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# An Empirical Effect of Fraud Specific Problem Representation on Accountants' Skills and Fraud Risk Assessment

Oluwatoyin Muse Johnson Popoola\*, Ayoib Che Ahmad, Zaimah Abdullah,  
Kamil Md Idris, Fathiyyah Abu Bakar

*Tunku Puteri Intan Safinaz School of Accountancy, Universiti Utara Malaysia*

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## Abstract

This paper examines the impact of fraud specific problem representation (FSPR) on the relationship with Accountants' Skills Requirement (SR) and Fraud risk assessment (FRA) in the Nigerian public sector. The research methodology is quantitative with cross-sectional design and survey. The respondents are accountants (i.e. auditors and forensic accountants) in the public sector accounting and auditing institutions. The study addresses the gap in the literature by highlighting the significant influence of FSPR on SR and FRA regarding fraud detection, prevention and response. The findings from a second generation statistical analysis tool of the Partial Least Square-Structural Equation Modelling (PLS-SEM) confirm the direct relationship of accountants' skills on fraud risk assessment. Also, a direct relationship of accountants' skills on fraud specific problem representation, and fraud specific problem representation on fraud risk assessment and the indirect relationship of fraud specific problem representation on skills and fraud risk assessment. This study may help to enhance the regulatory, ethical, institutional and legal framework in Nigeria especially and the developing nations in general. Furthermore, it will accord support for the government transformation programme on efficient and effective public sector and capacity building of the workforce.

**Keywords:** Skills requirement, fraud specific problem representation, fraud risk assessment, task performance, forensic accounting, auditing, mediation analysis, developing countries

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## 1. INTRODUCTION

In the era of trade globalisation, acquisition of high-level information technology, new and complex legislation, the capability and competence requirements of the accountants, auditors, and forensic accountants become a serious dilemma (Popoola, 2014). Considering the revelations emanating from Enron, WorldCom, Cadbury, Tyco, Parmalat and Adelphia debacles on the inability of the auditor to prevent and detect fraud in the financial statement. This challenge is a critical issue amongst the standard setters, academia, and audit professionals. Nigeria, as one of the developing nations, is not an exception as several incidences of failures are reported due to perceived failure of the auditors to institute controls and design process and procedures aimed at preventing and detecting fraud within organisations.

Therefore, the responsibility of the auditor to detect significant fraud within organisations becomes an issue in the public domain. The current study recognises the establishment of the Public Company Accounting Oversight

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\*Corresponding author. Tel.: +6016 435 4874  
E-mail: [popoola@uum.edu.my](mailto:popoola@uum.edu.my)

Board (PCAOB, 2007), the passage of the Sarbanes-Oxley Act (2002), the American Institute of Certified Public Accountants Statement on Auditing Standards (SAS) No. 99, Consideration of fraud in a financial statement audit (AICPA, 2002), and the Institute of Chartered Accountants of Nigeria Standards on Auditing (NSA) No. 5, The Auditor's responsibility to consider fraud in an audit of financial statements (ICAN, 2005) on standards and guidelines meant to detect and prevent fraud. These frameworks are intended to address the challenges on internal controls for discovering and deterring fraud, to embolden financial statement auditors to be more vibrant and decisive in searching for fraud (Kranacher et al., 2008) and not on the capability and competence requirements relevant to prevent and detect fraud (Popoola, 2014). The gap arising from this challenge symbolizes the significance of the current study.

The objective of the study is to examine the impact of fraud specific problem representation (FSPR) on the relationship with accountants' skills requirement (SR) and fraud risk assessment (FRA) in the developing countries. Based on the problem statement, the study specific objectives are:

- a) To investigate accountants' skills requirement (as represented by deductive analysis, legal knowledge, written communication, oral communication, investigative flexibility, critical thinking, unstructured problem solving, analytical proficiency, and composure) and its relationship with fraud risk assessment.
- b) To examine accountants' skills requirement (as represented by deductive analysis, legal knowledge, written communication, oral communication, investigative flexibility, critical thinking, unstructured problem solving, analytical proficiency, and composure) that correlate with problem representation.
- c) To investigate the influence of fraud specific problem representation on the relationship between skills requirement (as represented by deductive analysis, legal knowledge, written communication, oral communication, investigative flexibility, critical thinking, unstructured problem solving, analytical proficiency, and composure) and fraud risk assessment.

