RESEARCH ARTICLE

Public procurement accounting as a tool to end corruption in Ghana: Forensic Accounting Perspective

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Abstract

This study's goal was to show how, by applying natural principles to human laws, forensic accounting might be utilized as a tactic to combat corruption in public procurement. Ten public universities in Ghana were selected for the survey, and in 2023 it examined views regarding policy fairness, government performance, and deterrent. 109 questionnaires were distributed to the procurement officers of the selected institutions using a simple random sampling. The collected data were subjected to a multiple linear regression analysis using the Smart PLS software. The study concluded that forensic accounting was ineffective in stopping procurement misconduct. It also discovered that there is currently very little usage of forensic accounting by the government. Governments at all levels ought to be more interested in forensic accounting and accountants, the report suggests, in order to keep an eye on and look into fraud cases that have been shown to be fraudulent. The management of the procurement authority needs to improve the criminology training provided to accountants and auditors. This training should concentrate on topics such as the nature and extent of financial crimes, ethical concerns, investigation, and remediation. This is necessary if forensic science is to be utilized as the primary tool for corruption and fraud prevention. The administration must also give careful consideration to the impartiality, independence, and reason of the courts.

Keywords: Forensic Accounting; Corruption Prevention; Public Procurement

Introduction

A lot of people don't know how important forensic accounting is for settling disputes that can't be settled within the parameters of the rules of evidence. The use of financial and investigative abilities to open cases within the framework of the rules of evidence is known as forensic accounting, or investigative accounting. Accounting in many different countries and have been making conscious and unconscious attempts to commit fraud. For this reason, forensic accounting gained widespread notice in the 1930s when CPA Frank Wilson was assigned to investigate the financial activities of infamous criminal Al Capone. This has led to several research on forensic accounting by academics all around the world, but the findings have been contradictory and ambiguous on the actual impact of forensic accounting in poor countries like Ghana. Moreover, rather than focusing on the prevention of corruption, most research to date has focused on the use of forensic accounting in corruption detection. Moreover, the bulk of study emphasis is directed toward banks and well-functioning stock markets, with little attention paid to other industries. Thus, it makes sense to carry out an empirical inquiry into the influence of forensic accounting on public procurement as a novel strategy to corruption prevention in Ghanaian public universities.

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Literature Review

Introduction

When it comes to obtaining the materials, labor, and services required for government programs and projects, the procurement process is an essential component of the financial system of the government. It all comes down to how the public sector purchases products and services. Public authorities' purchases of products and services might potentially fall under this category. The Ghana Institute of Procurement and Supply defines procurement as the acquisition of products, works, consultation, or other services by hiring, purchasing, or any other contractual methods. The process of acquiring products or services from a public institution using public funding is another definition of public procurement. The major role is hence the procurement of products, which may also entail the acquisition of services.

Theoretical Review

Public Procurement Act and forensic accounting's deterrent effects

The people must be discouraged by the current procurement act. In international politics, deterrence is the technique of preventing someone, generally a nation-state, from acting in an undesirable way. It involves instilling terror in people, communities, and states, making them afraid to do or repeat illegal acts. In Ghana, one of the goals of the criminal code is to dissuade potential offenders. This clause allows for either broad or specific deterrent.

While the special deterrence effect aims to stop a person from committing new crimes, the general deterrence effect's main goal is to dissuade the broader population from participating in future criminal acts. Therefore, it is imperative that the Ghanaian Procurement Act be formulated appropriately.

Government's anticipated role in Corruption Prevention

Public procurement is one of the government functions that is most vulnerable to corruption. Aside from the amount of transactions and the financial interests at play, other factors that raise the danger of corruption include the complexity of the process, the tight relationship between

public officials and corporations, and the huge number of parties. The direct costs of corruption include lower-quality goods, services, and work; increased costs; and misallocations that result in the loss of public monies. It is anticipated that a government would be able to reduce procurement fraud and corruption with the aid of the principles of integrity, openness, stakeholder involvement, accessibility, electronic procurement, and supervision and control.

The Procurement Act of Ghana

Public procurement is a government process that is particularly vulnerable to corruption. The multitude of players, the volume of transactions, and the financial interests at stake all contribute to the heightened danger of corruption, as does the complexity of the process and the tight link between public officials and corporations. Reduced quality of goods, services, and works; increased costs; and loss of public monies owing to misallocations are some of the direct consequences of corruption. Governments are supposed to reduce procurement fraud and corruption by implementing the following principles: integrity, openness, stakeholder involvement, accessibility, electronic procurement, and supervision and control.

