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The effect of fraud risk management, risk culture and performance of banking sector: A conceptual framework

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Abstract
Bank fraud and the fall of world-leading business organizations have triggered scholars and professionals to re-examine the link between fraud risk management, and the bank's performance. The purpose of this paper is to propose a conceptual framework for measuring fraud risk management (preventive, detective, and responsive fraud risk management), risk culture and bank performance which could be used by banks and regulatory bodies. By theoretically review the relationship between fraud risk management, risk culture, and bank performance by suggesting future research agenda in the area. From the comprehensive review of past researchers in this area, it is found that fraud risk management has a positive relationship with bank performance. Similarly, evidence has shown that risk culture influence bank's performance. As studies that link fraud risk management, risk culture and bank performance are rare this paper will be pioneering in the relationship; this may in a long way aid in making various business decisions.

Keywords: bank fraud, risk management, risk culture, banking sector

Introduction

Every business is exposed to the risk of fraud being it private, public, profit and non-profit, and even religious organization. Fraud is believed to be among the most challenges and critical problems in the current corporate environment (Smith, Omar, Idris, & Baharuddin, 2005) [96]. It is like a contagious disease that not only cripples the banking sector but its effects are felt throughout the economy. Fraud can be defined as any action taken to deceive another party to gain benefit (Association of Certified Fraud Examiners (ACFE), 2012). Despite measures being put in place to minimize the occurrence and effects of fraud in an organization by the government, firms, and professional's organizations, fraudulent activities still emerge leading to a significant cost to society.

The risk of fraud is in every business and is rampant in both developing and developed nations and differs in its magnitude (Inaya, 2016) [54]. ACFE (2012) estimated that a firm loses 5% of its income annually to fraud and the cumulative global annual loss to fraud during 2011 review exceeded USD3.5 trillion. The average loss due to fraud ranges from as low as $700,000 recorded in India too as high as $2.0 million recorded in Americas. In 2011, the Asia Pacific recorded average loss due to the fraud of $1.4 million; in Australia and New Zealand, $1.1 million, in Europe $1.9 million, Middle East & North Africa (MENA) $900,000 (KPMG, 2011).

Furthermore, it is also reported that global fraud cases continued to increase every year. For instance, in UK cases of fraud increased from 314 cases in 2010 to 354 cases in 2014 (KPMG, 2014a) [70]. In Australia and New Zealand, the average number of frauds cases increased from 530 in 2008 to 813 in 2010 (KPMG, 2010) [68]. Likewise in Nigeria, it is reported by ACFE (2016) that fraud cases in Nigeria have been on the increase from 21 fraud cases in 2010, to 70 cases in 2016. In Singapore, it was reported that fraud incidence rose from 47% in 2011 to 58% in 2014 (KPMG, 2014c) [72]. Also, it was reported that in Malaysia the value of fraud above RM1million increase from 9% in 2009 to 10% in 2013 (KPMG, 2013) [69]. These indicate that fraud remains an imminent threat to organizations and this draws the researcher's attention to the growing needs of fraud risk management research and its effects on performance of organizations.

The excessive exposure of many financial intermediaries to specific risk profiles (in particular fraud risks) is due to numerous reasons, among which is the lack of an adequate level of risk culture. This term identifies the overall behavior of human resources and organizations when managing, monitoring, and dealing with specific risk profiles. These necessitate the employment of different mechanism to reduce the menace of fraud, notwithstanding, the situation continues as a result of weak risk culture.

The global financial crisis and corporate scandals of 2008 have highlighted ethical issues in the financial institutions business practices. These have made the concept of risk culture to gained tremendous attention. Levy, Lamarre, and Twining (2010) [77] note that in the aftermath of the 2008 financial crisis, risk culture has been accepted as one of the key contributing factors to the banks collapses. Pertinent stakeholders, rating agencies, and regulators have conceded that the substantial financial losses incurred by these institutions are due to their weak organizational risk culture which undermined the effectiveness of their risk management frameworks (Wood & Lewis, 2017) [102].

Despite the extensive research on fraud risk management, very few studies have been conducted in the banking sector, and most of them are not attached to the performance of banking sector, while none is linked to risk culture. For instance, Chepkoech and Rotich (2017) [23]; Finnerty, Hegde,

and Malone (2016) [31]; Koong, Liu, Qin, and Tingting Ying (2017) [66]; and Popoola, Che-Ahmad, and Samsudin (2015) [89] which all have certain kind of shortcomings such as small sample, convenience samples, limited scope, non-banking sector, addressing issues other than banks' performance, etc.