The significance of the study is to emphasise the relevance of problem representation in enhancing possible explanations of discrepancies and consequently improving accountants' decision-making process in fraud prevention, detection and response especially in the developing nations' public sector.

## **2. LITERATURE REVIEW**

### **2.1 Skills Requirement**

Skills requirement refers to an attribute that relates to competence in the areas of knowledge and ability, and those that relates to performance in fraud prevention, detection and response (Popoola, 2014; IFAC-IES 3, 2005). According to the International Education Standard Board (IES), professional accountants must possess five skills, namely: intellectual skills, technical and functional skills, personal skills, interpersonal and communication skills and organisational and business management skills.

Gerson et al. (2006) in their study, illustrate the difference between fraud specialists and auditors' missions by likening the auditors to patrolmen and fraud specialists to detectives. Chui (2010, p.21) observes that:

“Similar to auditors, patrolmen circulate through their assigned districts with the objective of keeping peace in the community. While they would like to patrol continuously through every location, they understand it would be both times and cost excessive to do so. On the contrary, fraud specialists mission are to detect fraud regardless of materiality.”

### **2.2 Problem Representation**

Problem representation represents a mental representation of information towards understanding a problem and solving (interpreting) such a problem through a strategy based on existing or prior knowledge and skills (Popoola, 2014; Sutton, 2003; Bedard & Chi, 1993). Chui (2010) just states that individuals develop problem representation when faced with a decision-making judgement or task performance.

The current study implies that the acquisition of relevant skills only might not accomplish the envisaged task performance or decision-making judgement as accountants have difficulty (Bedard & Biggs, 1991) proposing possible explanations for discrepancies in analytical procedures problems. This indicates that accountants mental image of the problem does not contain the underlying cause of the differences. In essence, a shift to productive problem representation is critical in achieving effective decision processes and identifying the seeded error in analytical procedures task performance.

## 2.3 Fraud Risk Assessment (High and Low-Risk Conditions)

Fraud risk assessment is a vibrant and iterative step aimed at identifying and assessing risks to achieve organisational goals (COSO, 2013; 2011). Prior research highlights the importance of fraud risk assessment in the audit process as well as on its influence on the effectiveness of auditors' fraud detection in an audit engagement or investigation (Wuerges, 2011; Chui, 2010). Asare and Wright (2004) examine the influence of alternative risk assessment and programme developments on fraud planning efficiency such as quality of audit procedures and the tendency to consult forensic accountants. Their findings reflect on auditors who incorporated the use of standard risk checklists on task assignment achieved low-risk assessments than those without a checklist, predicated on inefficient fraud diagnosis. The findings clearly show that fraud risk assessment may not necessarily be related to the planning efficiency of fraud procedures but directly associated with the desire for consultation with forensic accountants.

## 2.4 Conceptual Framework of the Study

The conceptual framework of the study on the effect of fraud specific problem representation on accountants' skills and fraud risk assessment is illustrated in Figure 1.

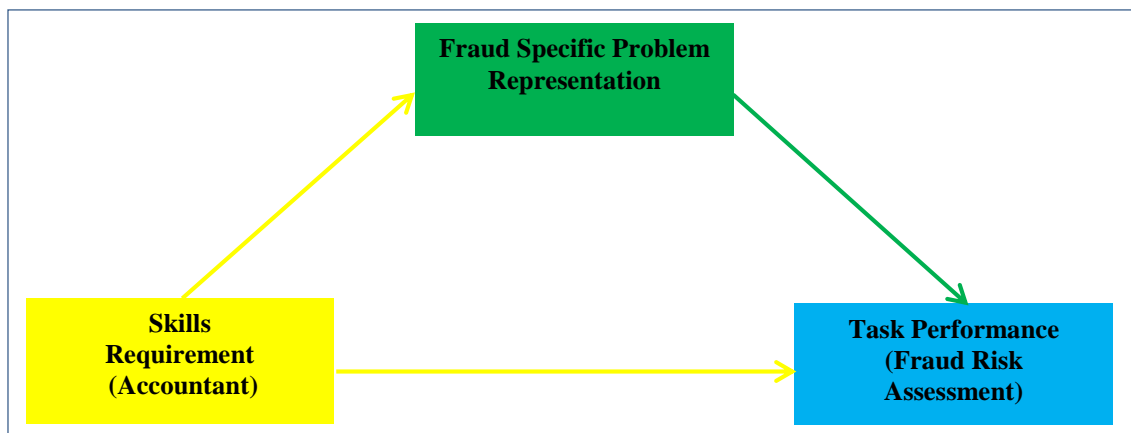


Figure 1. Conceptual framework: Effect of fraud specific problem representation on accountants' skills and fraud risk assessment  
Source: Adapted from Popoola, Che-Ahmad, Samsudin, and Rushami (2013)

