

Attributes of Forensic Auditors and Detection of Occupational Fraud with the Moderating Role of Audit Committee

Amer Shakeel¹, Burhan Rasheed¹, Zohair Farooq Malik¹ and Syed Taha Fraz Haider¹

¹School of Commerce and Accountancy, University of Management and Technology, Lahore, Pakistan.

ARTICLE INFO	ABSTRACT
ARTICLE HISTORY Received: November 01, 2024 Accepted: January 13, 2025 Published: January 16, 2025	Frauds committed by the employees have become a threat to the sustainability of the organizations. This study aims to investigate the relationship between the attributes of forensic auditors, such as independence, IT skills, data analytics skills, professional skepticism, experience, and fraud detection. The data was collected through questionnaires from people working in organizations' accounting, finance, and audit functions. Researchers used the PLS-SEM technique to test the significance of the relationship between studied variables. The results of this study showed that independence, IT skills, data analytics skills, professional skepticism, and experience positively and significantly affect the detection of fraud. Results of moderation analysis showed that the audit committee moderates the effect of independence and experience on fraud detection but does not moderate the effect of IT skills, data analytics skills, and professional skepticism on fraud detection. This research is significant for organizations that are victims of employee fraud.
KEYWORDS <i>Forensic audit;</i> <i>Corporate governance;</i> <i>Occupational frauds;</i> <i>Professional skepticism;</i> <i>Fraud detection</i>	
Corresponding Authors: Burhan Rasheed (Email: burhan.rasheed@umt.edu.pk)	

INTRODUCTION

Fraud has become one of the major problems in organizations, and it harmfully affects their financial position and performance (Kalovya, 2023). There is a persistent increase in the incidences of fraud in organizations (Maulidi, 2023). Fraud not only affects the organization's financial performance, but it also damages its goodwill and sometimes leads to the failure and closure of businesses (Kagias et al., 2022). Organizations are investing in tools, techniques, and systems that can prevent and detect fraud committed by the employees of the organizations (Peiris & Aruppala, 2021; Maulidi & Ansell, 2021). Many factors contribute to the existence of fraud, like weak corporate governance, irregularities, weak internal control systems, greed, and lack of values (Chung et al., 2021; Al Natour et al., 2023). Occupational frauds (OF) are considered internal or employee fraud (Hermanson, 2021; ACFE, 2022; Kalovya, 2023). In this type of fraud, employees use their organizational positions to obtain personal benefits through illegitimate use of financial and other resources of the organizations (ACFE, 2022). Examples of occupational fraud (OF) include corruption, misstatement in financial statements, and misappropriation of assets by employees (ACFE, 2022).

Organizations of every size and type are adversely affected by the disease of occupational fraud (Kagias et al., 2022). According to the recent study by ACFE of 2,110 cases from 133 countries, the total loss due to OF was estimated as 3.6 billion USD, with the average loss per case was \$1,783,000, and out of total case losses, 21% were above \$1 million (ACFE, 2022). In another PricewaterhouseCoopers (PwC) survey, 46% of respondents globally considered economic crimes a serious threat to businesses and their processes (PWC, 2018). As per ACFE, companies lost 5% of their total revenue because of OF. In reality, the actual figure is bigger because many frauds remain undetected, and the true figure of the loss is beyond comprehension (ACFE, 2022). Frauds are common worldwide, as no organization or country claims to be free or immune from the frauds (Kalovya, 2023). They exist in every type of organization and cause a waste of financial and other resources. Frauds occur in every size of the organization; their level may vary from organization to organization (Kaur et al., 2023). They also affect the market reputes of the companies, which sometimes causes damage to the market value of the shares. OF also causes demoralization of good employees, disruption of the normal operating activities of the organizations, and sometimes adverse legal consequences (Lin et al., 2022). It is a challenge for organizations to save them from the harmful effects of the OF. Professionals and academicians are still working on the techniques that are helpful in preventing and detecting OF (Balfour et al., 2021; Soneji, 2022). Organizations use internal, external, and forensic audit techniques to detect these types of frauds. All these types of audits play a significant role in fraud detection (Peiris & Aruppala, 2021).