The objective of this study is to review the relationship between fraud risk management dimension (fraud preventing, detecting, and response), risk culture, and performance of banking sector. The outcomes from literature and theoretical review will be of vital importance to the interest of banks that sought to know how fraud risk management and risk culture will relate to their performance. This study differs from most current research; thus will contribute in several ways. First, it helps the organizations to solve the problem of fraud in the banking sector and increased control of the working environment.

Secondly, current research frequently studies just one or two dimensions of fraud risk management while this research concentrated on three dimensions, namely, preventive, detective, and responsive fraud risk management. Thirdly, it will contribute to the literature as the first of its kind that links the relationship between fraud risk management, risk culture, and performance of banking sector. Lastly, suggestions on a future research agenda on this promising area of research are made. This paper is divided into five subsections from the introduction, literature review, framework, conclusion, and references.

Literature Review

The occurrence of substantial corporate scandal cases that triggered the world in recent years, such as those involving Enron in 2001, Parmalat in 2003, Bernie Madoff in 2008, Satyam in 2009, and other giant companies shows that fraud has no boundary. As a result of this menace, in most country, an organization has been instituted to fight fraud. For instance, in Nigeria, Economic and Financial Crime Commission (EFCC), in Malaysia, Malaysian (C4) Center to Combat Corruption and Cronyism, Anti-Corruption Commission, in India, Serious Fraud Investigation Office (SFIO), in England, UK's National Fraud Authority, and in Arab Gulf region Arab Counter Fraud and Anti-Corruption Commission. This section reviews the literature on the following sub-headings; fraud, fraud risk management dimensions, risk culture, and bank performance.

Fraud

Fraud as a concept has defied all attempts by scholars and policymakers to generate a universal definition. According to the Association of Certified Fraud Examiners (ACFE) (2010) [2], fraud is "the use of one's profession for personal enrichment through the deliberate misapplication or misuse of the employing organization's resources or assets." Similarly, it can also be seen as an act of commission which is planned to cause the illegitimate gain to one person and unfair loss to the other either by the disguise of facts or otherwise (Fynefaceph & Oladutire, 2013) [37]. Fraud is perpetrated by organizations and individuals to avoid payment or loss of services; to obtain services, property, or money; to secure personal or business advantage. Therefore, banking fraud is defined as the use of deliberate misrepresentation to fraudulently obtain assets, money, or other valuable property held or owned by a financial institution. In the perspective of the financial industry and specifically the banking sector, fraud remains a huge issue, especially these turbulent days, mainly driven by the financial crisis (Vousinas, 2016) [101].

The costs of fraud to society and organizations cannot be estimated easily because initial fraud loss is the start of a whole series of additional costs to be dealt with. A significant multiplier effect of fraud was evidenced in a report of Brand and Price (2000) [15] that the estimated total cost of fraud to society amounted to £60 billion, while the actual cost of fraud was only £18.6 billion. This is due to additional cost beyond the real loss which includes security expenditure, insurance, lost output, victim services, health services, and the criminal justice system, to name most. Massive frauds have led to the collapse of an entire organization, investment losses, significance legal costs, incarceration of key individuals, and erosion of confidence in capital markets (ACFE, 2009) [1]. Also, fraudulent behavior can severely damage a company's reputation, erode shareholder confidence and lead to the collapse of major corporations (O'Reilly-Allen & Zikmund, 2013) [82].

The negative economic impact of fraud is more severe in the financial industry than other sectors of the economy. In the banking sector, fraud may cause loss of reputation and lead to loss of potential customers (Vousinas, 2016) [101]. In the event of fraud, banks incur substantial operating costs by refunding customers' monetary losses (Gates & Jacob, 2009) [38], while bank customers experience considerable time and emotional losses which damaged a bank-customer relationship because of shattered trust and confidence. This will, in turn, increased dissatisfaction because of a perceived service failure (Hoffmann & Birnbrich, 2012) [51] and may ultimately lead to bank's poor performance and failure.