Empirical Reviews

When Enofe (2019) discusses the use of forensic accounting in emerging economies such as Nigeria, she points out that there are several obstacles in the way. However, Indian stock corporations have been adopting computer forensic accounting tools and data mining techniques to ignore the organization's internal auditing system failure. Muhammad Aminu Isa and Shafi'u Abubakar Kurf (2020) provide more evidence of the efficacy of forensic accounting in fraud investigations. The standard of internal control in Nigerian businesses. Research conducted in 2017 by Bassey Eyo, Ahonkhai, and Ohimai Ebahi indicates that the discovery of fraud in Nigerian enterprises is mostly unaffected by forensic accounting and litigation support.

Conceptual framework of the study

With this in mind, and after reading a plethora of literature (books, articles, journals, etc.), we made an effort to construct the conceptual framework of this study in three parts. The purpose of the study is to investigate the impact

of forensic accounting on corruption prevention in its entirety, so the following section presents the hypotheses that have been developed along with the conceptual framework that supports them. The hypotheses were developed through careful comprehension and articulation of a wide range of literatures (theoretical and empirical) that are then put to the test.

Hypothesizes

H1: Forensic accounting can help avoid procurement fraud.

H2: To combat corruption, the government is arming itself with forensic accounting.

H3: The policy is in favor of using forensic accounting to combat corruption.

Table 1: Conceptual Framework
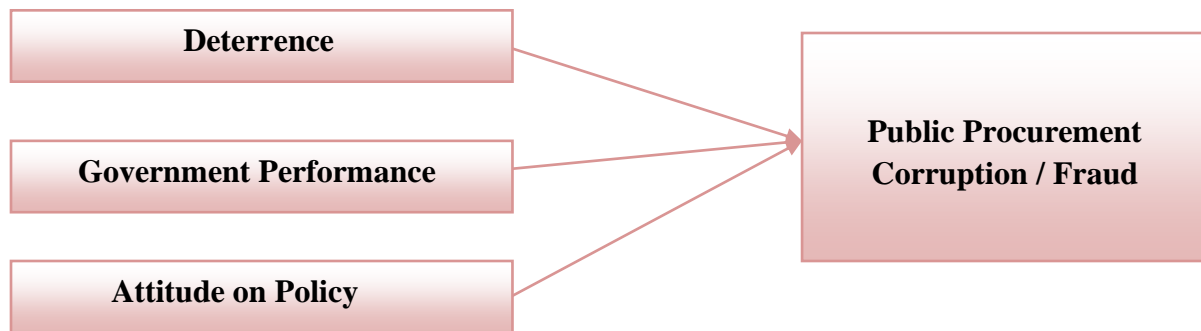
Source: Deterrence theory, Social psychology, theory of planned behavior and prior studies

Methodology

This study employed an explanatory research design and a quantitative research technique to offer new insights into quantifying the effect of forensic accounting on public procurement. In 2023, 151 procurement officials employed by 10 of the oldest public institutions in Ghana were the subjects of a research aimed at better understanding the ways in which their vast expertise influences their behavior. To choose sample units from the 10 public institutions, a proportional simple random cluster sampling approach

$$= \frac{151}{1 + 151(0.05)^2} = 109$$

was used. This resulted from the universities' inherent mutual exclusion, which caused the research to split them up into clusters. Because samples were chosen from each stratum to conduct the study simultaneously, it improved the representativeness of the samples and increased the study's effectiveness and cost efficiency.

As a result, the following Yamane (1967) formula was used to choose responders from the entire population:

$$n = \frac{N}{(1+N(e)^2}$$

Where; n = required sample size, N= total population and Ne= margin of error.

The choice of the data collection method is done after choosing a problem-solving research design. The information was gathered via a questionnaire with a total of sixteen (16) items and a five-point Likert scale that was structured and closed-ended.

Each responder received a single copy of the questionnaire that was presented in the same order and had exactly the same wording. The researcher also needed to consider the sequence in which the questions should be answered while designing the questionnaire. The researcher used trained research assistants to make sure that responders understood every question. This was done to guarantee both the quality of the data acquired by the questionnaire and the quality of the questions on it.

A quantitative data analysis approach was utilized to explain the population from the sample utilizing descriptive and inferential statistics tools in order to organize, summarize, analyze, and explain the data in this study. After data collection was finished, data were coded, modified, and loaded into Smart PLS to ascertain the influence of independent factors on procurement fraud (corruption). The mean index was then used to aggregate a set of Likert type items representing related qualities into a single composite variable.

