

IMPACT OF FRAUD ON GHANAIAAN SMES AND COPING MECHANISMS

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Abstract- Small and Medium-Scale Enterprises' (SMEs) are the engine of growth of most developing countries as they employ a large number of people as opposed to large firms. Consequently, these enterprises should succeed in expanding to become significant employers and producers. However, what seems obvious at least through cursory observation is that the current state of SMEs betrays an economic loss with respect to the benefits that ought to be forthcoming from their potential. This loss can be triggered by a number of factors. The study determines the drivers of internal fraud and their impact on Ghanaian SMEs, and prescribes coping mechanisms. Primary data collected on 250 SME's collected from various sectors across Accra, the capital of Ghana are used for this study. Using a cross-sectional regression, we identify the key drivers of internal fraud that hamper the growth of Ghanaian SMEs. Our regression results show that although several fraud variables impact negatively the growth of the SME sector, it is only accounting fraud which is significant. Our study also revealed that stealing, fake currency issued for the payment of goods or service and non-payment of goods or service accounts for almost 83% of fraud cases experienced by SMEs. Our study should be useful to managers of SMEs, auditors and the security agencies in developing economies in particular, in their quest to combat fraud within SMEs.

Key words- and phrases: Accounting fraud, fraud diamond, internal fraud, regression, small and medium enterprises', stratified sampling.

I. INTRODUCTION

Small and Medium-scale Enterprises (SMEs) are important to almost all economies in the world. They contribute to output and to the creation of jobs; they are a nursery for large firms of the future, and serve as the next (and important) step up for expanding micro-enterprises. They contribute directly and often significantly to aggregate savings and investment, and they are involved in the development of appropriate technology the world over.

Particularly, from the perspective of developing countries, such as Ghana, SMEs contribute quite significantly to economic growth and development. Evidence from literature reveals that SMEs provide about 85% of manufacturing employment and contribute up to about 70% of national gross domestic product (Abor and Quartey, 2010). Additionally, they constitute about 92% of businesses in Ghana including retailing, manufacturing and trading businesses (Abor and Quartey, 2010). Available data from the Registrar General's Department in Ghana indicates that 90% of companies registered in Ghana are either micro-enterprises or SMEs (Mensah, 2004), which underpins SMEs as the catalyst for Ghana's economic growth. In view of the strategic importance of SMEs to socio-economic development, their growth is critical, especially in a developing country like Ghana where the issues of unemployment and income distribution have become persistent challenges for successive governments (Palma, 2005). However, despite efforts made by successive Ghanaian governments to promote the SME sector,

there has been little success. In fact, it is not far-fetched to indicate that effort to promote the SME sector has been bedeviled with problems. These challenges include the absence of adequate and timely banking finance; limited capital and knowledge; non-availability of suitable technology; low production capacity, ineffective marketing strategies, lack of capacity to identify new markets, non-availability of highly skilled labour at affordable cost; bureaucratic delays and the complex maze of rules in following up with various government agencies to resolve problem.

To address such challenges, several empirical studies have been conducted to establish how these constraints can be minimized to ensure SMEs' growth. Notwithstanding the effort by researchers to investigate these problems thus facilitating the growth of SMEs, very little effort has gone into investigating the effect of fraud on the expansion of SMEs. Yet, the impact of fraud on SME operations cannot be discounted. For instance, almost half (48%) of companies surveyed in a recent survey by PricewaterhouseCoopers (PwC) reported being victims of fraud and the average direct cost of this economic crime was estimated at £1.75 billion (www.managers.org.uk). In fact, the true cost of fraud goes beyond the financial loss and has implications for firm's reputation, morale and management time, as well as trust within the business sector (Savage, 2003).

Similarly, US Chamber of Commerce estimated employee fraud cost businesses \$20-40 billion yearly

(Hanno and Hughes, 1999). Other authors reported that 30 percent of workers look for ways to steal from employers, and another 30 percent will steal if given the opportunity (Krambia-Kapardis and Zopiatis, 2010).

