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# The Moderation Effect of Neuroticism on Knowledge and Fraud Risk Assessment Performance: A Conceptual Study

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## Abstract

The auditing and accounting profession recently faced many challenges following fraudulent practices among the Jordanian public sector. So, continuing such fraudulent activities in the public sector impedes national economic developments and growth. This study's main objective is to propose a conceptual framework for the practical and effective way of reducing fraud incidence in the Jordanian public sector. Specifically, this research introduced neuroticism on knowledge requirements as a moderating factor in the fraud risk assessment framework's performance in the Jordanian public sector. The conceptual framework will contribute to the existing literature on forensic accountants, auditors, knowledge capability requirements, and neuroticism as a personality factor and fraud risk assessment performance of regulators regarding the prevention and detection of fraud in the Jordanian public sector work environment.

**Keywords:** Fraud risk assessment, neuroticism, knowledge, forensic accounting, auditing, Jordanian public sector

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## 1 INTRODUCTION

In the last 25 years since the Enron crisis, fraud and corruption have remained a source of concern in many countries. Fraud has created high costs for many organisations (Bierstaker, Brody, & Pacini, 2006). It occurs almost in all organisations and expensively causes persistent and increasing businesses (Zahra, Korri, & Yu, 2005). Accordingly, It is pertinent for producing nations to improve auditors and prosecutors' expertise in fraud risk assessment.

Following "the Statement on Auditing Standard (SAS) No. 99, Consideration of Fraud in a Financial Statement Audit", it is mandatory for auditors in the US public companies to perform a fraud risk assessment as part of financial statements audit to detect material financial misstatements (Kassem & Higson, 2012; Victoravich, 2010). An organisation needs to develop an effective fraud prevention method and detection to minimize fraud (Bierstaker, Brody, and Pacini, 2006). These fraud prevention and detection procedures may include administrative communication concerning intolerance to fraudulent activities, the execution of transparent performance and remuneration schemes, pre-employment and ongoing screening, and, most significantly, promoting a culture of fraud awareness (PricewaterhouseCoopers, 2012). According to the survey conducted by the World Economic Forum's Global Competitiveness in 2014, fraud and corruption are considered as one of the obstacles to foreign investment attraction in Jordan. Frauds cases are prevalent in Jordan and create a severe economic crisis. For example, the embezzlement scandal of Petra Bank led to the loss of about JD200 million (USD670 million). This embezzlement scandal led to a decline in the country's financial strength, which resulted

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in the depreciation of the Jordanian Dinar from (1JD = USD 3.35 to USD 1.41) after the crisis. Further corporate collapses in the wake of this increased unemployment rate (Zureigat, 2015; Al-Awaqleh, 2008).

Fraud risk assessment (FRA) is one of the internal control components that assist auditors and forensic accountants in ascertaining organisations' conditions and the extent of the audit procedures necessary to respond to red flags of fraud (COSO, 2019). Consequently, FRA is directly linked to the auditors' capability to detect and prevent fraud (Popoola et al., 2015; Popoola, 2014; Chui, 2010).

Forensic accountants and auditors need to gain more specialised knowledge, improved abilities, and fraud-related mentality (Salleh et al., 2019; Howieson, 2018; Bhasin, 2015; DiGabriele, 2008). Improvement of the ability requirement is vital to significantly impact the changing perceptions and understanding of fraud schemes and the effects of fraud in the public-sector environment. However, the latest studies have shown that it is not straightforward for auditors to detect fraud. Companies sometimes take steps to mask fraud through deliberate means. (DeZoort & Harrison, 2018; Knapp & Knapp, 2001).