As a result, the study used the analytical model described below:

$PF = \beta_0 + \beta_1 D + \beta_2 GP + \beta_3 POF + \varepsilon$; which later gave the following equation.

Where; **PF/C** = Procurement Fraud / Corruption

D = Deterrence

GP = Government Performance

PoF = Policy Fairness

Prior to conducting the basic regression, the study proceeded with the regression process after conducting all necessary diagnostic tests of the model. In order to ensure the reliability of the instrument and prevent ambiguity in the study, 0.918 was assigned to the internal consistency of the instrument using Chronbach's alpha prior to the actual investigation.

Results and Discussion

109 procurement officials from the ten public institutions that were chosen for the study were given questionnaires, which were then utilized for additional analysis. The model was resilient and suited for additional regression after passing all necessary diagnostic tests for the assumptions of the classical linear regression model, including the error having zero mean, heteroskedasticity, auto correlation, normality, and multi-collinearity.

Table 2: Regression Result
Dependent Variable: PF / C
Sample: 1109
Included observations: 109

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.907087	0.106928	45.89130	0.0000
D	-0.094366	0.045836	-2.058764	0.0404
GP	-0.257403	0.092754	-2.775125	0.0059
POF	-0.097726	0.068121	-1.434594	0.1525
R-squared	0.537703	Durbin-Watson stat		1.816171
Adjusted R-squared	0.529732			
Prob. (F-statistic)	0.230310			.

Source: Survey of sampling units and own computation, 2023

Since the R-squared values indicate how well the regression model explains the actual fluctuations in the dependent variable, it is possible to infer from the preceding table that the regression results showed the impact of explanatory factors on the dependent variable.

The table's corrected R2 value shows that the forensic accounting variables in the model accounted for 52.97% of the variability in public procurement fraud. The null hypothesis, according to which all of the coefficients are collectively zero, should be rejected, as shown by the regression F-statistic (23.03) and the p-value of zero associated with the test statistic. It suggests that changes in the dependent variable might be explained by the independent variables in the model.

The hypothesis behind this study was that forensic accounting may discourage corruption and fraud in procurement. But since the coefficient of deterrence was negative and statistically significant at the 5% level with a p-value of 0.0404, the outcome defies the premise. This demonstrates that in the chosen public institutions, forensic accounting was unable to prevent procurement fraud. The research aligns with the findings of Alabdullah, Alfadhl, Yahya, and Rabi (2013), who discovered a noteworthy correlation between the efficacy of control and auditing organizations and forensic accounting. It is compared to the research of Muhammad Aminu Isa and Shafi'u Abubakar Kurf (2020), which demonstrates the value of forensic accounting in reducing fraud and improving the caliber of internal control in Nigerian businesses. This study confirms the findings of Bassey Eyo, Ahonkhai, and Ohimai Ebahi (2017), who demonstrated that forensic accounting and legal help had little to no impact on preventing fraud in Nigerian businesses. Also, it was hypothesized that government is exploiting forensic accounting as fraud prevention tool. Still, the result is in antagonistic to the hypothesis since the coefficient of government performance remained negative and statistically significant at 5% level with a p-value of 0.0059.

Therefore, it appears that the government's use of forensic accounting in the procurement system to avoid fraud is not very widespread among the public colleges that were chosen.

It mostly agrees with Enofe's (2019) study, which observed that there are several obstacles to the use of forensic accounting in developing nations like Nigeria. However, this study is in direct opposition to the findings of Ashwin R. et al. (2018), who discovered that in Indian stock markets, failures of internal auditing systems of the firm have been disregarded using data mining techniques and computer tools of forensic accounting.

Furthermore, the study postulated that the Ghanaian procurement system's policy supports the use of forensic accounting as a fraud and corruption prevention tool. In the meanwhile, the coefficient of policy fairness remained negative and, with a p-value of 0.1525, was statistically insignificant at the 5% level, meaning that the outcome does not adhere to the hypothesis. From this point on, it suggests that the system's receptivity to the use of forensic accounting to avoid fraud is still dubious, although not at all.

Conclusion and Policy Direction

The analyses conducted yield strong evidence that support several conclusions, such as the government's dubious or insignificant use of forensic accounting. Moreover, it was discovered that forensic accounting was powerless to stop procurement fraud and corruption.