Interestingly, fraud is more costly to SMEs than large businesses (Thomas and Gibson, 2003; and Bierstaker, Brody and Pacini, 2006). Bressler and Bressler (2007) corroborate this view by noting that fraud accounted for 30 percent of small business failure in the 1990s. Hanno and Hughes (1999) added that small businesses are likely to be more susceptible to fraud, owing to their limited number of employees and the lack of resources to implement efficient internal controls. Bierstaker et al. (2006), argued that SMEs do not have the resources or the capital to invest in anti-fraud technology despite the fact that they are the most in need of fraud detection and prevention technology. Wells (2004) added that SMEs are vulnerable because they are hardly audited, and lack hotlines and internal controls.

The juxtaposition of the lack of research into the impact of fraud on SMEs with their vulnerability to fraud as a result of the lack of safeguards to prevent and detect fraudulent activity, warrants an investigation into the impact of fraud on the growth of Ghanaian SMEs. Although fraud activities among SMEs may be committed by owner-managers and external parties, this study focuses on fraud activities by employees (which may transpire through their dealings with customers). We pose the following research questions. How does accounting fraud committed by the workers of an SME affect its growth? How does the abuse of time by an employee affect the growth of an SME? Does customer identity fraud and fraud committed by the apprentices affect the growth of an SME? What coping mechanism exists to combat these frauds? What is the nature of fraud that confronts the SME sector? Specifically, the objectives of the study are i) to determine the nature of fraud that confronts Ghanaian SME sector, ii) to determine the drivers of internal fraud of SMEs in Ghana and iii) to determine the coping mechanisms that can effectively combat these frauds.

II. METHODOLOGY

This section discusses the sampling method employed for the study and how we obtained data for the analysis.

1.1. Data source

Primary data was sourced from 250 SME's operating in Accra metropolis. Questionnaires were designed to solicit information about fraud that confronts SME's operations. The questions posed were broadly categorized into general and fraud specific questions. The general questions dealt with the background information of their business such as the number of employees, the number of branches, marital status of

the manager/owner among others. The fraud specific questions dealt with issues with fraud they have encountered (in the past five years) in the course of running their business. Respondent were made to answer questions pertaining to nature of fraud that they have experienced, the fraud that they know and the how often they experience fraud in the operations of their business. In addition, using a likert scale of 1 to 5, respondent were made to answer a number of questions on some key fraud variables (customer identify fraud/theft, accounting fraud, time abuse, apprentice fraud) that we believe confronts these SME's.

We selected Accra because being the capital of Ghana, it is where most economic activities take place, and thus where the majority of SMEs reside. We first divided the SME's into ten sectors (25 questionnaires for each sector) namely transportation, forestry, medicals, manufacturing, hospitality, beauty care, education, trading, information technology (IT)/communication and car dealers/repairers. To ensure that the entire area of Accra is covered, we divided the city into five zones, five questionnaires from each sector were then randomly deployed to these SMEs. In addition, interviews were conducted with fraud experts about measures to be adopted in combating fraud emanating from the SMEs sector.

1.2. Model Specification

We specify the model for our analysis in the form

$$Y = X\beta + \varepsilon$$

where Y is an $n \times 1$ vector, X is an $n \times (k + 1)$ design matrix of fraud and some controls variables, β is a $(k + 1) \times 1$ vector of parameters and ε is an $n \times 1$ vector of residuals for $n, k \in \mathbb{Z}^+$.

Specifically, we postulate that the growth of an SME captured by a series of questions in the past five years of operations of the SME is summarized by the profitability, P and related to the fraud and the control variables by the function f where

$$P_i = f(CIF_i, AF_i, TA_i, APF_i, NB_i, NE_i, MS_i) + \varepsilon_i$$

for $i = 1, \dots, n$ where n is the number of SME's.

