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Examining the predictors of fraud in state-owned enterprises: an application of the fraud triangle theory

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Abstract

Purpose – This paper aims to investigate the views of employees on the motives behind frequently reported fraudulent activities at the workplace. Using the fraud triangle theory (FTT) as the theoretical lens, the study examines the effect of pressure, opportunity and rationalization on fraudulent acts by employees at the workplace.

Design/methodology/approach – The study follows a correlational quantitative approach using questionnaires as the main data collection tool. A total of 243 valid responses from employees working in different state-owned enterprises in Ghana were used in the empirical analysis. The hypothesized relationships of the study were tested using the partial least square-structural equation modelling technique.

Findings – The results from the structural analysis showed that pressure, rationalization and opportunity are important in explaining why employees engage in fraudulent activities at the workplace.

Originality/value – The findings do not only provide empirical support for the applicability of the FTT in the Ghanaian context but most importantly offer some useful insights into the fraud discourse from the public sector workers' perspective.

Keywords Fraud, Structural equation modelling, Fraud triangle, State-owned enterprises

Paper type Research paper

Introduction

Fraudulent acts perpetuated by people closely connected with business organizations (internal fraud), as well as individuals outside the business (external fraud) have often been associated with the collapse of some of the world giant and otherwise vibrant corporations such as Enron, Tyco, WorldCom, Carillion and Steinhoff (Low *et al.*, 2008). The 2016 Report on Crime Surveys by PricewaterhouseCoopers (2016) concludes that one out of every three organizations surveyed experiences fraud of some sort in both developed and emerging markets. Indeed, the report found over 43% of all organizations studied from 40 nations across the globe to have suffered from one form of a fraudulent act or the other. The effect of these fraudulent acts has been documented in several reports.

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The Association of Certified Fraud Examiners (ACFE), in their 2018 Report to the Nations (ACFE, 2018) for instance, documents that about 5% of the total revenue to organizations are lost annually due to fraud. Several studies on fraud have also emphasized how fraudulent activities have affected businesses and economies globally over the years (Andoh *et al.*, 2018; Asmah *et al.*, 2019; Gullkvist and Jokipii, 2013; Mustafa and Youssef, 2010; Zahari *et al.*, 2020). The unfortunate reality is that the number of fraud cases continues to increase, posing more threats to businesses and economies. Between 2016 and 2018, fraud cases recorded globally increased by about 12% (ACFE, 2018; PWC, 2018). The rise in reported fraud cases, in part, may explain the surge in research interest on fraud in recent times. Despite the growth in research interest on issues of fraud over the years, there exist some important gaps in the literature which the current study attempts to address.

Firstly, notwithstanding the fact that the occurrence of fraud is a global issue, extant studies have focused on America, Asia, Europe and other developed economies (Bierstaker *et al.*, 2006; Chaudhary *et al.*, 2012; Sharma and Panigrahi, 2013; Wicaksono and Urumsah, 2017; Yusof and Lai, 2014; Zona *et al.*, 2013) with less attention given to developing economies, particularly African countries. Interestingly, the reported fraud cases in developing countries continue to be higher compared to that of developed countries in recent times. As revealed by the 2018 Report to The Nation (ACFE, 2018), the continent Africa recorded the second largest percentage of all reported fraud cases. Ghana is, particularly, a case in point with regard to the issue of corruption-led fraud in Africa as the country is adjudged to be among Sub-Saharan African nations with a high rate of corruption perception (Bamidele, 2013; Transparency International, 2012, 2009). Ghana has recorded a corruption perception index (CPI) score of between 40 and 50 over the past decade (Transparency International, 2020) and for 2020, Ghana ranked 75th out of 180 countries examined by Transparency International. With a 2-point increase from 2019's CPI index, Ghana recorded an index of 43 for the year 2020. This brought the country to a sore rank of 40–49 out of 100, representing a high level of corruption (Transparency International, 2020). Several studies also report increasing cases of asset misappropriation and financial statement fraud among Ghanaian firms in recent times (Koomson *et al.*, 2020; Asmah *et al.*, 2019). Studies from the African perspective, specifically Ghana, are, therefore, relevant to the fraud literature given the high prevalence rate of reported fraud cases.

Secondly, most existing studies on fraud have focused on private businesses which exist mainly for profit-seeking motives (Asmah *et al.*, 2019; Gullkvist and Jokipii, 2013; Mustafa and Youssef, 2010; Zahari *et al.*, 2020) with less attention on state-owned or governmental organizations. Defined to be those enterprises where the state, regional governments or cities have significant control, through full, majority or significant minority ownership (OECD, 2005), state-owned enterprises play a crucial role in the development of any country. Despite the significant role such enterprises play in an economy, especially, in providing goods and services that would otherwise not be attractive to private enterprises, they have been at the centre of most reported fraud cases in many countries. Statistically, close to half of the fraud reported cases occur in public or governmental organizations alone (ACFE, 2018).