Therefore, we urge governments at all levels to show interest in forensic accounting and accountants in order to monitor and look into incidents of suspected and verified fraud and corruption. In addition to placing a strong emphasis on reason, impartiality, and the independence of the legal system, the management of the public procurement authority should provide accountants and auditors with training in criminology, with a focus on the dynamics and scope of financial crimes, fraud and corruption prevention, ethical issues, deterrence, detection, investigation, and remediation.

Possible further research

Subsequent studies might focus on examining how forensic accounting affects procurement fraud in Ghana's government sector.

Declaration

Data availability: Upon request, the corresponding author will provide the data used to support the study's conclusions.

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References

Ogundana O., Okere W., Ogunleye O. & Oladapo I., "Forensic accounting and fraud prevention and detection in Nigerian banking industry.," *COJ Rev & Res. 1(1). COJRR.000504.2018. ,* pp. 1-8, 2018.

Muhammad Aminu Isa and Shafi'u Abubakar Kurf, "Determinants of Forensic Accounting

Application for fraud detection in Nigerian Firms," *Indo-Asian Journal of Finance and Accounting,* Vols. Vol. 1, No. 2, 2020, pp. 107-123, 2020.

Ashwin R. and Asra Khan, "The impact of forensic accounting on farud detection," *Journal of Emerging Technologies and Innovative Research,* pp. 280-288, 2018.

Y. Rechtman, "The Past, Present, and Future of Forensic Accounting," 2020.

N. Khan, "Public Procurement Fundamentals; Lessons from and for the feild," pp. 1-37, 2018.

"Cambrige Dictionary," [Online].

Ethiopia, *The Ethiopian Federal Government Procurement and Property Administration proclamation,* Addis Ababa, 2009.

M. J. Mazarr, Rand Corporation, 2018. [Online]. Available:

Ethiopia, *The Criminal Code of the Federal Democratic Republic of Ethiopia Proclamation Number404,* Addiss Abab, Addis Ababa: Berhanena Selam Printing Enterprise, 2005. https://www.oecd.org/

H. A. Maru, "The effect of forensic accounting," *Journal of Chemical Engineering and*

Applications, pp. 1-9, 2023.

D. A. Enofe, "The role of Forensic Accounting in Mitigating Financial Crimes," *International Journal of Advanced Academic Research - Social Sciences and Education,* pp. 18-35, 2019.

Ogundana O., Okere W., Ogunleye O. & Oladapo I., "Forensic accounting and fraud prevention and detection in nigerian banking industry.," *COJ Rev & Res. 1(1). COJRR.000504.2018. ,* pp. 1-8, 2018.

Muhammad Aminu Isa and Shafi'u Abubakar Kurf, "Determinants of Forensic Accounting

Application for fraud detection in Nigerian Firms," *Indo-Asian Journal of Finance and Accounting,* Vols. Vol. 1, No. 2, 2020, pp. 107-123, 2020.

Ashwin R. and Asra Khan, "The impact of forensic accounting on farud detection," *Journal of Emerging Technologies and Innovative Research,* pp. 280-288, 2018.

Y. Rechtman, "The Past, Present, and Future of Forensic Accounting," 2020.

N. Khan, "Public Procurement Fundamentals; Lessons from and for the feild," pp. 1-37, 2018.

"Cambrige Dictionary," [Online]. Available: https://dictionary.cambridge.org/us/dictionary/english/public-procurement. . [Accessed March 04 March 2023].

Ethiopia, *The Ethiopian Federal Government Procurement and Property Administration proclamation,* Addis Ababa, 2009.

M. J. Mazarr, Rand Corporation, 2018. [Online]. Available: https://www.rand.org/content/dam/rand/pubs/perspectives/PE200/PE295/RAND_PE295.pd f.. [Accessed 5 March 2023].

Ethiopia, *The Criminal Code of the Federal Democratic Republic of Ethiopia Proclamation Number404,* Addiss Abab, Addis Ababa: Berhanena Selam Printing Enterprise, 2005.

Saeed Siya, Chunlin Xin, "preventing corruption in public procurement," OCED better

policies for better lives, October 2019. [Online]. Available: https://www.oecd.org/gov/ethics/Corruption-Public-Procurement-Brochure.pdf.. [Accessed 5 March 2023].

P. Tadios Mentta, "Integrity in Federal Public Procurement of Ethiopia," *International*

journal of scientific and research publications, vol. 11, no. 1, pp. 394-403, January 2011.\

T. Assefa, *Public Procurement Practice in Ethiopia: the case of Federal Ministry of Education,* Addiss Ababa: Addiss Ababa University School of Commerce Post Graduate Program, 2014, pp. 1-82.

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