## 2.5 Hypothesis Development of the Study

### 2.5.1 Hypothesis 1: SR has a significant positive relationship with FRA

The International Education Standard (IES) No. 3, Professional Skills identifies five relevant skills of professional accountants. These are intellectual skills, technical and functional skills, personal skills, interpersonal and communication skills, and organizational and business management skills (IFAC 2005). The IFAC (IES, No 3) standard is also supported and enhanced by DiGabriele (2008), Davis et al. (2010) and Ramaswamy (2007; 2005) on the skills requirement of accountants.

### 2.5.2 Hypothesis 2: SR has a significant positive relationship with FSPR

SR has indirect impacts on decision-making task performance through the development of the mental image of fraud specific problem representation (Kleinman & Palmon, 2007; Bierstaker, Bedard, & Biggs, 1999), especially in analytical procedures. Prior studies demonstrate available empirical evidence to argue the assertion that SR influences the development of individuals' FSPR, which in turn inspire their understanding and interpretation when faced with task problem (Popoola 2014; Chui 2010; Torelli and Kaikati 2009; Gerson et al. 2006). Therefore, this study asserts that SR has a direct relationship with FSPR.

### 2.5.3 Hypothesis 3: FSPR has a significant positive influence on FRA

Chui (2010), and Kadous and Sedor (2004) investigate the effect of problem representation in individuals' judgment. Specifically, there is a concurrence from Popoola (2015; 2014) of the significant effect of FSPR on FRA, especially on individual's task decision making. Therefore, FSPR contributes an important influence on accountants' fraud risk assessment task judgment whether at high-level or low-level risk conditions.

#### **2.5.4 Hypothesis 4: FSPR positively mediates the relationship between SR and FRA**

Based on the literature discussion in Hypothesis H1, H2, and H3, this study asserts that FSPR influences the relationship between SR and FRA.

### **3. RESEARCH METHODS**

#### **3.1 Respondents**

A total of 316 experienced accountants (i.e. auditors and forensic accountants) in the Office of Accountant General of and the Auditor General for the Federation participated in the survey. The responding accountants held position levels of forensic accountants (n = 150), and auditors (n = 166). The gender level of the male respondents (n = 214), and female respondents (n = 102). The responding academic qualifications levels of BSc/HND (n = 137), Postgraduate Diploma (n = 75), MSc/MBA (n = 64), and PhD (n = 40). Also, the responding accountants professional education levels of ACA (n = 104), FCA (n = 90), CNA (n = 75), FCNA (n = 19), and others (n = 28). Finally, the respondents role on fraud prevention, detection and response levels of forensic accountants (n = 169), and auditors (n = 147) while fraud investigation levels of positive participation (n = 305), and negative participation (n = 11).

#### **3.2 Cross-sectional Design**

A cross-sectional design is used in this study as data are collected at a single point in time. This type of research design is unique in having more successes than other designs towards achieving representativeness (De Vaus, 2011; Popoola, 2014). In making decisions as to the external validity of the study, representative samples are necessary because of the need to generalize from the results obtained in a sample of the wider population that the sample is meant to represent. The questionnaire undertaking is administered at the two offices of Accountant General of and Auditor General for the Federation of Nigeria that covers thirty-six States and Federal Capital Territory. The distribution is carried out simultaneously on 50:50 to the two offices while completed questionnaires are received within a period of three months (i.e. August to November).