Whilst studies that examined the occurrence of fraud in state-owned enterprises are scant, the few existing ones have also focused largely on its prevalence and effects (ACFE, 2018) and the preventive initiatives (Abdullahi and Mansor, 2018) with less focus on the factors that influence individuals to engage in fraud in these organizations. This study fills these gaps in the fraud literature by specifically examining the fraud phenomenon and the motivation for employees to engage in fraudulent acts in state-owned enterprises. Relying on the fraud triangle theory (FTT) as our theoretical foundation, we investigate the propensity of employees working in state-owned enterprises in Ghana to engage in fraudulent acts and ascertain the dominant factors that influence these employees to commit fraud.

The rest of the paper follows the structure outlined: the section that follows immediately reviews existing literature on the theory used for this study and the study constructs. The section also discusses the development of the hypotheses tested in the study. The methodology section comes next where the methods used to achieve the study objectives are discussed. The subsequent section presents and discusses the key findings of the data analysis. The paper ends with a summary of the entire study and highlights the key findings and contributions of the study.

Literature review

Conceptualization of fraud and meaning of employee fraud

The meaning of fraud can differ depending on the situation and the person defining it. This has resulted in the complexity of the conceptualization of fraud in the literature. Subsequently, fraud has been defined in several ways by scholars varying from relatively narrow definitions to very broad ones. For instance, Zervos (1992, p. 199) simply defines fraud as "the art of deception for gain" whereas the International Standards on Auditing (ISA 240) provides a more comprehensive definition for fraud as "an intentional act by one or more individuals among management, those charged with governance, employees or third parties, involving the use of deception to obtain an unjust or illegal advantage". From the diverse definitions of fraud, a central fact is that despite the apparent differences in the conceptualization of the concept of fraud, it remains an act usually perpetuated against an entity or a person, by an individual or a group of individuals for personal gains or to benefit their organizations.

The occurrence of fraud could be in two main ways: against individuals and against organizations. Individuals can fall victim to fraud through several means (Button *et al.*, 2009). People become victims of fraud without knowing they are being defrauded. For example, some people enter lotteries knowing that it is unlikely to win. Not receiving a prize, therefore, does not suggest any signs of fraud although that may constitute fraud against the individual who entered the lotto (Button *et al.*, 2009; Panel, 2006).

The second type of fraud, which is fraud committed against organizations, can be either internally perpetuated or externally perpetuated (ACFE, 2018). External fraud against an organization covers a wide scope of schemes ranging from theft of assets of a firm to security breaks and hacking. Whilst the prevalence of external fraud and its impact on business success cannot be underestimated, fraud perpetuated internally has been acknowledged to be the most pervasive against businesses. Internal fraud occurs when the same people who are trusted to protect the assets and resources of an organization purposely misuse or misapply the organization's resources and assets for their own enhancement (ACFE, 2016). Perpetuators of internal fraud may, therefore, be the executives, employees, managers and sometimes owners of organizations. In literature, internal fraud is synonymously referred to as "occupational fraud", "workplace fraud" or "employee fraud". Compared with the former, internal fraud is believed to be the largest and most prevalent threat organizations and the global economy are confronted with (ACFE, 2018). This study focuses, specifically, on an aspect of internally perpetuated fraud: fraud perpetuated by employees of organizations against their firms. For the purpose of this study, the term "employee fraud" is adopted.

Classifications of employee fraud

The ACFE (2018) defines employee fraud as the use of one's occupation for personal enrichment through the deliberate misuse or misapplication of the using organization's resources or assets. Employee fraud is, thus, defined to cover all misconducts committed by employees at any level in the organization. Three main classifications of internally perpetuated fraud are identified in the fraud literature as asset misappropriation, corruption and financial statement fraud. Thus, employees of organizations can misuse the resources of their firms to their benefit or misstate the financial statements to portray a favourable financial standing, all of which constitute fraud.

To better understand and distinguish between the various types of fraudulent activities that occur within an organization, the ACFE developed the Occupational Fraud and Abuse Classification System, also known as the Fraud Tree. The fraud tree is a classification system that groups internally perpetuated fraud and abuses into three main types of fraud: asset misappropriation, corruption and financial statement fraud.

Financial statement fraud

Financial statement fraud generally refers to deliberate alterations of a firm's financial statements to portray a different image of the firm often with an intent to mislead the users of the financial information (ACFE, 2018; Robinson and Aria, 2018). Unlike some misstatements in the financial statements that are unintentional errors, these alterations are carefully planned for the benefit of the perpetuators. Beasley *et al.* (2000) indicate that financial statement fraud can be classified into three main categories, namely, change in accounting methods, fiddling with managerial estimates of cost and accelerated or delayed revenue and expenditure recognition. Although financial statement fraud is considered to be the least common form of occupational fraud in terms of frequency of occurrence, it remains the costly form of fraud. For instance, whilst financial statement fraud schemes constituted about 10% of the 2,960 fraud schemes examined by the ACFE, it resulted in about 69% ($800,000) of the total losses that, on average, each organization suffers. Schmalleger (1991), opines that "More money has been stolen at the point of a pen than at the point of a gun".