Ashton's (1999) study suggests that certain personality factors are individual predictive performances (i.e., fraud risk assessment) and various elements related to the essential aspects of the big-5 factors. The big-5 factors are "agreeableness, extraversion, conscientiousness, openness to experience, and neuroticism" (Goldberg, 1990). The current study assumes that highly neurotic forensic accountants and auditors would not perform well in their employment instead of low-neuroticism forensic accountants and auditors. The reason is that people with high-level neuroticism continue to display negative attitudes such as fear, depression, a lack of courage, and anxiety. When such attitudes are demonstrated, the current research assumes that forensic accountants and auditors might not be willing to prevent and detect fraud appropriately. The present study suggested that a forensic accountant or high-level auditor with neuroticism will decrease the interaction between the capability to assess fraud risk tasks and forensic accountants and auditors' knowledge requirement in any fraud circumstances because neurotic persons put themselves into conditions that encourage negative effects.

From the background to this research paper, it is evident that there are corrupt practices and fraud in the Jordanian public sector. The increase in fraud necessitates developing a conceptual framework that incorporates neuroticism as a moderating factor in forensic accountants and auditors' fraud risk assessment models in the Jordanian public sector.

This paper is organised as follow; Section 2 of this paper covers the literature review of fraud, internal control concept, the competency requirement (fraud risk assessment performance), capability requirement (knowledge), and neuroticism as a personality factor; Section 3 presents the conceptual and theoretical framework of this study; Section 4 shows the Hypothesis Development, and; Section 5 shows the conclusion of this study.

## **2 LITERATURE REVIEW**

### **2.1 Fraud Concept**

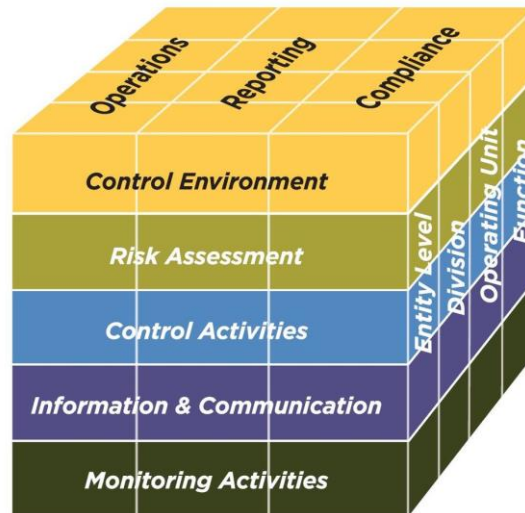
In 2009, The Chartered Institute of Management Accountants (CIMA) defined 'fraud' as "all activities such as fraud by robbery, fraud by conspiracy, money laundering, bribe, and properties obtaining." Hopwood, Leiner, and Young (2012) define 'fraud' as "the intention to cheat to get assets from the victims." While Singleton et al. (2006) stated that 'fraud' is the "behaviours of human beings in the way of cruel and defalcation, immorality, illegality, or have an intention to avoid the laws, including any actions against the positions, responsibilities, and other rights," and Klitgaard (1988) and Heywood (1997) identified that 'corruption' is "behaviour that deviates from regular responsibilities of the public services for private benefits by violating the rules and regulations with the abuse of power." In conclusion, fraud and corruption mean the swindle, deception, cheat, misappropriation, or intention to cause misunderstanding for seeking benefits both in terms of financial and nonfinancial to acquire the gains on position, power, money, property, or legal right toward oneself and companion from the organisation which that person works. This follows Maslow's theory of human needs (Need Theories) (1943). It depends on each individual's behaviours through five aspects as follows: "(1) physiological needs, (2) safety needs, (3) belongingness and love needs, (4) esteem needs, and (5) self-actualisation needs" This explains all human beings struggle and fight for their own goals.

### **2.2 Internal Control Concept**

Internal Control means the organisation's operating system is organised to reduce the potential risks from fraud. It might damage the properties of the organisation. Organising a sound internal control system is essential for enhancing the operation to achieve organisational conduction goals both in efficiency and effectiveness, including

constructing the reliability of the financial report. Furthermore, internal control includes the following laws and related rules and regulations to prevent fraud or resource misuse, reducing possible mistakes from all operation activities (Clinton, Pinello, and Skaife, 2014). It consists of five elements as follows: "(1) Control Environment (2) Risk Assessment (3) Control Activities (4) Information and Communication and (5) Monitoring," as shown in Figure 1. In 2013, the Committee of Sponsoring Organisations of the Treadway Commission (COSO) developed the guidelines of internal control and investigation by increasing the intensity of the analysis and risks from five factors previously to eight factors focusing on the behavioural analysis of the wrongdoer on fraud based on Fraud Triangle concept by Cressey. Cressey (1953, 1951) reveals that "the fraud behaviours are caused by three motivation, which includes incentive/pressure, opportunity, and attitudes/rationalisation. Singleton et al. (2006) said that if an organisation has a weakness in the internal control system, it will open up the opportunity for fraud.