#### **3.3 Constructs Operationalization: Dependent Variable, Independent Variable, and Mediating Variable**

Importantly, the list of the dependent variable, independent variable, and the mediating variable observable items was validated by 15 experienced firm professionals and renowned academicians (i.e. content validity). In addition, all the 29 indicators were adapted from prior studies (Popoola, Che-Ahmad, & Samsudin, 2015; Popoola, Che-Ahmad, & Samsudin, 2014; Chui, 2010). First, the independent variable (i.e. SR) is considered as a between-subject factor to be measured at two levels (forensic accountant and auditor) using a 5 point scale ranging from 1 (Strongly disagreed) to 5 (Strongly agreed) of 9 items (Popoola, 2014; Davies, Farrell & Ogilby, 2010; DiGabriele, 2008). Second, the dependent variable (i.e. FRA) is considered as a between-subject factor to be measured at two levels (high and low conditions) using a 5 point scale ranging from 1 (strongly disagreed) to 5 (strongly agreed) of 4 items (Popoola, 2015; Dzumira, 2014; Owens, 2012; ACFE, 2009). Final and third, the mediating variable (i.e. FSPR) as a between-subject factors to be measured at two levels: forensic accountant and auditor using a 5-point scale ranging from 1 (not at all) to 5 (very often) of 16 items (Basadur, Basadur, & Licina, 2013; Hester et al., 2012; Mumford, Medeiros, & Partlow, 2012; Basadur & Basadur, 2011).

### **4. RESULTS AND DISCUSSION**

#### **4.1 Descriptive Statistics**

The descriptive statistics of the SR, which revealed a mean (standard deviation) of 4.670 (0.413), is the highest of the three constructs' mean and standard deviation. Furthermore, FRA has the lowest mean (standard deviation) of 4.321 (0.655) in comparison with other construct variables. The FSPR generated a mean (standard deviation) of 4.552 (0.390) as against the FRA that produced a mean (standard deviation) of 4.321 (0.655). Overall, these findings suggested that forensic accountant and auditor who are the respondents in the current study had a significant level of fraud risk assessment, especially regarding skills requirement and fraud specific problem representation.

#### **4.2 Hypothesis Test**

The study Hypothesis 1 predicted that SR (forensic accountant and auditor) has a significant positive

relationship with FRA (i.e. high and low-risk conditions). The results from PLS-SEM Bootstrapping showed a significant positive relationship of SR on FRA (beta = 0.277; t = 3.460; p = 0.000). The findings revealed SR as a significant predictor of FRA, thus supporting the Hypothesis 1 of the study as well as validating prior studies (Popoola, 2014; Davis et al., 2010; DiGabrielle, 2008).

The study Hypothesis 2 predicted that SR (forensic accountant and auditor) has a significant positive relationship with FSPR. The results from PLS-SEM Bootstrapping indicated a positive significant relationship of SR on FSPR (beta = 0.855; t = 73.945; p = 0.000). The findings revealed SR as a significant predictor of PR. Therefore, Hypothesis 2 of the current study is supported and validated as reflected in Popoola (2014), and Popoola, Che-Ahmad, and Samsudin (2013).

The study Hypothesis 3 predicted FSPR maintains a significant positive relationship with FRA (i.e. all risk conditions). The results from the PLS-SEM Bootstrapping analysis presented a significant positive relationship of FSPR on FRA (i.e. beta = 0.589; t = 8.137; p = 0.000). The findings revealed FSPR as a significant predictor of FRA. Therefore, the current study Hypothesis 3 is supported and validated by prior studies (Popoola, 2015; Chui, 2010). Table 1 and Figure 2 illustrate more detailed information about the direct effect relationship of SR on FRA, SR on FSPR, and FSPR on FRA of the study.

Table 1. Direct effect relationship of SR on FRA, SR on FSPR, and FSPR on FRA of the study

Hypothesis No	Relationship	Path Coefficient	Standard Deviation	t-value	p-value	Decision
1	FSPR -> FRA	0.589	0.071	8.282	0.000	Supported
2	SR -> FRA	0.277	0.078	3.530	0.000	Supported
3	SR -> PR	0.855	0.012	71.793	0.000	Supported