Corruption

Unlike financial statement fraud, corruption schemes are a common form of occupational fraud frequently perpetuated against organizations internally. As a dimension of the fraud tree, corruption has been explained to include "schemes that result in abuse of power or influence by an individual in a business transaction in a way that violates the individual's duty to the employer to gain a direct or indirect benefit" (ACFE, 2012). Schemes such as bribery, embezzlement, forgery are all forms of corruption (Gorsira, Steg, Denkers and Huisman, 2018). Corruption could be incidental, institutional or systematic (Kpundeh, 1998). Hechanova *et al.* (2014) explain incidental corruption to include acts of embezzlement on a small scale, favouritism and discrimination; institutional fraud, on the other hand, is explained to involve bribery, kickbacks, embezzlement on a large scale and rendering economic privileges to special interests; whereas systematic corruption is explained to include the inclusion of non-existent workers on government payrolls for embezzlement, false procurement and giving of favours on the basis of political contributions. Corruption schemes represent the second most common form of occupational fraud. Available statistics suggest corruption as a form of fraud accounted for about 38% of the cases in the 2018 report by the ACFE which translates to on average, $250,000 median loss to an organization.

Asset misappropriation

Asset misappropriation, which is the final and most prevalent classification of internally perpetuated fraud, is defined to include employees stealing or misusing the resources of their organizations (ACFE, 2012). Misappropriation of assets in firms could take the form of theft of the organization's cash, presenting false billing statements, use of working hours for personal activities and the use of organization's resources such as internet services and stationery for personal purposes. Albrecht, Kranacher and Albrecht (2008, p. 1) argue that for asset misappropriation to occur, "the act of asset theft, concealment and conversion must all be present". In addition, the asset taken must be for the personal benefit of the individual misappropriating the asset. The ACFE reports that most recorded organizational fraud cases are in the form of asset misappropriation (ACFE, 2012; ACFE, 2016; ACFE, 2018). Comparatively, asset misappropriation is the easiest form of fraud to commit and can be engaged in by all employees of a firm irrespective of their positions in the organization (Koomson *et al.*, 2020; Zahari *et al.*, 2020). Although the most pervasive, asset misappropriation often results in the least financial losses to organizations. ACFE (2018) report that although asset misappropriation cases had increased by about 7% since 2016, i.e. from 83.5% to 89%, it only contributed an averagely of $114,000 of the total loss per organization.

Occurrence of fraud in state-owned enterprises

Employee fraud as a phenomenon has been studied mainly among private sector organizations with less focus on state-owned enterprises. Working in state-owned enterprises is characterized by ineffective controls and misuse of the firm's resources among several other negative attitudes towards work. This is often so because people have the notion that the business belongs to no one and the activities of the business are funded with the taxpayer's money, and hence workers tend to do what they want. Those put in management positions are also not efficient in their oversight roles as, usually, they stand to lose nothing should the organization do well or not. The inefficient supervision of managers coupled with the non-concern of employees may lead to the occurrence of fraudulent activities in state-owned enterprises.

The occurrence of fraud in state-owned enterprises affects their ability to perform their role of supporting the nation with proceeds from their activities to undertake developmental projects. It is, therefore, important to examine the phenomenon of fraud in state-owned enterprises. A few studies have examined internally perpetuated fraud in the public sector but have focused on the prevalence of internal fraud but not the factors that influence employees to commit fraud (Abdullahi and Mansor, 2018). In this paper, some factors proposed to influence individuals to commit fraud are examined from a theoretical perspective.

Theoretical review

The motivation for employees to engage in acts considered fraudulent has often been explained from a theoretical perspective. Empirically, several studies (Mansor, 2015; Mansor and Abdullahi, 2015; Manurung and Hadian, 2013; Huber, 2017) have often used the FTT to explain the motive behind fraudulent activities of individuals against businesses. The current study relies on the FTT to explain the factors that influence employees of state-owned enterprises to commit fraud.

Fraud triangle theory

Propounded by the renowned criminologist, Donald R. Cressey in 1953, the FTT argues that individuals have reasons for the things they do (including engaging in the fraudulent act), and hence, an understanding of the motive behind the actions of individuals is critical in mapping up appropriate strategies to minimize the occurrence of fraud in businesses. Three related factors: pressure, rationalization and opportunity are predicted by the FTT to be the dominant reasons why individuals often engage in fraudulent activities in the field of work (Cressey, 1953). Essentially, the FTT postulates that for an individual to engage in a fraudulent act there should be some form of pressure posed on the person either from work or family and friends; the opportunity for the occurrence of fraud should be present; and the perpetuator of the fraudulent act would usually be in a state that is easy to justify his acts as not wrong but needful (Cressey, 1953). We discuss these elements of the FTT in detail in the next section.