Fraud Risk Management

Managing the risk of fraud requires the same process as managing other business risks. The guidelines on risk management are available in the ISO 31000 (2010) and the COSO framework (2013). Fraud risk management refers to any activities planned and actions taken to minimize risk arising from the potential and actual cases of corporate fraud. The fraud risk management stems from the risk management framework proposed by the Committee of the Sponsoring Organization (COSO). The COSO framework recognizes the fact that all organizations require a formal internal control procedure and recommend that adequate measures are used in evaluating whether objectives are met or not. The COSO framework (2013) under principle 8 outlines four recommendations to mitigate fraud namely: considers various types of fraud, assesses pressures, opportunities, and rationalizations. The recommendations are aligned with the elements of fraud triangle (Mailley, 2015) [78].

The organization considers the possibility of fraud in assessing its risks towards achieving its objectives since entities or individuals may act outside of organization's ethical conduct. Therefore, the framework emphasizes compliance and fraud risk to be the new standard for measuring the internal control effectiveness as part of financial year audits. The organization's internal control system needs to be active in adjusting to changes in regulatory environments, business, and operations (COSO, 2013). Fraud risk assessment is an integral part of an anti-fraud program that is based on the COSO framework, which considers the ways that fraud and misconduct can occur by and against the entity. It assists in providing structure to tackling the potential of fraud in a proactive manner, which

will also reduce exposure from fraud risk. Additionally, it supplements the internal controls environment in helping to prevent, detect and deter fraud.
Organizations are trying to have a proactive strategy to attain higher levels of business integrity through transparency, sound corporate governance, effective and efficient internal control (KPMG, 2014b) [71]. Previous literatures indicated that an effective fraud risk management approaches encompasses controls and measures that can be grouped into three broad dimensions: preventives, detectives, and responsive measures (ACFE, 2015; Alavi, 2016; Albrecht, Albrecht, Albrecht, & Zimbelman, 2012; Boateng, Boateng, & Acquah, 2014; KPMG, 2016; Zhang, 2012) [3, 5, 6, 14, 73, 104]. Current researches on fraud and the management of fraud mainly focus on detection and preventive approach. These proactive approaches aim at averting and detecting fraud at an early stage and in line with firm's strategic objectives to tackle the fraud before it occurs. However, responsive measures are no doubt need equal focus to manage residual fraud risks. Thus, an effective business-driven fraud risk management approach is one that is focused on three aspects: detection, prevention, and response (Boateng *et al*., 2014; KPMG, 2016) [14, 73].

Preventive fraud risk management

Preventive fraud risk management means avoiding the occurrence of fraud. In other words, it involves the efforts to reduce the frequency of fraud occurrence to zero. Prevention and deterrence measures are less costly than the time and expense required for fraud detection and litigation (Sanusi, Rameli, & Isa, 2015) [92]. The best approach to fighting fraud is to prevent it from happening in the first place and preventing it is mostly on improving the key business processes (Albrecht *et al*., 2012) [6]. Prevention of fraud starts with the identification of the weakness in the current systems of an organization and the enforcement of controls if introduced, will reduce the opportunities for fraud and warns potential fraudsters that organization is aggressively monitoring the business and that in turn deters fraud. Therefore, it is imperative to place a strong emphasis on fraud prevention, as it reduces the opportunities for fraud from occurring. However, despite the importance of fraud prevention strategy to organizations, it was reported in a survey of UK FTSE 100 index, that significant number of company surveyed by Button, Gee, and Brooks (2011) [19-20], 30% did not have a counter fraud strategy.
Various methods of fraud prevention have been proposed by the scholars and professional bodies which if adapted will reduce the occurrence of fraud in an organization. Fraud prevention efforts/activities involve intervention to human, technical, and improving policies of an organization. Employing preventive strategies will prevent bank fraud and preserve the integrity, safety, and authenticity of the financial transactions.
Human intervention measures that include surprise audit, fraud prevention training, employee counseling programs, reference checks on employees, review of customers associate, limits and approval authorities, are among the preventive measures of fraud in an organization (Halbouni, Obeid, & Garbou, 2016; N. Omar & Bakar, 2012) [47, 86]. In the employee awareness training program, all employees need to be given clear roles and levels and to be familiar with company's ethical conduct standards (Freddie Mac, 2016). Other measures include employees' job rotation and engaging more than one person in large-value transactions (Bhasin, 2016). Likewise, professional bodies like INTOSAI (2004) revealed that fraud prevention mechanism should include segregation of duty (authorization, recording, reviewing, and processing), limits, authorization and approval procedure, and control over access to resources and records.
While, the technological methods employed in preventive fraud includes updating the technologies employed periodically, use of transaction limits, control over access to information, fraud hotline, application of security mechanism, virus protection and password protection (Halbouni *et al*., 2016; M. Omar, Nawawi, & Salin, 2016) [47, 86]. KPMG (2006) [47, 67] opined that fraud prevention requires the adoption of a suitable anti-fraud control mechanism which is implemented at the unit, such as access control, implementation and application of security mechanism, and physical security control system. Establishment of an internal audit or fraud examination department may ensure that the technologies employed are updated periodically, and strict vigil of the working is kept (Bhasin, 2016).
In addition, on policy intervention, improving policies of an organization such as reporting policies and procedures employed, and communicate them to employees, anti-fraud policy, fraud vulnerability reviews, whistle-blowing policy, ethics policy, increased the role of audit committee, and imposing a penalty and disciplinary action are among the effective fraud prevention mechanisms (Halbouni *et al*., 2016; N. Omar & Bakar, 2012) [47, 86]. Fraud prevention may thus entail chances for banks to enhance the relationships with their customers. It gives banks the opportunity to re-assure customers' trust in their services (Guardian Analytics, 2011) [42]. The financial institution nowadays encountered problems of financial and non-financial, and most are as a result of an ineffective system of fraud prevention such as internal control.