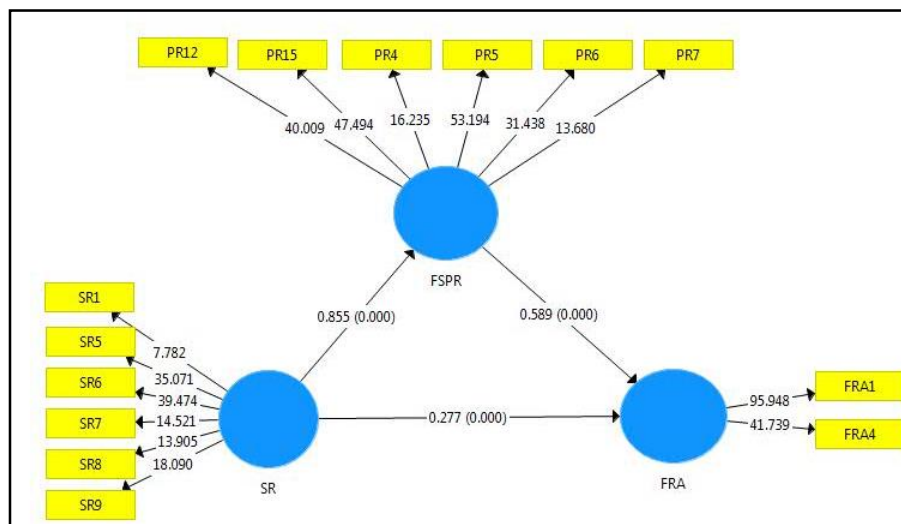


Figure 2. PLS-SEM Bootstrapping Direct effect of SR on FRA, SR on FSPR, and FSPR on FRA.

The study Hypothesis 4 predicted the influence of FSPR on SR and FRA (i.e. all risk conditions). The results from the PLS-SEM Bootstrapping analysis (Ringle, Wende, Becker, 2015) revealed a significant positive relationship of FRPR on FRA. The results confirmed an intervening role of FSPR on the relationship between SR and FRA (beta = 0.506, t = 8.096; p = 0.000). The current study Hypothesis 4 is supported and Table 2 demonstrated the indirect effect of FSPR on SR and FRA.

Table 2. Indirect effect of FSPR on the relationship between SR and FRA of the study

No.	Hypothesis	Path Coefficients									
		a		b		c		c'		p-value	Supported
		Path Coef	t-value	Path Coef	t-value	Path Coef	t-value	Path Coef	t-value		
4	SR --> FRPR-> TPFRA	0.855	3.449	0.589	72.492	0.277	8.084	0.506	8.096	0.000**	Yes

The analysis revealed SR contribution as the most significant predictor of FSPR and FRA of accountants (i.e. forensic accountant and auditor) in the Nigerian public sector. As a result, the direct hypotheses as well as indirect hypothesis are well supported and validated as depicted in Table 1 and Table 2 of this study.

## 5. CONCLUSION

This research has four main findings. First, the results provided evidence that validates the accountants' skills requirement on its relationship with fraud risk assessment. Second, the survey results indicated that fraud specific problem representation enhanced accountant's capability to assess fraud risk task performance. Third, respondents reaffirmed the significance of skills requirement on its correlation with fraud specific problem representation. Fourth, the results provided evidence of the significant influence of fraud specific problem representation on the relationship between skills requirement and fraud risk assessment. Overall, the current study highlighted the contribution of fraud specific problem representation as an enhancer to accountants regarding their ability to assess the possibility of fraud. The influence of FSPR is a significant element of the audit process that highlights where potential improvements are required (Hammersley et al., 2011; PCAOB, 2007). This paper served as the first to examine the impact of FSPR on SR and FRA in a developing country, Nigeria. Regarding contribution to the government and society, the study has the potentials to support the various reforms through process, policies, and legislation embarked upon by the government in fighting fraud and corruption, which are widespread in the Nigerian public sector and other developing nations.

This research is subject to some limitations as with any study. First, this research is about fraud and corrupt practices in a developing country, Nigeria with over 185 million people. Second, the examination of the mediating influence of fraud specific problem representation on skills and fraud risk assessment in the public sector could be measured as sensitive, and thus, raise the issue of such bias. Overall, a forensic accountant and the auditor might feel more comfortable to report their involvement in fraud investigation in the workplace, than to exhibit their lack of capability (i.e. skills) and competence (i.e. fraud risk assessment) requirements to detect, prevent and respond to fraud.

Therefore, future research is desired to examine holistically other capability requirements (as represented by mindset or attitude, knowledge, value, and ethics) of forensic accountants and auditors on fraud risk assessment in working environment so as to boost task performance.

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