Pressure

The first reason found by Cressey to influence people to commit fraud is pressure. Cressey defined pressure as a non-shareable problem that motivates a person to commit fraud. Thus, an individual is found in a situation where he or she is faced with financial and non-financial burdens that may drive the person to commit fraud (Cressey, 1953). Individuals faced with such pressures tend to seek interim options to solve their problems which presents engaging in fraudulent activities as a possible alternative (Omar and Din, 2010). Cressey (1953) suggests that trusted persons may be converted to violators of such trust when they are faced with these pressures or they perceive to have such a problem. According to Hasnan *et al.* (2008), although pressure is usually exerted from the external environment to meet certain financial goals, it could be a personally generated desire to attain some financial targets.

Opportunity

The second reason proposed by the FTT to influence individuals to commit fraud is opportunity. Opportunity could be in the form of trust the organization has in the individual to be in charge of some important roles within the organization with little supervision or the organization having weak control systems (Omar and Din, 2010). An organization with a weak board of directors lacks measures to detect and prevent fraud, has no sanctions for fraud perpetuators to deter others and lack an audit trial presents an opportunity for its employees to commit fraud (Kassem and Higson, 2012). Opportunity that exists in organizations can impact greatly on a person’s likelihood to engage in fraudulent activities (Ruankaew, 2016). Opportunity can be real or not, once an individual believes that such opportunities exist, he or she may take advantage to engage in fraudulent activities.

Rationalization

Rationalization is the third and final factor of the FTT. Rationalization is an attitude of an individual that makes him or her justify immoral acts they engage in as not criminal (Mansor and Abdullahi, 2015). Perpetuators of fraud often do not consider themselves to be criminals, they rationalize by understanding their illegal behaviour and maintaining the belief that they are still trusted persons as before committing the fraud. Hence, rationalization is an important influence for fraud to occur (Ruankaew, 2016; Vousinas, 2019). In fact, Jackson *et al.* (2010) concluded in their study that if a person is not able to provide justifications for his or her wrongdoings, it is unlikely that individual will engage in unethical conducts such as fraud.

Although the FTT has been in existence for over 65 years, its tenets remain a strong foundation to modern ways of investigating and examining fraud perpetuated against organizations internally (Albrecht *et al.*, 2010). The relevance of the FTT in explaining the phenomenon of fraud has been highlighted in several studies (Albrecht *et al.*, 2008, 2010; Lister, 2007; Murdock, 2008; Rae and Subramaniam, 2008). These studies provide empirical evidence that individuals commit fraud due to the pressures they face, the existence of the opportunity for fraud and their ability to rationalize their actions. Sujeewa *et al.* (2018) conclude that the FTT still remains a classical model for the occupational offender. The FTT is represented graphically as shown in Figure 1. The next section discusses these factors and their relationships with the occurrence of employee fraud.

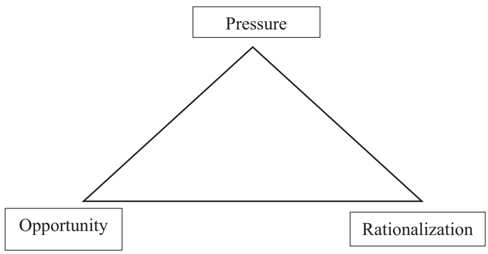
Conceptual framework and hypotheses development

Figure 2 shows the conceptual framework developed for the study with reference to the FTT and studies with similar focuses as that of the current study (Said *et al.*, 2017; Said *et al.*, 2018). The conceptual framework as shown in Figure 2 describes the relationships among the constructs used in the study.

Based on this conceptual framework, the following hypotheses will be tested.

Pressure and employee fraud

Pressure to commit fraud arises when an individual is faced with a non-shareable problem such as financial and non-financial burdens that may drive him/her to engage in fraudulent activities (Cressey, 1953). Individuals faced with such pressures tend to seek interim options to solve their problems and engaging in fraudulent activities becomes a possible alternative (Omar and Din, 2010). According to Hasnan *et al.* (2008), pressure is usually exerted from the



Source: Cressey (1953)

Figure 1. The fraud triangle

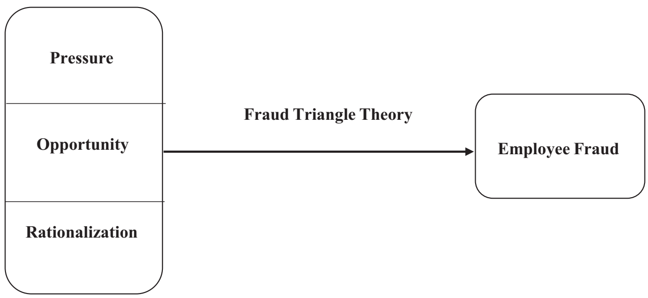


Figure 2. Conceptual framework

external environment to meet certain financial goals but could also be a personally generated desire.

