integrity among officials

Conclusion:

Out of the total 30 variables, it is found out that the importance of the measures in preventing heath sector corruption in Ghana appear in the following order of importance: The use of good rules, Putting in place efficient management systems, Enhanced access to information, and Promoting integrity among officials. In investing in resources to prevent corruption in the health sector of Ghana, stakeholders must first of all focus energies and resources on devising and implementing good rules. After that they need to put efficient management systems in place and then enhance access to information by all stakeholders. The last thing to do is to promote integrity among officials.

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APPENDIX A

Table 4.1: KMO and Bartlett's Test

KMO and Bartlett's Test

Table 4.1

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.597
Bartlett's Test of Sphericity	Approx. Chi-Square	2.166E3
	Df	597
	Sig.	.000

Source: Results from factor analysis

TABLE 4.3 COMPONENT MATRIX

	1	2	3	4	5	6	7	8	9	10
The importance of rules in prevention corruption in the health sector of Ghana	-.081	.254	.069	-.012	.648	.033	.073	.194	-.095	.365
The required level of attention that must be dedicated to developing appropriate rules	-.150	-.370	.135	-.124	-.151	-.183	-.013	-.310	.525	.221
The required level by which rules can be used to prevent corruption in health delivery	.219	-.439	.181	.457	-.063	-.029	-.146	.255	.125	-.186
The success rate in using appropriate rules in preventing corruption in the health sector	.751	-.074	.171	.021	.050	.003	-.030	.002	.030	-.011
The level of sustainability in using appropriate rules to prevent corruption in the health sector	.547	.338	-.190	.022	-.410	-.412	-.094	-.075	.120	.127
The importance of enhanced access to information in prevention corruption in the health sector of Ghana	-.193	.396	-.530	.463	-.102	-.083	-.153	-.072	-.042	.259
The required level of attention that must be dedicated to enhancing the access to information	.016	-.112	.058	.103	.535	-.296	.361	-.197	.058	-.248

The required level by which enhanced access to information can be used to prevent corruption in health delivery	.557	-.175	-.101	-.185	-.045	.343	.145	.167	.339	-.015
The success rate in using enhanced access to information in preventing corruption in the health sector	.662	.214	.029	.109	-.228	-.155	.013	-.182	-.191	.001
The level of sustainability in using enhanced access to information to prevent corruption in the health sector	.433	-.171	-.419	-.329	.250	.147	-.077	-.069	-.264	-.050
The importance of improved monitoring in preventing corruption in the health sector of Ghana	.145	.093	-.333	-.103	-.317	.093	-.043	.542	.046	.075
The required level of attention that must be dedicated to improved monitoring	-.240	-.024	-.190	.634	.044	-.047	.366	.046	-.160	-.139
The required level by which improved monitoring can be used to prevent corruption in health delivery	.440	-.188	-.428	.229	.075	.269	-.211	-.243	.123	-.088
The success rate in using improved monitoring in preventing corruption in the health sector	.388	.291	-.286	-.085	.245	.288	.025	-.312	.157	-.135
The level of sustainability in using improved monitoring to prevent corruption in the health sector	.422	-.023	.373	.216	-.019	-.317	.264	-.285	.003	.179
The importance of efficient management in prevention corruption in the health sector of Ghana	-.141	.478	.351	.119	-.024	.253	-.111	.134	.470	-.324
The required level of attention that must be dedicated to efficient management	.087	-.233	-.248	.777	-.060	.064	-.016	.006	.228	-.107
The success rate in using efficient management in preventing corruption in the health sector	.161	-.283	-.203	.218	.423	.488	-.068	-.072	-.060	.208
The required level by which efficient management monitoring can be used to prevent corruption in health delivery	.378	-.073	.471	.100	.121	-.279	-.356	-.050	-.242	-.337
The level of sustainability in using efficient management to prevent corruption in the health sector	.549	.467	.048	.022	.209	-.211	-.239	-.050	.110	.102

The importance of efficient management in prevention corruption in the health sector of Ghana	.499	-.122	-.119	-.243	-.465	.254	.238	.095	-.229	-.009
The required level of attention that must be dedicated to efficient management	.498	.064	.227	-.215	.229	.047	.176	.255	.110	.187
The required level by which efficient management monitoring can be used to prevent corruption in health delivery	.692	.068	.045	-.273	-.368	.129	.204	-.106	.072	.031
The success rate in using enhanced access to information in preventing corruption	-.036	.804	-.073	.049	-.061	-.038	.184	-.051	-.185	-.179
The level of sustainability in using efficient management to prevent corruption in the health sector	.104	.197	.644	.220	-.012	.106	.259	-.069	-.008	.321
The importance of promoting integrity in prevention corruption in the health sector of Ghana	-.452	.196	.387	-.022	-.243	.256	-.276	-.055	-.079	.335
The required level of attention that must be dedicated to promoting integrity	.180	.578	-.386	.545	-.180	.053	-.025	.055	-.027	.114
The required level by which promoting integrity can be used to prevent corruption in health delivery	.470	.043	.383	.117	.225	.173	.027	.202	-.187	-.067
The success rate in using promoting integrity to in preventing corruption	.214	-.009	-.415	-.061	.281	-.480	.085	.023	.083	.107
The level of sustainability in using promoting integrity to prevent corruption in the health sector	.750	-.076	.173	.021	.052	.005	-.032	.005	.032	-.013

The choice of the PCA was to transform the data set which has a huge dimension to a new data set with a smaller dimension

APPENDIX B

TABLE 4.2 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.769	13.626	13.626	4.769	13.626	13.626
2	3.493	9.979	23.605	3.493	9.979	23.605
3	3.057	8.734	32.339	3.057	8.734	32.339

4	2.845	8.129	40.468	2.845	8.129	40.468
5	2.406	6.875	47.344	2.406	6.875	47.344
6	2.097	5.992	53.336	2.097	5.992	53.336
7	1.758	5.023	58.359	1.758	5.023	58.359
8	1.588	4.537	62.895	1.588	4.537	62.895
9	1.393	3.980	66.876	1.393	3.980	66.876
10	1.295	3.700	70.576	1.295	3.700	70.576
11	1.204	3.439	74.015			
12	1.158	3.309	77.324			
13	.986	2.818	80.142			
14	.953	2.723	82.865			
15	.768	2.193	85.058			
16	.652	1.862	86.919			
17	.617	1.761	88.681			
18	.553	1.581	90.261			
19	.533	1.524	91.785			
20	.414	1.182	92.967			
21	.343	.981	93.948			
22	.303	.865	94.812			
23	.296	.845	95.657			
24	.245	.701	96.358			
25	.208	.593	96.951			
26	.182	.519	97.470			
27	.165	.471	97.941			
28	.154	.440	98.381			
29	.129	.367	98.748			
30	.114	.327	99.075			

Extraction Method: Principal Component Analysis.