Forensic Audit

A forensic audit is a focused activity that aims to find frauds, errors, and irregularities in organizations (Adesina et al., 2020; Kaur et al., 2023). This function is performed by trained professionals with the required knowledge, skills and experience to perform such activities (Navarrete & Gallego, 2022). It is one of the effective tools to detect frauds committed by employees in organizations (Nandini & Ajay, 2021; Rifani & Hasan, 2022). Forensic audits enhance the performance of the corporate governance system, and a strong governance system is essential for controlling the occurrence of occupational fraud (Abdulrahman et al., 2020). Forensic auditors use different tools and techniques to detect fraud and ensure better risk management in organizations (Kaur et al., 2023). Forensic audit continuously verifies compliance with laws and regulations and save organizations from the adverse financial and legal consequences of non-compliance. Results of the forensic audit engagements are also used in legal proceedings and dispute settlements. Because of the rise in occupational fraud, organizations have adopted different tools to detect it, and forensic audits are one of them (Abdulrahman et al., 2020; Afriyie et al., 2023). Many organizations established forensic audit departments, and many other organizations hired forensic auditors to perform specific tasks (Bello et al., 2022). Researchers explained that forensic audit plays a significant role in detecting fraud (Dave & Patel, 2023). Forensic auditors identify red flags and opportunities to commit occupational fraud and design systems and controls to eliminate these opportunities (Gupta & Kumar, 2024). An effective forensic audit function with rich human resources can play an effective role in preventing and detecting fraud (Bello et al., 2022). Organizations can tackle the challenge of fraud and irregularities by establishing forensic audit functions. By making this function more focused, effective and result-oriented, organizations can handle the challenge of occupational fraud (Ramadhan, 2022; Afriyie et al., 2023).

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

There are many studies by different researchers on the effectiveness of the forensic audit in detecting fraud committed by employees.

Adesina et al. (2020) studied the effect of the forensic audit on the detection of fraud in the banks of Nigeria. They collected data through structured questionnaires and analyzed it using the ordinary least square method. As per the analysis findings, forensic audits play a significant role in fraud control. Navarrete & Gallego (2022) explored forensic accounting practices used to deter fraud in the companies' published financial statements. The study used a qualitative exploratory approach and conducted interviews with experts in the forensic field. As per the results of the study, forensic accounting contributes significantly to the prevention of fraud. Abdulrahman et al. (2020) determined the influence of forensic audit practices in detecting fraud in banking operations. Data were collected through questionnaires from the 200 employees working in UAE banks. Data were analyzed by using Smart-PLS. The findings of this research show the significant impact of forensic audits on fraud detection within the UAE banking industry. Capraş and Achim (2023) studied the role of forensic audit in fraud prevention and detection. The findings of the analysis show that the skills, attributes of forensic auditors and practices of forensic accounting are helpful in detecting and preventing fraud. Dilshad et al. (2020) studied the effect of forensic audits and whistleblowing on controlling fraud in Pakistan's public and private sector financial organizations. Data were collected through 230 questionnaires from the persons working in these organizations in Multan, Pakistan. They found forensic audits to be an effective tool for fraud control in organizations. Cortinah and Ruslim (2022) explored the effect of forensic auditors' skills, techniques, experience and technological readiness on fraud detection. Data were collected through 100 questionnaires from the auditors working in Indonesia. The results showed that the auditor's skills, techniques and experience positively and significantly affected fraud detection.

Some skills and attributes enhance the fraud detection ability of forensic auditors (Nandini & Ajay, 2021; Cortinah & Ruslim, 2022). In the current research, we analyzed the effect of these skills and attributes on the detection of occupational fraud and the audit committee's role as a moderator.