Several researchers have found the pressure to be a factor that influences individuals to commit fraud (Koomson *et al.*, 2020). Ruankaew (2016) posits that every fraud perpetuator must have faced some kind of pressure to commit fraud. The pressure is what leads the perpetuator to engage in fraudulent activities. Albrecht *et al.* (2006) also found that all individuals in the organization, be it the executive, management or employees, experience some form of pressure. Other researchers agree that in response to financial, family or work pressures, fraud often comes about (Albrecht *et al.*, 2010; Said *et al.*, 2017; Said *et al.*, 2018). Theoretically, the FTT, Fraud Diamond Theory (FDT) and the Fraud Pentagon Theory (FPT) all point out that pressure influences individuals to commit fraud. In line with these findings, this study proposes that employees of state-owned enterprises who are faced with some forms of pressure are likely to commit fraud in their quest to alleviate such pressures. The study, therefore, hypothesizes that:

H1. Pressure has a positive relationship with the tendency of employee fraud to commit fraud.

Rationalization and employee fraud

People tend to have justifications of their own to every action they take, whether good or bad. There is empirical evidence that usually, for an individual to engage in fraud, he or she must be able to make an immoral action seem acceptable. Individuals who submit themselves to engaging in fraud often have a belief that engages them to legitimize their wrong acts as needful (Hooper and Pornelli, 2010). An individual's ability to always rationalize and justify a fraudulent act prior to its execution enables such a person to commit the fraud with much ease (Cressey, 1953).

Rationalization, therefore, enables perpetuators of fraud to justify their actions to make them acceptable to themselves and protect their belief and self-image as honest, innocent persons who were unfortunate to be caught up in a critical situation and not criminals (Cressey, 1953; Said *et al.*, 2018). Extant studies provide empirical support for the study's proposition that employees may commit fraud when they are able to provide justifications prior to the occurrence of the fraud to get rid of all feelings of guilt (Koomson *et al.*, 2020). Hence, this study hypothesizes that:

H2. Rationalization has a positive effect on the tendency of an employee to commit fraud at the workplace.

Opportunity and employee fraud

Opportunity is another factor that increases the likelihood of the occurrence of fraud among employees. When an opportunity to commit fraud is present, the likelihood of an employee being caught committing or engaging in fraud is less (Cressey, 1953; Lister, 2007). Opportunity for fraud could be as a result of trust the organization has in the individual to be in charge of some important roles within the organization with little supervision or the organization having weak control systems (Omar and Din, 2010). An organization with a weak board of directors lacks measures to detect and prevent fraud, has no sanctions for fraud perpetuators to deter others or lacks an audit trial presents an opportunity for its employees to commit fraud (Kassem and Higson, 2012). Kumar *et al.* (2018) also report that if overtime, organizations fail to seal opportunities for the occurrence of fraud, some workers in the organization may see it as a signal of "slack organizational culture" and eventually take advantage of these opportunities. This is because, these long-existing opportunities serve as temptations to such individuals (Beck and Ajzen, 1991). Several researchers provide empirical evidence to support the claim that opportunities created at the workplace can influence the occurrence of employee fraud (Albrecht *et al.*, 2006; McClurg and Butler, 2006; Ruankaew, 2016).

In this paper, a similar argument is made that the existence of opportunities in an organization may influence employees to engage in fraud. In this regard, the following relationship is hypothesized:

H3. Opportunity has a positive relationship with the tendency of an employee to commit fraud at the workplace.

Methodology

Research design, research instrument and data collection

The study followed a quantitative survey approach where questionnaires were used as the main tool for data collection. The questionnaire was in two main sections: Section A inquired about some demographic characteristics of the respondents whereas section B asked respondents to rate their levels of agreement to diverse measures of the variables of interest. Section B was developed by adapting existing measures of the study variables in Said *et al.* (2017). Out of the 350 questionnaires distributed to employees working in different state-owned enterprises in Ghana, 243 valid questionnaires received were used for the analysis.

Population and sample

The targeted population of the study includes individuals working in diverse organizations within the public sector. The diversity of the population has the potential of enriching the data to be used for the study. Most studies of similar nature to this study usually used a specific organization as its population. This study is among the few to draw responses from a wide range of populations like this. Employees of state-owned enterprises were sampled from this population for the purpose of this study by use of the simple random sampling technique. The simple random sampling technique was used for the study to ensure that all employees of state-owned enterprises have an equal chance of being included in the sample.

Drawing from Israel (1992), a population size of above 450 should use a sample size of at least 212. The population of the study being all individuals working in firms in Ghana is above 400. The study, therefore, uses a sample size of 350 individuals which is higher than the recommended threshold.

Data analysis and results

The data collected were first analysed descriptively to examine the characteristics of the respondents and their responses to the questions and subsequently using inferential statistics to test the main hypotheses of the study. The descriptive analysis was done in Statistical Package for the Social Sciences (SPSS) whereas the study used the structural equation modelling (SEM) technique, specifically, partial least squares-SEM (PLS-SEM) for the inferential statistics. SEM enables researchers to evaluate measurement models and structural paths more efficiently is a good tool for studies that use unobserved variables and have to estimate complex model relationships simultaneously (Afthanorhan, 2013; Astrachan *et al.*, 2014; Hair *et al.*, 2014).