**Figure 1.** The Five Elements based on the COSO Model



### 2.3 Fraud Risk Assessment Performance FRAP

According to COSO framework components and principles, their indicators are considered essential for risk assessment (COSO, 2019 p.6). The component and principles of risk assessment are: "1) specifies suitable objectives, 2) Identifies and analyses risk, 3) Assesses fraud risk, and 4) Identifies and analyses significant change". FRAP is a complex process carried out by auditors that require advanced cognitive knowledge and skills (Desai & Gupta, 2016). Fraud risk assessment (FRA) helps an auditor understand the complexity of the audit processes needed to increase the likelihood of detecting fraud (Wuerges, 2011; Bloomfield, 1997). Regrettably, prior studies have presented that auditors are typically not adequately capable of assessing fraud risk and, therefore, cannot detect fraud in a financial statement audit (Asare et al., 2015; Wuerges, 2011; Allen et al., 2006). Following "the Statement on Auditing Standard (SAS) No. 99, Consideration of Fraud in a Financial Statement Audit", auditors of US Government companies are required to conduct a risk assessment of fraud as part of audits of the financial statements to avoid material financial errors (Kassem & Higson, 2012; Victoravich, 2010).

According to the American Institute of Certified Public Accountants (AICPA) in "Managing the Business Risk of Fraud: A Practical Guide" (2009), "An efficient FRA ought to determine where fraud might happen and who the perpetrators might be. Therefore, control activities should always consider both the fraud scheme and the individuals within and outside the organisation who could be the perpetrators of each scheme. If the scheme is collusive, preventive controls should be augmented by detective controls, as collusion negates the control effectiveness of segregation of duties".

Furthermore, FRA is perceived as a valuable tool for preventing fraud and thus was endorsed to enhance auditor's competence in the quest for fraud prevention and detection (Baz et al., 2016; Payments, 2015; Subramanian, 2014; Knapp & Knapp, 2001). For this study, FRA performance is defined as the forensic accountant and auditor's ability to access fraud risk to prevent and detect fraud within the public sector's working environments.

## **2.4 Knowledge Requirement**

Knowledge of forensic accounting includes "professional responsibilities and practice management, laws, courts, and dispute resolution, planning and preparation, information gathering and preservation (documents, interviews or interrogations, electronic data), finding, reporting, experts and testimony" (Lessambo, 2018; Popoola, Che-Ahmad & Samsudin, 2015; Popoola, Che-Ahmad & Samsudin, 2014; Davis et al., 2010; Durkin & Ueltzen, 2009). Seven fields are defined as a component of specialised knowledge in forensic accounting, according to "the American Institute of Certified Public Accountants" (Davis et al., 2010). These areas comprise "fraud prevention, detection and response, computer forensic analysis, family law, valuation, financial statement misrepresentation, economic damages calculations, and bankruptcy, and insolvency and reorganisation" (AICPA, 2011; Durkin and Ueltzen, 2009). This research paper embraces fraud detection, prevention, and response to highlight the potential failure to manage Jordan's accounting and auditing systems. A forensic accountant has the necessary resources to detect fraud based on his education and training in communications, legal and criminology, information technology, and investigation (Popoola, Che-Ahmad & Samsudin, 2015; Davis et al., 2010).