Forensic Auditors' Independence and Detection of Fraud

Independence is an attitude and state of mind in which a person is not influenced by others in performing his duties (Sulistiyanti & Yakub, 2020). An auditor should be independent in doing his responsibilities and expressing his opinions. If others pressure him, he may not be able to give his opinion freely. Only an independent forensic auditor can detect fraud in organizations because independence positively affects the auditor's ability to detect fraud (Sanjaya, 2022; Natalia et al., 2022). The board of directors is responsible for giving strong independence to the forensic auditors (Shofia, 2019). Forensic auditors should be answerable only to the top management regarding their performance, ensuring the forensic audit's independence (Nandini & Ajay, 2021).

H1: There is a positive relationship between forensic auditors' independence and fraud detection.

Forensic Auditors' IT Skills and Detection of Fraud

In today's IT environment, frauds have become more complex, making it difficult to detect them without strong IT skills. The fraudster might conceal fraud, which makes it extremely challenging to detect without sufficient digital

technology skills (Fadilah et al., 2019). These skills have become inevitable for the forensic auditors. The level of competence in IT skills affects the ability of forensic auditors to detect fraud (Afriyie et al., 2023). Every forensic auditor should learn and update these skills regularly to equip themselves with new advancement in these technologies and their application in business organizations (Adesina et al., 2020; Oladejo & Jack, 2020). They must better understand the ways and techniques fraudsters use to commit fraud in an IT-enabled environment (Alrawashdeh et al., 2021; Ofoje & Aggreh, 2023).

H2: *There is a positive relationship between forensic auditors' IT skills and fraud detection.*

Forensic Auditors' Data Analytics Skills and Detection of Fraud

Big Data analytics examines, transforms, and models big data sets to identify useful information and patterns, forward results, predict results, and support decision-making (Handoko et al., 2020; Handoko & Thomas, 2022). In data analytics, hidden patterns in the data are identified to answer the different questions and find suspicious transactions and events. This skill helps forensic auditors in performing their role of detecting fraud in organizations (Mittal et al., 2021). Big data analytics find anomalies and irregularities that indicate the existence of fraudulent activities (Handoko & Rosita, 2022). Using these skills, the forensic auditor can enhance their ability to detect organizational fraud (Handoko et al., 2020).

H3: *There is a positive relationship between forensic auditors' data analytics skills and fraud detection.*

Forensic Auditors' Professional Skepticism and Detection of Fraud

Professional skepticism is a mindset and approach to critically analyzing the evidence and information and being alert to the factors that can lead to fraud in organizations (Heliantono et al., 2020; La Ode et al., 2020). Maintaining professional skepticism during the job of forensic audit is necessary for achieving desired goals (Agustina et al., 2021). Previous researchers found a positive relationship between forensic auditors' professional skepticism and fraud detection (Surya et al., 2021).

H4: *There is a positive relationship between forensic auditors' professional skepticism and the detection of fraud.*

Forensic Auditors' Experience and Detection of Fraud

The experience of auditors, particularly in the relevant industry, always helps them in performing their roles (Wahidahwati & Asyik, 2022). An experienced auditor is more capable of tackling complex transactions and audit evidence. He also knows the relevant red flags of fraud exist in specific types of organizations (Ikbal et al., 2020). The more experienced auditor is more capable of detecting different types of fraud in the organizations because he is aware of the operations and ways in which fraud occurs.

H5: *There is a positive relationship between forensic auditors' experience and the detection of fraud.*

Audit Committee as Moderator

An audit committee (AC) is an important element of the corporate governance mechanism consisting of BOD members. Relevant laws, regulations, and best corporate practices prescribe terms of reference to the audit committee. They include oversight of the financial reporting process, internal and external audits, compliance with laws and regulations, and risk management processes. Moderation occurs when the relationship between two variables is moderated or affected by a third variable, referred to as a moderator (Igartua & Hayes, 2021). A moderator either strengthens or weakens the relationship between independent and dependent variables (Wahyudi et al., 2022). In some research on preventing and detecting fraud, the role of AC as a moderator was also investigated (Handayani & Waskito, 2021; Qintharah & Utami, 2022; Fouziah et al., 2022). In these studies, the researchers also investigated the role of AC as a moderator in the relationship between independent and dependent variables.