Descriptive statistics of respondents

The characteristics of the respondents of the study are presented in Table 1. The results show that majority of the respondents were men, about 6% more than women. The respondents were largely youthful, with about 69% of them being thirty-five years and below. Most of the respondents indicated that they have had some form of business education (about 68%). With respect to working experience, about half of the respondents had been performing their current functions at the workplaces for less than 5 years and about 17% have been working with their organizations for more than 15 years. This is an indication that most of the respondents have a considerable amount of working experience. The incomes received by most of the respondents monthly were below GHS 3,000.

Descriptive statistics of constructs

Table 2 presents the views of the respondents on the occurrence of employee fraud in state-owned enterprises and the factors that influence employees to commit fraud. The mean scores and standard deviations of the indicators and the overall mean scores of the constructs are reported in Table 2. The degree of importance respondents attach to an indicator under each construct measure is demonstrated by the mean score for that indicator.

As shown in Table 2, employee fraud had an overall mean score of 2.45 which indicates that on average, the respondents agree that there exists the phenomenon of employee fraud in state-owned enterprises but the level of occurrence of employee fraud is not high. Thus, frauds perpetuated by employees of state-owned enterprises are not a prevalent event in Ghana. Out of the five indicators used to measure employee fraud, the majority of the respondents were found to extend their lunchtime to use office hours for their personal

Demographic variables	Item	Frequency (243)	(%) (100)
Gender	Male	129	53.1
	Female	114	46.9
Age	Below 25	76	31.3
	25–35	91	37.4
	36–45	49	20.2
	Above 45	27	11.1
Business education	Yes	165	67.9
	No	78	32.1
Working experience	Below 5 years	123	50.6
	5–10	55	22.6
	11–15	24	9.9
	More than 15 years	41	16.9
Income level	Below GHS 1,000	96	39.5
	GHS 1,000–2,999	80	32.9
	GHS 3,000–4,999	33	13.6
	GHS 5,000 and above	34	14.0

Table 1.
Descriptive statistics on respondents

Item	Constructs/indicator	Mean	SD
	Employee fraud		
1	Sometimes, I use the internet service of the office for personal purposes	2.92	2.01
2	Sometimes, I bring home valuable assets from my office for personal use	1.81	1.68
3	Given the opportunity, I will change the policy of my organization to suit me	2.58	1.9
4	Sometimes, I extend my lunchtime	3.21	2.07
5	Sometimes, I wrongly record some figures because I forget the actual figures	1.74	1.48
		2.45	*1.83*
	Pressure		
1	My work pressure is high	4	2.13
2	My work needs me to achieve KPIs is given by the company (e.g. target, achievement, workload, waiting time, audit, time frame and review)	4.75	2.06
3	I have much work that must be done simultaneously	4.37	1.94
4	I am faced with tension and depression because of the constant pressure at work	3.23	1.94
5	Expenses on necessities need to be cut off to ensure that my salary will be sufficient until the end of the month	3.96	2.13
6	Family expenses are extremely costly, which I cannot afford to pay in some cases	3.57	2.11
7	I am fully responsible to support my family financially	4.07	2.32
8	I need to hold my monthly debt payment in some cases because I do not have sufficient cash to pay	3.43	2.18
		3.92	*2.1*
	Opportunity		
1	Every transaction done has sufficient documentation and approval	2.56	2.05
2	Transactions are being entered in a timely manner	2.9	1.87
3	Transactions are being recorded in the correct accounting period	2.6	1.91
4	The separation of roles and responsibilities is clear	2.81	1.86
5	Proper supervision, monitoring and review of work are implemented	2.76	1.88
6	Policies, procedures and guidelines are well documented	2.67	1.89
7	Closed-circuit television (CCTV) is used to monitor entries and exit	3.99	2.57
		2.9	*2*
	Rationalization		
1	I think I am underpaid with the amount of responsibility given to me	4.39	2.271
2	I believe I must save a family member or loved one who is in need of financial aid	4.72	2.015
3	I believe I am in a desperate financial situation	3.33	2.155
4	No one will suffer if I use the office facilities for personal purposes	2.77	2.114
5	I am only borrowing the asset of the office and I will return it back when I am done	2.50	2.082
6	I believe that a gift from a customer, a vendor or a colleague is a gesture of good service rendered by me	4.04	2.269
7	I believe that I should be given some direction in performing my job	4.16	2.188
8	Some discretion on policies and procedures sometimes should be tolerated to help a customer, a vendor or a colleague	4.12	2.144
		3.75	*2.155*

Table 2. Descriptive statistics constructs

activities with the least involved in recording wrong figures for transactions. The construct pressure had the highest mean score among the factors predicted to influence employees to commit fraud. Thus, the respondents agree with the indicators of pressure measured in the study. The most common form of pressure posed on the respondents was from their workplaces, as the indicator “my work needs me to achieve KPIs given by the company” recorded the highest mean score (4.75) followed closely by “I have much work that must be done simultaneously” (4.37). The opportunity for the occurrence of fraud was found to be high as the respondents rated the indicators that measure the strength of their firm’s internal control systems as low (2.9). Interestingly, most of the respondents revealed that their firms had closed-circuit television (CCTV) is used to monitor activities in the firm as this indicated was rated above average (3.99). Similar to pressure, rationalization had an above-average mean score of 3.75. This finding means that, on average, the respondents hold beliefs that enable them to provide similar justifications as used in the study to measure the construct rationalization. The indicator "I believe I must help a family member or loved one who is in need of financial aid" recorded the highest mean of 4.72. Most of the respondents also held the belief that they are underpaid with the amount of responsibility given to them (mean = 4.39).