Detective fraud risk management

Fraud detection involves identifying fraud as quickly as possible once it has been perpetrated. Fraud detection strategies are plans implemented to efficiently and promptly identify frauds that have by-passed the preventive measures so that an organization can take proper corrective action (Australian Standard, 2008) [10]. Most of the fraud is carried out by insiders as such it takes a longer time to be detected (KPMG, 2017b) [75]. Fraud detection which involves mechanisms applicable both at the unit level and bank levels including all controls adopted to mitigate the operational risks that contribute to the detection of potential fraud (Burazeri & Sula, 2015) [17].
Burnaby *et al*. (2009) [18] in detecting fraud by the organization revealed that review of access control, physical securities and test of controls to the analysis of risk are the most effective means of fraud detection. However, hotlines, are the only statistically significant control measure of fraud. Also, measure such as regular ethics (fraud) training, external audits and internal audit all reduce fraud losses by detecting fraud when using separately (Chartered Institute of Management Accountant (CIMA), 2008; Dominic & Lanoue, 2015; Halbouni, 2015; Njenga & Osiemo, 2013) [22, 26, 46, 81].
Among the essential method of detecting fraudulent transactions is internal control system. This is confirmed from the survey by KPMG in 2013 whom illustrated that the most common detection method is internal control (39%),

followed by internal auditor review and employees notification (both 24%), whistle-blowing mechanisms (21%), and tips from an external party (16%). Interestingly, fraud also can be discovered when a company changes the personnel on duty (13%) (KPMG, 2014) [70-72]. An efficient and effective internal control system requires a proper control environment, risk analysis, control proceedings, oversight, and information system.

Furthermore, Halbouni *et al.* (2016) [47] reveal that account reconciliations, electronic surveillance, increased attention of senior management, cash reviews, fraud auditing, internal control review, fraud hotline, fraud detection training, inventory observation, and fraud software are among the effective way of detecting fraud in organizations. However, among the most common method by which fraud is detected is tipped. This can be ascertained from the work of Goldmann and Kaufman (2009) [41] who reported that over 46 percent of identified cases are reported via a tip from an employee, vendor, or another whistleblower.

Despite the importance of fraud detection in organizations, the commitment to countering fraud in most organization is not high enough (Button, Gee, & Brooks, 2011) [19-20]. Many individuals and organizations are reluctant to report frauds, and many also pursue it through the civil courts (Kassem & Higson, 2012) [63]. Perhaps most importantly, many frauds are undiscovered and therefore hidden from official returns. This means recorded statistics of fraud presented by the police and related bodies only capture the tip of the iceberg (Buton, Gee, & Brooks, 2011) [19-20].