The hypotheses to investigate the role of AC as a moderator are as follows:

H6= *AC moderates the relationship between forensic auditors' independence and the detection of fraud.*

H7= *AC moderates the relationship between forensic auditors' IT skills and fraud detection.*

H8= *AC moderates the relationship between forensic auditors' data analytics skills and fraud detection.*

H9= *AC moderates the relationship between forensic auditors' professional skepticism and fraud detection.*

H10= *AC moderates the relationship between forensic auditors' experience and fraud detection.*

Conceptual Framework

Figure 1 shows the conceptual framework of this study. Here, fraud detection is the dependent variable, and attributes of forensic auditors are the independent variables, while the audit committee is used as a moderator.

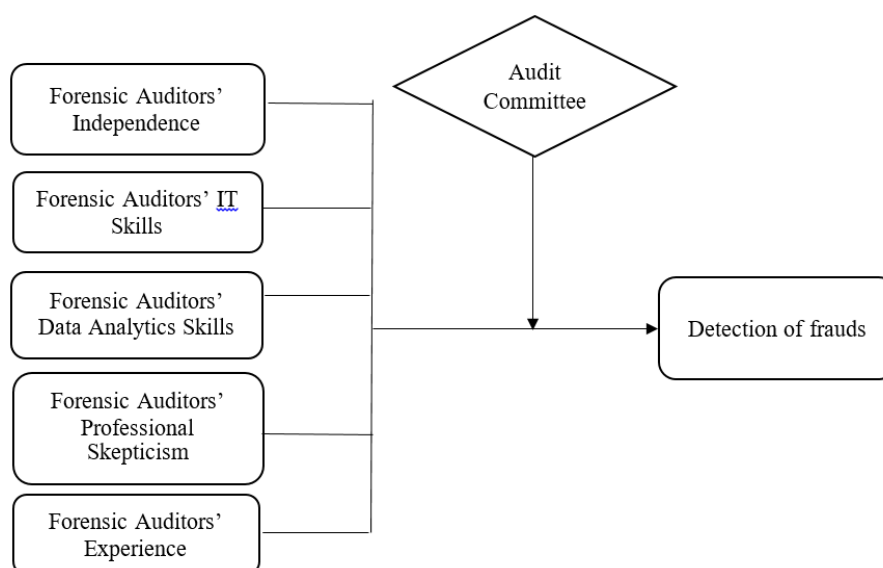


Figure 1: Conceptual Framework

RESEARCH METHODOLOGY

This study is used to explore the relationship between the attributes of forensic auditors and the detection of occupational fraud. Primary data were used to conduct this study. Data were collected through questionnaires, which were prepared on a five-point Likert scale. The questionnaire used in this study was adopted from the different relevant studies on detecting fraud and the role of CG attributes (Alzeban & Gwilliam, 2014; Drogalas et al., 2019).

The purposive sampling technique was used for the data collection in this study. The sample size of this study was 346 respondents. The overall target population of this research was those working in audit, accounts, and finance functions of the organizations. It was made sure that persons from all types of financial and non-financial firms like banks, insurance companies, sugar mills, textile mills, chemical sector, trading companies, automobiles, etc., are included in this process. A partial least square-structural equation modeling technique was used to analyze the data. Researchers used Smart-PLS software to analyze the data.

RESEARCH ANALYSIS AND DISCUSSION

The main purpose of this research is to investigate the relationship between attributes of forensic audit and detection of occupational fraud. This section explains the results of the data analysis obtained with the help of questionnaires.

Demographic Characteristics

The questionnaires were distributed to the audit, finance and accounting professionals. For this purpose, a total of 400 questionnaires were distributed to the respondents. A total of 346 questionnaires were collected and used in data analysis. Table 1 shows the detailed demographics of the person from whom data were collected.