Recent studies show that individuals with specialist knowledge in the use of information technology, legal investigative criminology, and accounting would be more useful at documenting and processing reports, reviewing financial statements, questioning and acting as professional witnesses than individuals in auditing (Hopwood et al., 2012; Singleton et al., 2006). The International Education Standard No 8, Competence Requirements for Professional Accountants, identifies the auditors' knowledge capability to include "historical financial information audit at a higher level, financial accounting and reporting at a higher standard, and information technology" (IFAC, 2019).

This research agrees with the Association of Certified Fraud Examiners (ACFE) that standard-setter statements are inappropriate for identifying fraud (ACFE, 2018). Popoola (2014) notes that the identification and reaction of fraud prevention is not just a child's play and requires much more than the explanations in IES No. 8, Audit Professional Competence Requirements (IFAC, 2019).

## **2.5 Neuroticism as a Personality Factor**

The effect of personality as a dominant influence on task performance has been dealt with through the present century in numerous studies and meta-analyses across many nations and cultures to comprehend how personality factors can affect task performance. Over the years, researchers have identified many personality traits that may represent individual characteristics (McCrae & Terracciano, 2005; McCrae & Costa, 1997). For example, the Big-5 Model ("extraversion, neuroticism, conscientiousness, agreeableness and openness to experience") reflects human behaviour and reaction in a different context, such as Job performance (Trouba, 2009; Vakola et al., 2004). After reviewing the literature, several studies recognised the impact between personality factors and auditor's behaviour (Asni et al., 2018; Asmara, 2016; Donnelly et al., 2003; Dole & Schroeder, 2001; Tsui & Gul, 1996), a judgment made by auditors' (Tsunogaya et al., 2017; Lehmann, 2001), workload and job exhaustion (Law, 2003) and managers' opinion (Hartmann, 2005). However, these studies found diverse findings regarding the impact of the personality factors on the dependent variables.

As per McCrea and John (1992), Neuroticism signifies individual differences in the inclination to experience distress and the cognitive and behavioural styles that follow this tendency. They state that neuroticism highlights anxious, self-pitying, tense, sensitive, unbalanced, and worrying behaviours. Goldberg (1993) posits that neuroticism comprises individual characteristics such as anxiety, emotional instability, and tempera.

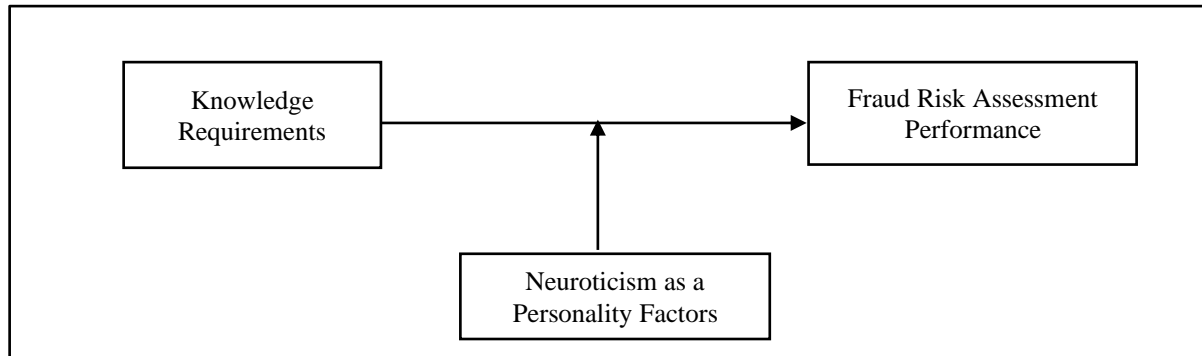
The Big-5 factors have been investigated in many studies, including vigilance performance and workload. In particular, Rose et al. (2002) find that neuroticism was linked to perceived frustration in terms of perceived workload.

Previous studies offered diverse findings regarding the influence of neuroticism on task performance (e.g., Gullkvist & Jokipii, 2015; Jaffar et al., 2008; Zimbelman & Waller, 1999; Bernardi, 1994; Pincus, 1984). The current research assumes that forensic accountants and auditors with high neuroticism will not perform efficiently and effectively in their work matched to those with low neuroticism, as those with high-level neuroticism appear to have negative attitudes. This research assumes that the auditors might not effectively detect the risk of fraud if such attitudes are demonstrated.