Here, CIF_i, AF_i, TA_i and APF_i are respectively customer identity fraud that the SME has experienced in the course of its operations, accounting fraud committed by the workforce, time abuse (the mis-use of time allotted to the workers of the SME) and apprentice fraud depicted by the SME i . We used the mean values of the responses obtained for our regression analysis because the mean fair very well as an estimator of the true mean when judged by the three criteria of bias, consistency and efficiency (see Stock and Watson (2007), pps 67-70). On the other hand, NB_i, NE_i and MS_i , are the control variables

represented respectively by the number of branches the SME has, the number of employees that the SME possesses and marital status of the manager of the SME.

If an SME has more branches, then it is an indication of growth and so we expect the coefficient of *NB* to be positive.

We used the number of employees an SME has as a measure of *NE*. If an SME employs a greater number of people, then there is the greater chance that it is profitable; otherwise its existence may be questionable. Consequently, we expect the coefficient of *NE* to be positive.

Being married goes with greater responsibility and the desire to ensure that one's business grows. We assigned 1 to an SME whose owner is married and 0 otherwise. It is expected that the coefficient of *MS* is positive.

III. DATA ANALYSIS AND PRESENTATION

This section reports the analysis of the data extracted from the questionnaires and information obtained from the security experts about methods to combat fraud.

1.3. Fraud experienced by various sectors

Table 1 depicts the nature of fraud the SME's have experienced in the course of running their business in the past five years. Stealing tops the list with 70 reported cases representing approximately 29% fraud experienced by the SME sector. This is followed closely by fake currency that has been used to pay for goods or service rendered. Non-payment of goods/service has 61 reported cases representing just over 25% of fraud cases experienced. Altogether, stealing, fake currency issued for the payment of goods or service and non-payment of goods or service accounts for almost 83% of fraud cases experienced.

Table 1: Fraud SME's have experienced

Nature of Fraud Experienced	Frequency	Relative Frequency
Stealing	70	0.2905
Fake currency	69	0.2863
Non-payment of goods/service	61	0.2531
Supply of fake/expired/wrong products	18	0.0747
Bribery (Police/Port/Custom officials)	5	0.0207
Purchasing items on credit without payment	5	0.0207
Perching	4	0.0166
Dud/Fake cheques	2	0.0083
Non-collection of items after completion	2	0.0083
Incomplete supply of goods	1	0.0041
Billing fake items	1	0.0041
Incomplete payment of goods purchased	1	0.0041
Cyber fraud	1	0.0041
Arm robbery	1	0.0041
Totals	241	1

1.4. Regression results

Table 2: Regression output for SME growth

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.34250065
R Square	0.117306695
Adjusted R Square	0.110159381
Standard Error	0.935723332
Observations	250

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	28.74119608	14.3706	16.4127	2.03009E-07
Residual	247	216.2678039	0.875578		
Total	249	245.009			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	4.056670259	0.159274759	25.46964	4.79E-71	3.742960342	4.370380175
AF	-0.31705798	0.14681918	-2.15951	0.031773	-0.606235203	-0.027880758
NE Cubed	4.66929E-05	9.51822E-06	4.905638	1.69E-06	2.79457E-05	6.54402E-05

We run a number of regressions and settled on the regression output indicated in table 2. From the regression output accounting fraud significantly negatively impact fraud. This can be seen from the fact that $|-2.1595| = 2.1595 > 1.96$. Observe also that the P-value of $0.0318 < 0.05$, which goes to confirm the significance of the accounting fraud variable. The confidence interval does not also contain zero and consequently we can be 95% confident that the true coefficient lies in $[-0.6062, -0.0279]$. A unit increase in accounting fraud leads to a reduction in the profitability of a SME by 0.3171 and this results make intuitive sense. Hardly does auditing goes with SME's as compared with large businesses or organizations in which their books are audited either internally externally or both. Our finding confirms the work by Wells (2004) that SMEs are vulnerable because they are hardly audited, and lack hotlines and internal controls.