Table 1: Demographics

N= 346	Frequency	Percentage
<i>Gender:</i>		
Male	270	78%
Female	76	22%
<i>Sector:</i>		
Financial	114	33%
Manufacturing	180	52%
Others	52	15%
<i>Field:</i>		
Accounting	197	57%
Audit	73	21%
Finance	76	22%
<i>Experience:</i>		
Less than 5 years	3	1%
5 -10	21	6%
11- 15	42	12%
16 - 20	135	39%
More than 20 years	145	42%

Reliability and Validity Testing

Reliability refers to the accuracy of a questionnaire (Hancock & Algozzine, 2017). The Cronbach's alpha reliability check was carried out to confirm the correctness of the survey tool (Cronbach, 1951).

Data validity means that the data collected should be exact and correct to conclude a particular sample (Rose & Sullivan, 1993). Composite reliability is defined as a measure of scale reliability that measures the internal consistency of items and the overall reliability of heterogeneous items but is similar to a measurement tool. The composite reliability (CR) value should be between 0.70 to 0.90 (Hair et al., 2019). The value of Cronbach's Alpha should be greater than 0.70. Cronbach alpha measures the internal consistency of all the scale items by testing how well each item is consistent with other items without being changed with time (Hair et al., 2019). Convergent validity means how much a test correlates with other tests when measuring the same construct (Mohajan, 2017). Convergent validity refers to the extent to which constructs are linked positively with the other measures of similar constructs (Hair et al., 2010). It can be measured by the average variance extracted (AVE) (Hair et al., 2010). AVE measures the convergent validity at each construct level; its minimum acceptable value is 0.50 or more, which means that each construct explains more than 50% of the variance of its indicators (Hair et al., 2019). Table 2 shows the results of the validity and reliability testing.

Table 2: Internal Consistency, Reliability and Convergent Validity

Variables	Factor Loading	Composite Reliability (CR)	Average Variance Extracted (AVE)	Cronbach's Alpha
<i>Detection of Occupational Frauds</i>		0.923	0.613	0.805
DOF1	0.778			
DOF2	0.743			
DOF3	0.803			
DOF4	0.796			
DOF5	0.758			
DOF6	0.791			
DOF7	0.819			
<i>Independence</i>		0.902	0.622	0.935
IND1	0.737			
IND2	0.797			
IND3	0.832			
IND4	0.751			
<i>IT skills</i>		0.936	0.589	0.848
ITS1	0.817			
ITS2	0.752			
ITS3	0.736			
ITS4	0.792			
<i>Data analytics skills</i>		0.974	0.607	0.983
DAS1	0.755			
DAS2	0.823			
DAS3	0.794			
DAS4	0.746			
DAS5	0.727			
<i>Professional skepticism</i>		0.941	0.646	0.901
PS1	0.796			
PS2	0.828			
PS3	0.801			
PS4	0.745			
<i>Experience</i>		0.939	0.577	0.858
EXP1	0.784			
EXP2	0.843			
EXP3	0.772			
EXP4	0.767			
EXP5	0.783			
<i>Audit committee</i>		0.917	0.563	0.845
AC1	0.761			
AC2	0.717			
AC3	0.709			
AC4	0.877			

The second test suggested for discriminant validity is the Fornell and Larcker criterion (1981). It is calculated by taking the square root of the AVE of each variable, and it should be higher than its correlation with other variables (Fornell & Larcker, 1981; Hair et al., 2010). In Table 3, the test results are given, and we can see that the square root of the AVE is higher than the correlation of a variable with other variables.

Data were analyzed using the PLS-SEM technique, and SmartPLS software was used for this purpose. As per the results, the R^2 for the main effect model without the interaction was 0.424, and when the interaction terms were added, the R^2 increased to 0.467, resulting in an R^2 change of 0.043.

Table 3: Descriptive statistics, correlation and Discriminant Validity (Fornell-Larcker Criterion)

Variables	Mean	Standard Dev.	DOF	IND	ITS	DAS	PS	EXP	AC
Detection of Occ. Frauds (DOF)	4.008	0.462	0.783						
Independence (IND)	4.132	0.487	0.413	0.789					
IT skills (ITS)	4.069	0.421	0.445	0.454	0.767				
Data analytics skills (DAS)	4.280	0.437	0.403	0.441	0.465	0.779			
Professional skepticism (PS)	4.163	0.401	0.512	0.503	0.479	0.457	0.804		
Experience (EXP)	4.029	0.398	0.479	0.471	0.455	0.461	0.495	0.760	
Audit committee (AC)	4.141	0.416	0.541	0.496	0.419	0.498	0.447	0.439	0.750

Values in italics are the square root of the AVE.