Reliability and validity

The measurement model was tested for reliability and validity using the composite reliability (CR), average variance extracted (AVE) and the Fornell and Larcker criterion of discriminant validity. The model was found to be reliable as the CR scores were all above the recommended threshold of 0.7 (Hair *et al.*, 2011; Nunnally and Bernstein, 1978). The AVE scores as presented in Table 3 all met the minimum recommended threshold value of at least 0.50 as suggested by Hair *et al.* (2011) for convergent validity to be attained. Again, as shown in Table 4, the AVEs of each construct (in the diagonal) was greater than the squared cross-correlations between the constructs (beneath the diagonals) as recommended by Fornell and Larcker (1981). Hence, both convergent and discriminant validity is assured.

Structural model analysis

Upon attainting model fitness in terms of validity and reliability, the structural model was tested to check for issues of multicollinearity. The results from the Variance Inflated Factor demonstrate that the model is free from multicollinearity issues as the values in Table 5 are all below the recommended threshold of 10 (Hair *et al.*, 2011). The model also recorded an R^2

Table 3.
Composite reliability and average variance extracted

Constructs	CR	AVE
Employee fraud	0.781	0.545
Opportunity	0.891	0.581
Pressure	0.791	0.563
Rationalization	0.786	0.552

Table 4.
Discriminant validity (Fornell- Lacker criterion)

Constructs	Employee fraud	Opportunity	Pressure	Rationalization
Employee fraud	0.738			
Opportunity	0.246	0.762		
Pressure	0.322	−0.081	0.750	
Rationalization	0.431	0.158	0.416	0.743

Table 5.
Variance inflation factor

Variable	VIF
Opportunity	1.054
Pressure	1.242
Rationalization	1.265

(coefficient of determination) of 25.4% which means that about 25% of the variations in the dependent variable (employee fraud) are explained by the independent variables (pressure, rationalization and opportunity). In addition, the model had predictive relevance as the cross-validated redundancy (**Q^2**) from the blindfolding procedure in PLS-SEM yielded a score of 0.119 above the recommended threshold, 0.

Figure 3 presents the structural model indicating the relationships between the study constructs. The proposed hypotheses were finally tested using the Bootstrapping procedures of Smart-PLS 3.0. Results from the bootstrapping are presented in Table 6.

Discussion of results

The hypotheses testing yielded significant results for all the relationships among the constructs as shown in Table 6. The elements of the FTT (pressure, rationalization and opportunity) were all found to have a positive association with the construct of employee fraud. The highly significant (0.001) and positive relationship between opportunity and employee fraud reveals that employees of state-owned enterprises engage in fraudulent acts against their organizations when motivated by the existence of some form of opportunities for the occurrence of fraud. Individuals who work in state-owned enterprises with weak internal controls usually see that as an open door to commit fraud. Employees, therefore,

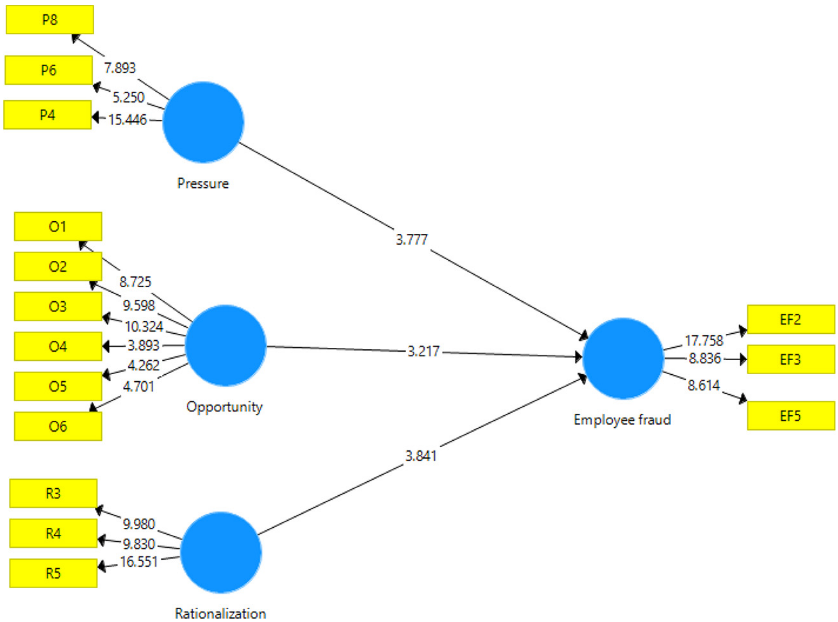


Figure 3. Path diagram of the structural model

Table 6. Hypotheses, coefficients and *p*-values

Hypothesis path	Coefficient	*p*-values	Result
Pressure-> employee fraud	0.210	0.000	Accepted
Rationalization -> employee fraud	0.310	0.000	Accepted
Opportunity -> employee fraud	0.214	0.001	Accepted