Responsive fraud risk management

Organizational responses to fraud vary significantly from sector to sector and across countries. According to ACFE (2010) [2], having numerous ways and mechanisms of reporting fraud incidences in an organization leads to effective control of fraud. Organizations should recognize the establishment of fraud response strategy. The tone at the top should define multiple ways of reporting fraud incidences on detection or suspicion (Biegelman & Bartow, 2012) [12]. The most effective means of fraud respond reported by Kapardis, and Papastergiou (2016) [60] includes internal investigation, referred to the appropriate authority, reviewed by the audit committee, voluntary resignation or retirement, civil action for recovery warning or reprimand, settled before the courts, immediate dismissal, and disciplinary action. Fraud investigation as a response mechanism may involve law enforcement teams and or internal fraud investigators (KPMG, 2006) [67].

Biegelman and Bartow (2012) [12] suggest that an organization should be equipped with internal fraud investigators as a response strategy to fraud. It is the mandate of fraud response team to issue preventive and prosecutorial recommendations. Adoption and implementation of the key recommendations remain a daunting task of the top leadership or operational heads (The Institute of Internal Auditors, (IIA, 2007) [100]. IIA (2007) further recognizes that most organizations still have challenges implementing actions and recommendations on executives and directors suspected to have perpetrated fraud.

Risk Culture

Risk culture is a multidimensional concept. It includes risk and culture which are complex scopes (Schmitt, 2017) [94]. Different scholars have variously defined culture according to their intellectual bend. In the word of Daft (2007) [25], culture refers to a group of values, norms, believes, and understanding which members of organization think is a good thing, It can be adapted to the external environment and passed on to new members for coordination within the organization. Risk culture was defined by Lima and Castro (2005) as a behavioral system that envisages the core behaviors and values adopted by an organization which can be used in shaping risk decision-making processes.

Additionally, professional bodies like IIF (2009) [55] and KPMG (2017a) [74] define risk culture as the norms of behavior for groups and individuals within an organization that determine the collective ability to identify, openly discuss, understand, and act on the organizations current and future risk. Weak organizational culture undermines the effectiveness of an organization. This can be understood by the global financial crisis and corporate scandals of 2008 report which highlighted ethical issues in the financial institutions business practices.

Pertinent stakeholders, rating agencies, and regulators have conceded that the substantial financial losses incurred by these organizations are as a result of their weak organizational cultures which undermined the effectiveness of their risk management frameworks (Wood & Lewis, 2017) [102]. The report of KPMG (2017) [74-75] revealed that it is essential for an organization to evaluate their risk culture specifically to measure the system of values and behaviors present n an organization that will shape their risk decisions.

A good risk culture can be achieved by establishing appropriate risk design, protocol, and strategy (Finucane & Holup, 2005) [32]. It must be translated into actions that can ensure the achievement of operational and tactical objectives. Risk culture becomes a basis for allocating risk management accountabilities to business owners throughout the organization. Risk culture should promote operational efficiency at all levels, support performance measurement, accountability, and reward. Ernst and Young (2014) [30]; FSB (2014) [35] and IRM (2012) [57] proposed four indicators that should be taken into account in assessing the presence of adequate corporate risk cultures in banks. The indicators are discussed below:

1. The tone from the top: this suggests the essential role played by the board and senior management in the classification of the basic expectations and values concerning corporate risk culture. The behaviors of senior management and board should be persistently aligned with the principles of leading by example. The top management must undertake regular assessments, take control of risk culture, and take care of the promotion to promptly cope with the potential misalignments between principles and behaviors that may occur;
2. Accountability: all employees must be involved in acceptance and understanding the risk approach adopted by the organization; human resources must be aware of the consequences of actions not complying with the rules, as well as capable of acting properly. It is believed that responsibilities of managing risks should be formally added to job descriptions (ownership of risk);
3. Effective communication and challenge: an environment that encourages dialogue, and transparency both vertically (between the management and board, as well as between the staff and management) and horizontally (within the board) is an indicator of sound risk cultures. The mechanisms to facilitate risk communication on the

different levels of the organization can have formal (meetings between specific risk-focused committees, people belonging to various functions) or informal characteristics (possibility of direct and immediate contact between risk management functions and line operators when the unexpected situation may occur (raise the hand). In particular, adequate training processes about risk management desired behaviors proved to be an essential tool;