The coefficient of the number of employees cubed has a positive impact on growth. The cube of any

additional person employed by an SME increases profitability by 4.6693×10^{-5} . Overall the independent variables explain approximately eleven percent of the variation in the SME's growth.

To verify whether the R^2 obtained in table 3 reflect a true relationship, we test the hypothesis

$$H_0 : R^2 = R_{crit}^2 \text{ versus } H_1 : R^2 > R_{crit}^2$$

where R_{crit}^2 is defined below. From the F-statistics of goodness of fit, we can write

$$R_{crit}^2 = \frac{kF_{crit}}{kF_{crit} + (n - k + 1)}, \text{ where } F_{crit} = F_{n-k+1}^k$$

has the F distribution with column corresponding to k degrees of freedom and rows corresponding to $n - k - 1$ from the F-distribution (compare with Dougherty (2007), pps 114-116). It should be noted that k is the number of independent variables and n is the number of SME's. $F_{crit} = F_{247}^2 \cong 3.03$ and so

$$R_{crit}^2 = 0.0239 < R^2 = 0.1173. \text{ Thus we should}$$

reject H_0 . Consequently, the R^2 reported on table 2 has not arisen as a matter of chance. Also the plots residual plots depicted no apparent patterns and so there is no evidence of heteroscedasticity. In addition, we checked for normality of the residuals by computing a histogram of the regression residuals and the residuals were approximately normally distributed.

1.5. Coping mechanisms

The above analysis indicates it is imperative for Ghanaian SMEs to tackle fraud in their bid to expand thus reaching their full potential. To achieve this objective, this study prescribes the following solutions to the fraudulent activities experienced by the SMEs used for the study.

i) Stealing

Stealing tends to thrive in a work environment where the roles and responsibilities of staff are unclear. Thus SME owners must ensure that its staff is allocated clearly defined roles and responsibilities. The transparency of the roles and responsibilities makes it easy to track thefts when committed thus serving as deterrence to “notorious” employees. Furthermore, the presence of the owner must be felt by the employees. An absentee owner is far more likely to experience thefts in his/her absence as opposed to an owner who is regularly at work. Furthermore, SME owners must prevent high turnover rate of personnel, particularly in positions that are prone to stealing. SMEs should employ their own security instead of outsourcing its security to a security agency. This is because with outside security, management has no control on the security personnel discharged to take care of the SME’s security needs. Laws on stealing and pilfering should be clearly spelt out to employees even before they are recruited. In addition, employees should be tasked such that the time allotted for work is properly utilized so that there is no room for an employee to loiter around. Security cameras can also be installed in sensitive areas of their operations.

ii) Fake Currency

SME owners must watch out for currency notes of high denominations, particularly if it is a new note. The fraudsters operate using these large denominations and in places where there is quick movement of people. Hence, they must scrutinize them when customers hand them in. In this regard, SME owners must familiarize themselves with the features on the original denominations thus allowing them to distinguish them from the fake notes. Also, SME operators have to educate its employees on the features of the new notes and use fake currency detectors when large denominations are issued.

iii) Supply of Fake/Expired/Wrong Product

To avoid these, SME owners must develop the habit of purchasing their items from businesses with established track record of credibility or from a regular source. It is in their attempt to “cut corners”

and maximize profit that SMEs fall victim to dodgy products. Managers of SMEs should read labels to identify substandard products or expired products. When there are changes in suppliers, the danger of expired or substandard products being mixed with good ones can be high and so SMEs owners have to be very vigilant any time there is the need to change suppliers. There is also the need for an SME to get a purchasing officer who will be in charge of purchases.

iv) Bribery

Although several SMEs operate at the risky end of business, they must nonetheless offer their workers’ salaries that allow them to achieve with sustainable incomes thus deterring them from accepting bribe. Furthermore, workplace ills, such as low morale, incessant complaints and lack of promotion must be quickly addressed thus preventing bribery.