take advantage of these loopholes in their organizations to commit various frauds against their firms and are often confident of not being detected. This finding provides empirical evidence for the inclusion of opportunity in the FTT as a factor that explains why individuals commit fraud. The positive relationship between opportunity and employee fraud is consistent with findings of several extant studies on fraud (Albrecht *et al.*, 2006; Kassem and Higson, 2012; Koomson *et al.*, 2020; Kumar *et al.*, 2018; McClurg and Butler, 2006; Omar and Din, 2010; Ruankaew, 2016). To the extent that organizations cannot control individual factors such as financial and personal pressures, an important avenue for minimizing the occurrence of fraud is to avoid creating opportunities for fraud (McClurg and Butler, 2006; Ruankaew, 2016).

The relationship between pressure and employee fraud also yielded a highly significant (0.000) and positive result. Thus, employees of state-owned enterprises engage in fraudulent acts when faced with pressures either from work or family and friends, in financial or non-financial forms. As proposed by Cressey (1953), when faced with pressures, individuals often find ways of alleviating these pressures which present engaging in fraudulent activities as an alternative. The FTT, FDT and FPT all point to the fact that when individuals are pressured, the likelihood to engage in a fraudulent act is high. This is because such individuals often find preoccupations to find immediate solutions. Thus, when pressurized, people are more likely to compromise and engage in acts that they would otherwise not involve themselves with. Empirically, this finding is consistent with the evidence provided by several existing studies on fraud (Albrecht *et al.*, 2010; Cressey, 1953; Howe and Malgwi, 2006; Koomson *et al.*, 2020; Omar and Din, 2010; Ruankaew, 2016; Said *et al.*, 2017).

The study found a highly significant (0.000) and positive relationship between rationalization and employee fraud. This finding suggests that people who tend to have justifications of their own for their wrong actions are most likely to commit fraud. Thus, it is easier for employees to commit fraud when they hold the belief that their wrongful acts are indeed needful and will end in helping others. Such individuals usually have a mindset that does not only fails to recognize wrongdoings but also an attitude that justifies their actions as not offensive. This finding of the study is supported by theoretical underpinnings for the occurrence of fraud: the FTT, the FDT and the FPT. These theories posit that when individuals are able to justify a fraudulent act prior to execution, the likelihood of them engaging in that act is high as such individuals hold beliefs that necessitate the occurrence of the fraudulent act and alleviates any feeling of guilt. Extant studies provide similar empirical evidence for the positive relationship between rationalization and employee fraud (Ghafoor *et al.*, 2019; Kassem and Higson, 2012; Koomson *et al.*, 2020; Said, Asry, *et al.*, 2018; Kazemian *et al.*, 2019; Vousinas, 2019; Wolfe and Hermanson, 2004).

Conclusion

With the increasing occurrence of internally perpetuated fraud against organizations across the globe, great attention has been devoted, generally, to the phenomenon of fraud in recent times. Most of these studies have, however, predominately focused on fraud in private organizations. Driven by the insufficient research on public sector organizations in relation to the issue of fraud, this paper investigated the occurrence of employee fraud in state-owned enterprises with a focus on the possible factors that influence employees to engage in fraud. In line with the proponents of the FTT, the study hypothesized that the factors pressure, rationalization and opportunity are likely to influence employees of state-owned enterprises to commit fraud against their organizations. The study findings provided empirical support for the relevance of the FTT in explaining issues of internally perpetuated fraud. The results indicate that employees commit fraud due to pressures they encounter, their ability to rationalize their actions prior to execution and the opportunities created for fraud at the place of work. Thus, all three elements of the FTT were found to be important predictors for the occurrence of fraud in state-owned enterprises by employees.

The findings of the study have important implications for managers and owners of organizations in mitigating the occurrence of fraud by employees at the workplace. The study highlights some push factors for the occurrence of employee fraud which could be helpful in designing strategies directed at reducing the occurrence of fraud by employees. For instance, the finding that when employees are pressured, they may commit fraud to alleviate such pressures can guide managers in ensuring that employees are not loaded with too many tasks that pose so much pressure on them and, hence influence them to commit fraud. With regard to the contribution, this study is among a few that focus on state-owned enterprises in examining employee fraud. The study provides some new insights into the fraud discourse by investigating the occurrence of employee fraud in state-owned enterprises focusing on the factors that influence employees of these organizations to commit fraud.

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