4. Incentives: proper risk-taking activities largely derive from motivations of individual employees'. They can be encouraged through the use of career advancement, performance assessment, and appropriate remuneration systems. It is rational that these mechanisms should be oriented not to limit itself to the short-term financial results, rather to the long-term interests of the bank and its customers. In operational terms, it would be appropriate that compliance functions and risk management should support the human resource department in the process of assessment, remuneration, employees' promotion, and the recruitment processes, to stimulate their sensitivity to future and current risks;

In another perspective, Geretto and Pauluzzo, (2015) [39]; Levy *et al*., (2010) [77] suggest main features that should characterize a robust risk culture in the banking sector in the following:

- Individual and collective responsibilities: employees should adopt risk management as a direct responsibility and must involve all members of the organization;
- The commonality of ethics, values, and purpose: these are traditional characters of the individual or employees that should be aligned with the risk tolerance, approach, appetite, and strategy expressed by the organization;
- General application and adoption of risk culture: the risk must be considered at every level of the organization and in any activity, from strategic planning to daily operations;
- Understanding the value of effective risk management: employees must be aware of the added value that effective risk management brings to the business organization;
- Transparent, timely, and correct communications: employees must be able to discuss openly and transparently about risk, using a common vocabulary that promotes a shared understanding;
- The expectation of challenge: employees need to acquire challenging attitudes towards others (even if they are authority figures). The person being challenged must accept the dialogue with a positive approach
- Presence of a learning organization: the collective capacity of the organization to effectively manage risks must continuously improve through targeted learning processes;

Control Variables

Considering the fact that performance outcomes could be affected by bank-specific characteristics this study introduces size of a bank as a control variable. Previous studies on performance have found that firm size to be a critical firm-specific factor that affects the performance of an organization (Ofoeda, 2017; Shin, Sung, Choi & Kim, 2015; Subramaniam & Youndt, 2005) [83, 95, 98]. Shin *et al*. (2015) [95] s used the number of employees a measure of organization's size.

The previous findings on the effect of bank size on performance are not uniform. Studies conducted by Ng, Ye, Ong, and Teh (2017) [80]; Paul, Devi, and Teh (2012) [88] reported a significant and positive impact of a bank's size on its performance. Conversely, some studies point out that size and performance were closely but inversely related to each other. For instance, studies from Sufian and Chong (2008) [99] for banks in the Philippines show that impact of bank size was negatively related to profitability. This may be due to the fact that once banks have become very large, additional expenses due to some reasons such as an increase in overhead costs and other expenses may lead to negative performance (Nasserinia, Ariff, and Fan-fah, 2017) [79]. Therefore, this study uses bank size as a control variable.

The Performance of banking sector

Performance of an organization can be defined in many ways. For instance, Antony and Bhattacharyya (2010) [8] defined performance as the measure that is used to assess and evaluate the success of an organization in creating and delivering value to its external as well as internal customers. Firm performance can also be seen as an assessment of whether strategic goals are being achieved or not. Some view performance from objective measures (financial) while others from subjective measures (non-financial), (Aliyu, Jamil, & Mohamed, 2014) [7], with the most common indicators being yearly profit, return on investment and revenue growth

Financial performance is a measure of how well a firm can use assets from its primary mode of business to generate revenue. The objective measures use a set of financial ratios or volume measures. It can also be used as a general measure of a firms' overall financial health for a given period and can also be used to compare similar businesses across the same industry or to compare industries in aggregation (Hales, 2005). The sound financial strength of a bank is a guarantee not only to its depositors but also to the employees, shareholders, and the whole economy (Olongo, 2013) [84]. In most situations, researchers use financial measures to explain firm performance. For instance, measures such as return on investment, return on sale and return on equity are some of the frequently used parameters to measure performance (Saeidi, Sofian, & Siti Zaleha, 2014; Henri, 2004) [91, 49].

Different measures are employed in measuring the financial performance of an organization. For instance, return on assets (ROA), return on investment (ROI), growth in deposit (increase in sales), profit growth and liquidity (Jha & Hui, 2012; Otache & Mahmood, 2015) [58, 87]. Hernaus, Bach, & Vesna Bosilj Vukšić (2012) [50] measure financial performance with profitability, ROA, and value added per employee. Furthermore, sales, earning per share, ROA, debt ratio, net profit margin, and ROI are used as proxies for financial performance (Wu, Tzeng, & Chen, 2009) [103]. Similarly, Rasid, Golshan, Mokhber, Tan, and Mohd-Zamil (2017) [90] used ROI, ROA, ROE, revenue growth, liquidity, and branch budget target to measure the financial performance of banks.