v) Default on Items Purchased on Credit

SME owners must adopt a strictly no credit policy to avoid this fraudulent behaviour. Furthermore, if extended family pressures are likely to dim SME owner’s determination to pursue payments for items purchase on credit by extended family members, a non-family-salesperson should conduct the sale. Alternatively, SME owners must institute a guarantor system, whereby, a person of good financial standing is sought to vouch for the credit seeking customer.

vi) Perching

A type of fraud prevalent in the hospitality industry where a reservation meant for one person ends up accommodating three or more people. They increase the cost of running rooms at these hotels. This type of fraud can be prevented through keeping proper records of guests and placing phone calls to guest-rooms intermittently to check on visitors. However, the most effective approach will be the installation of CCTV cameras to check on room visitors.

vii) Issuing Dud/Fake Cheques

Some measures that may serve as coping mechanisms, include, firstly check the account of the check issuer is valid. Secondly, submit the cheque for payment within a period of three months (beyond three months the check issuer can refuse payment should the cheque turn out to be fake). Thirdly, ensure the words and figures of the stated amount, match. Fourthly, ensure the number of signature spaces on the cheque matches the actual number of signatures on the cheque. Words that are not properly written on checks are all signs of fraud intention. A criminal case cannot be filed against the issuer of dud cheque after three months. Consequences, SMEs owners should as a matter of urgently withdraw any cheque as quickly as possible.

viii) Non-Collection of items after Completion

The guarantor system, prescribed for “Default on Items Purchased on Credit”, whereby a person of good financial standing will vouch for the customer

to collect the item after completion, and pay the outstanding amount, will deter this fraud.

ix) Incomplete Supply of Goods

The coping mechanism for this fraud is akin to that prescribed for “Supply of Wrong Product” in that SME owners must ensure businesses supplying products have a long history of credibility track record.

x) Billing Fake Items

The recommendation prescribed for “Supply of Fake/Expired/Wrong Products” can address this fraud i.e. SME owners must purchase their item from businesses with established credibility track record.

xi) Incomplete Payment of Goods

Either the guarantor system or a strictly no credit policy, both already prescribed for “Default on Items Purchased on Credit” would prevent this fraudulent activity.

xii) Cyber Fraud

Cyber fraud is big issue with the security agencies in Ghana. Cyber fraud can be dealt with in ways such as firstly, SME owners must established the identity of online correspondents before they yield to their demands. Secondly, SME owners must check the background of their employees to ensure they do not have a history of crime, and as such are not prone to crime thus alleviating the possibility of employees engaging in cyber fraud. Thirdly, SME owners must acquire at least fundamental knowledge of IT thus avoiding becoming easy prey to cyber fraud. SMEs are advised not to transact business on yahoo.com. SMEs are advised to pay greater attention to details for internet based transactions. There should be basic training for employees on how to operate an e-mail account. Close scrutiny of e-mail address that are used for transactions are critical. A change in an alphabet from an “i” to an “e” changes everything. It is also important that an SME check the background of people before they hire.

j. Armed Robbery

Firstly, SME owners must erect a sign warning potential robbers that “no valuables are kept on the premises”. Secondly, daily sales must not be kept at the workplace overnight. Thirdly, SME owners must desist from carrying bulk cash when they travel, to avoid highway robbery.

CONCLUSION

It is imperative for Ghanaian SMEs adopt the coping mechanisms to tackle fraud in their bid to expand thus reaching their full potential. Accounting fraud is the significant variable affecting the growth of Ghanaian SMEs. Owners should therefore seek the services of external auditors to examine their books or form teams to pay for that service if they cannot independently do so. Feedback they receive from auditors should assist in combating the menace. Workers efforts should be recognized by owners/managers of SME’s especially if the business

is doing well. Good working conditions and flexible working hours will endear the hearts of employees and employee loyalty to the business. If the employees of the business see that their efforts are not being rewarded and the managers are merely interested in expanding the business, then they may be tempted to stifle growth by stealing items from the company or connive with customers to dupe the company. Communicating to workers about the state of affairs of the business especially when the business is not doing well is paramount. This will assure the workers that in good times, their efforts will be rewarded. Owners should also ensure that employees are properly utilized during working hours to give no room for idleness that may prompt any form of fraudulent activity.