Table 4 shows the results of the direct relationship between independent and dependent variables. As per the results of the study, Independence ($\beta = 0.384, p < 0.05$), IT skills ($\beta = 0.197, p < 0.05$), data analytics skills ($\beta = 0.231, p < 0.05$), professional skepticism ($\beta = 0.145, p < 0.05$) and experience ($\beta = 0.178, p < 0.01$) of the forensic auditors have a positive and significant effect on the detection of the occupational frauds in the organizations. Therefore, H1 to H5 are accepted and supported by our study. These results show that independence, IT skills, data analytics skills, professional skepticism, and experience as forensic auditors play an effective and significant role in detecting occupational fraud in organizations.

Table 5 shows the results of the moderation effect of the audit committee on the relationship between independent and dependent variables. As per the moderation effect analysis, out of the five interaction terms, only two terms relevant to independence ($\beta = 0.052, p < 0.05$) and experience ($\beta = 0.179, p < 0.05$) were found significant, and interaction terms related to IT skills ($\beta = -0.004, p > 0.05$), data analytics skills ($\beta = 0.038, p > 0.05$), professional skepticism skills ($\beta = 0.047, p > 0.05$) were found insignificant. As per the results, H6 and H10 are accepted, but H7, H8 and H9 are rejected. This means that the audit committee moderates the relationship between independence and experience in detecting occupational fraud. Still, it does not moderate the relationship between IT skills, data analytics skills, and professional skepticism.

Table 4: Direct Effect of Variables

Hypothesis	Relationships	Beta	t-value	p-value	Decision
H1	IND→DOF	0.384	2.234	0.021	Supported
H2	ITS→DOF	0.197	2.041	0.032	Supported
H3	DA→DOF	0.231	1.998	0.047	Supported
H4	PS→DOF	0.145	2.019	0.029	Supported
H5	EXP→DOF	0.178	3.552	0.001	Supported

Table 5: Moderation of Audit Committee

Hypothesis	Relationships	Beta	t-value	p-value	Decision
H6	IND.AC→DOF	0.052	5.784	0.000	Supported
H7	ITS.AC→DOF	-0.004	0.176	0.178	Not Supported
H8	DAS.AC→DOF	0.038	0.271	0.132	Not Supported
H9	PS.AC→DOF	0.047	0.085	0.169	Not Supported
H10	EXP.AC→DOF	0.179	5.412	0.001	Supported

CONCLUSION AND RECOMMENDATIONS

Many research studies discuss the attributes of forensic auditors that contribute to detecting fraud. These researches describe mixed results regarding the significance of the role of these attributes. In this research, we investigated the significance of the relationship between these attributes and fraud detection in Pakistan's corporate sector. The analysis shows that all five independent variables (IND, ITS, DAS, PS, and EXP) positively and significantly affect fraud detection. The results of this research have theoretical as well as practical implications for both businesses and policymakers. If you look at the business perspective, this opens a new path for business owners and human resource managers, who must focus on their independence, experience, and other required skills when hiring forensic auditors.

During economic crises, companies pay more attention to preventing and detecting fraud. The people who commit fraud are mostly members of the administration or employees of that organization. In this way, the active role of forensic auditors is desired to prevent and detect fraud in organizations. To prevent such problems, organizations must take important steps, such as hiring experienced and trusted individuals and creating a positive environment for their work.

There is a lack of research that shows the relationship between forensic auditors and the detection of fraud in Pakistan. The current study is an effort to fill this research gap. The study has many recommendations, such as giving more independence to the forensic auditors, which is possible with senior management's support. By appointment of experienced and skillful personnel as forensic auditors, organizations can handle the challenge of occupational fraud. The audit committee should also play its moderator role more effectively for the better performance of the forensic auditors.

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