In addition, non-financial performance measures are a good indicator of a firm's long-run performance, and they assist the managers to evaluate and oversee the progress of their firm with respect to the objectives of their strategy (Kaplan & Norton, 2001) [62]. Some nonfinancial measures evaluating from customers' perspective are customer satisfaction, number of new customers, number of customers' complaints and customers' retention (Hernaus, Bach & Vesna Bosilj

Vukšić, 2012; Jha & Hui, 2012; Otache & Mahmood, 2015; Rasid *et al*., 2017; Wu *et al*., 2009) [50, 58, 87, 90, 103]. Other nonfinancial measures used in the previous literature are profit per customer, market share, transaction efficiency, employee stability, company's reputation, mutual trust, product quality and management performance (Wu *et al*., 2009) [103].

Some researchers have opined that the current emphasis on financial performance measures diverts firm's attention from non-financial factors such as business efficiency, customer satisfaction, product quality, and productivity (Hussain & Hoque, 2002) [53]. In another perspective, non-financial measures are better forecasters of a long-run firm's performance as well as monitoring and assessing of firms efficiency by the business leaders (Robert S. Kaplan & Norton, 1996) [61]. Furthermore, a study conducted by Hakkak and Ghodsi (2015) [45] revealed that use of nonfinancial performance measures in organizations has a significant positive effect on firms' competitive advantage and sustainability. This view is supported by Cristian and Monica (2017) [24] who proposes a multi-dimensional model for measuring organizational performance and revealed that the best pointers are those that capture different measurements or characteristics of overall organizational performance construct.

Thus, for a more broad assessment, organizations have resorted to the use of both financial and non-financial performance measures (Judge, Naoumova, & Koutzevol, 2003; Rasid *et al*., 2017) [59, 90]. Both financial and non-financial measures serve as indicators used in monitoring strategy implementation throughout the organization and whether strategic goals are being achieved or not (Bremser & Chung, 2005) [16]. Many researchers such as Hussain and Hoque (2002) [53], Kaplan and Norton (2001) [62] have stressed that in the service sector, like the insurance and banking industry, it is essential to make use of both financial and nonfinancial performance measurements. This view is supported by many scholars (Dossi & Patelli, 2010; Elnihewi, Mohamed, & Hanim, 2017; Gweyi & Karanja, 2014; Hakkak & Ghodsi, 2015; Hussain & Gunasekaran, 2002; Rasid *et al*., 2017) [27, 29, 43, 45, 52, 90].

Proposed research framework

Several studies have explored the relationship between fraud risk management and organizational performance. Empirical evidence indicates positive relationship between fraud risk management and firm performance in various organizational setting and in several countries (Furlan, Vasilecas & Bajec, 2011; Hoffmann & Birnbrich, 2012; Kinyua, Gakure, Gekara & Orwa, 2015; Liu & Wu, 2007; Moorthy, 2003; Njenga & Osiemo, 2013) [36, 51, 65, 81]. Njenga and Osiemo (2013) [81] on their study on the effect of fraud risk management on organization performance: A case of deposit-taking microfinance institutions in Kenya and reported a statistically positive significant relationship between fraud risk management and performance of microfinance institutions in Kenya. Similarly, Hoffmann and Birnbrich (2012) [51] study the impact of fraud prevention on bank-customer relationships: An empirical investigation in retail banking the result in Germany revealed a positive relationship between fraud prevention measures and the quality of customer relationships. Also, Florence (2003) [33] study the Impact of audit control on liquidity and profitability in first generation banks in Nigeria found a significant positive relationship between preventive fraud risk management dimension and liquidity of banks.

Furthermore, While, Furlan, Vasilecas, and Bajec (2011) [36] carried their study on motor insurance fraud management system in the USA, the findings of their study reported a significant positive relationship between detective fraud risk management and profitability. Likewise, Kinyua, Gakure, Gekara, and Orwa (2015) [65] in their study on Quoted companies in the Nairobi Securities Exchange Kenya, reported a significant relationship between fraud risk management and financial performance of Nairobi security exchange. In addition, Liu and Wu (2007) in their study customer retention and cross-buying in the banking industry: An integration of service attributes, satisfaction, and trust in Taiwan, revealed that service attributes, such as fraud prevention, can positively affect relationship continuation and cross-buying.