Cashiers of SMEs should be vigilant with currencies they receive especially those with higher denomination to be able to detect any fake currency that are used for payments. They should encourage their customers to obtain an e-zwich cards or other form of electronic payments as mobile money transfers so that they do not necessarily use cash for payments. Strict adherence to ‘no credit’ policy will ensure that customers do not get away with goods or service they receive.

REFERENCES

- [1] Abor, J. and Quartey, P.(2010). Issues in SME development in Ghana and South Africa. *International Research Journal of Finance and Economics*, 39(6), pp.215-228.
- [2] Adams, J.S. (1963). Towards an understanding of inequity. *The Journal of Abnormal and Social Psychology*, 67(5), p.422.
- [3] Albrecht, W.S., Wernz, G.W. and Williams, T.L. (1995). *Fraud: Bringing light to the dark side of business*. Irwin Professional Pub.
- [4] Albrecht, W.S., Albrecht, C.C. and Albrecht, C.O. (2006). *Fraud Examination 2e*. Mason: Thomson Southwestern Publishers.
- [5] Bierstaker, J.L., Brody, R.G. and Pacini, C. (2006). Accountants' perceptions regarding fraud detection and prevention methods. *Managerial Auditing Journal*, 21(5), pp.520-535.
- [6] Bressler, M.S. and Bressler, L.A. (2007). A model for prevention and detection of criminal activity impacting small business. *The Entrepreneurial Executive*, 12, p.23.
- [7] Dougherty, C. (2007). *Introduction to Econometrics*. 3rd Edition, pps 114-116, Oxford University Press.
- [8] Hanno, D.M. and Hughes, T.A. (1999). Defending your dollars”, *Strategic Finance*, Vol. 81 No. 2, pp. 56-60.
- [9] Kayanula, D., and Quartey, P. (2000). The policy environment for promoting small and medium-sized enterprises in Ghana and Malawi, *Finance and Development Research Programme, Working Paper Series, Paper No. 15*, IDPM, University of Manchester.
- [10] Krambia-Kapardis, M, Zopiatis A (2010). Investigating incidents of fraud in small economies: the case for Cyprus. *Journal of Financial*, Vol. 17, No. 2, pp.195-209.
- [11] Mensah, S. (2004). A Review of Financing Schemes in Ghana. Presented at the UNIDO Regional Workshop of Financing Small and Medium Scale Enterprises, Accra, Ghana, 15-16 March.
- [12] Palma, G. (2005). Four sources of deindustrialization and a new concept of the Dutch disease. In Peters M.P. and C.G. Brush (1996). *Market information scanning activities and growth in new ventures: a comparison of service and*

- manufacturing ventures. *Journal of Business Research* No. 36, pp. 81-89.
- [14] Rudewicz, F. (2011). The Fraud Diamond: Use Of Investigative Due Diligence To Identify The “Capability Element Of Fraud. *The Connecticut Turnaround Association Management Newsletter*, Vol. 4, No. 1, pp. 1-3.
- [15] Savage, M. (2003). Food for Insomnia. *Accountancy SA*, May: 6-7.
- [16] Stock, J. H and Watson, M. W (2007). *Introduction to Econometrics*. Second edition, pp. 67-70. Pearson-Addison Wesley.
- [17] Thomas, A.R. and Gibson, K.M. (2003). Management is responsible, too. *Journal of Accountancy*, pp. 53-55.
- [18] Wells, J. (2004). New Approaches to Fraud Deterrence. *Journal of Accountancy*, pp. 203-212

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