However, Kiabel (2012) [64] revealed in a study of the financial performance of government-owned companies in Nigeria, found no association between internal auditing practices and financial performance although most internal audit professionals are on the view that an effective internal audit function correlates with improved financial performance. The weak association between internal auditing practices and financial performance was attributed to the enterprises' inadequacy and poor implementation of internal auditing practices. In addition, Getie Mihret, James, and Mula (2010) [40] reported that fraud risk management dimension effectiveness does not significantly influence financial performance of an enterprise. And Ejoh and Ejom (2014) [28] on the financial performance of tertiary institutions in Nigeria found that fraud risk management detection dimension has no significant effect on the financial performance of tertiary institutions. Furthermore, Bishop (2004) [13] in a study on preventing, deterring, and detecting fraud in ABC Corp in the USA emphasized that whilst detection is a crucial activity in an anti-fraud framework, excessive focus on detection can be unprofitable for organizations as much of lost funds do not end up being recovered.

The relationship between risk culture and performance has been established from previous literature. For instance, Kpodo and Agyekum (2015) [76] revealed that there is a positive correlation between risk culture and organizational performance in the banking industry. In addition, it was reported by Asree, Zain, and Razalli (2010) [9] that organizational culture has positive relationships with responsiveness. In addition, the paper reported that responsiveness has a positive relationship with hotel revenue. Furthermore, in another study conducted by Chalhoub (2009) [21] in Lebanon, a significant relationship between risk culture and performance was found. Additionally, Ahmed and Shafiq (2013) [4] stated that organizational culture dimensions influence organizational performance.

The above literature demonstrates the existence of a relationship between performance and risk culture. Couple with the inconsistency findings on the relationship between fraud risk management dimensions and firm performance, risk culture as a moderating variable is introduced. This is based on the assumption of introducing moderator given by (Baron & Kenny, 1986; Frazier, Tix, & Barron, 2004; Hair Jr, Hult, Ringle, & Sarstedt, 2014; Sarstedt, Ringle, & Hair, 2017) [11, 34, 44, 93]. The findings of this study will be an input to the management of the banking sector to strengthen their

risk culture and improve their fraud risk management, and for other stakeholders, it will help them uncover critical areas in fraud schemes that deserve immediate and prompt attention for improved performance.

Based on the literature discussed earlier, a conceptual framework is suggested as presented in figure 1 below that show the relationship between fraud risk management dimensions and bank performance, as well the moderating effect of risk culture, control variables of bank size, and bank performance.

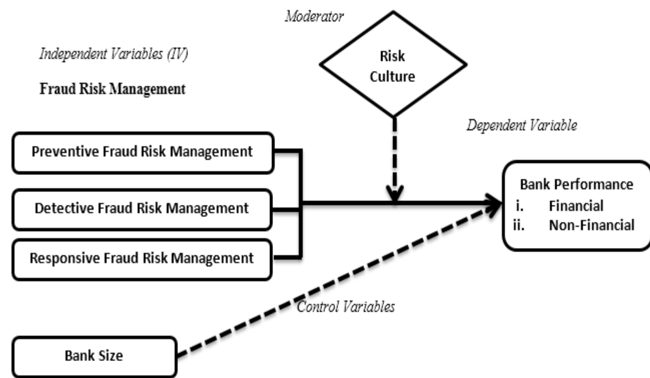

Fig 1: A proposed research framework

Conclusion

Corporate scandals and the fall of world-leading business organizations have triggered scholars and professionals to re-examine the link between risk management initiatives and the performance of business organizations. For business firms to remain competitive, they are expected to review regularly and develop new approaches that will improve their operational efficiencies (Spedding & Rose, 2008) [97].

This study review and theoretically examine the relationship between fraud risk management, risk culture, and bank performance. Based on the extant literature, fraud risk management has a positive relationship with bank performance. Moreover, the review has shown that risk culture has a positive relationship with bank performance. More so, intending scholars in this promising area of research can empirically provide evidence(s) on the established relationship between the variables selected in this study; can also add another additional performance variables (s) like economic value added, earnings management.

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