### 3. CONCEPTUAL FRAMEWORK OF THE STUDY

A conceptual framework relates to rules, assertions, and principles that incorporate ideas about a particular concept (Mugenda & Mugenda, 2003). The conceptual framework is intended to explore the moderating effect of neuroticism, forensic accountants, and auditor's knowledge capability on FRAP in the Jordanian public sector. Figure 2 presents the proposed research framework of this paper.

Figure 2. Conceptual Framework of the Study



### 3 HYPOTHESIS DEVELOPMENT

#### 3.1 Knowledge Requirement and Fraud Risk Assessment Performance

The first conceptual connection in this study is the knowledge requirement influence on the FRAP. As stated by International Education Standard No. 8, competency requirements for audit professionals, auditor's knowledge is divided into three: (1) higher-level of historical financial information analysis, (2) higher-level financial accounting and monitoring, and (3) IT. (IFAC-IES, 2019). This research paper agrees with Daniel and Lee (2006) that other accountants may look at the charts. However, forensic accountants look deep into the body. Previous literature suggests that a modest change in knowledge capability produces considerable changes in performance and an imposing impact on a person's resolve; assertiveness; and commitment to achieve set objectives (Popoola et al., 2015; Hopwood, Leiner, and Young, 2012; Davis, Farrell & Ogilby, 2010; Di-Gabriele, 2008; Messmer, 2004; Haris & Brown, 2000). This research, therefore, postulates so:

*Hypothesis 1: There is a relationship between knowledge requirement and fraud risk assessment performance in the Jordanian public sector.*

#### 3.2 Neuroticism as a Personality Factors and Fraud Risk Assessment Performance

The second conceptual relation in this study is the influence of neuroticism as a personality factor on FRAP. Neuroticism is a dimension of big-five factors that experience adverse impacts like fear, sorrow, confusion, irritation, fault, and loathing. Some kinds of psychiatric problems may be at risk for a high level. A high neuroticism level indicates that individuals are vulnerable to illogical beliefs, are less capable of controlling urges, and poorly deal with stress. A low level of neuroticism shows emotional stability. Usually, such people are generally calm, quiet, confident, and capable of handling stressful situations without getting upset (Warrington, 2017; Rothmann & Coetzer, 2003; Hough et al., 1990). The previous study found neuroticism as a forecaster of performance in different professions (Tuteja & Sharma, 2016; Hörmann & Maschke, 1996). Dunn, Mount, Barrick, and Ones (1995) indicated that the second most important feature affecting candidates' employability is emotional stability (the opposite of neuroticism). A recent study stated that neuroticism is backwards linked to task performance (Terrier, Kim, and Fernandez, 2016; Judge Higgins, Thoresen, and Barrick, 1999). However, Salgado (1997) argued that neuroticism predicts job performance in certain circumstances. This study predicts that forensic accountants and auditors' high neuroticism would not perform effectively in their work matched to those with lower neuroticism as those with a high level of neuroticism tend to have negative attitudes. This research, therefore, postulates so:

*Hypothesis 2: There is a relationship between neuroticism and fraud risk assessment performance in the Jordanian public sector.*

### 3.3 The Moderating Effect of Neuroticism on Knowledge Requirements and Fraud Risk Assessment Performance

The third conceptual link in this research is the interaction effect of neuroticism on knowledge (forensic accountants and auditors) and FRAP. The impact of neuroticism on performance is found to have mixed results (e.g., Gullkvist & Jokipii, 2015; Jaffar et al., 2008; Zimbelman & Waller, 1999; Bernardi, 1994; Pincus, 1984). The current study posits that forensic accountants and auditors with high neuroticism would not perform more effectively in their work than those with a lower level of neuroticism as those with high neuroticism appear to have negative attitudes. Thus, the current research suggests that highly neuroticism would reduce the relationship between knowledge (capability requirements) and fraud risk assessment in any fraud situation. This research, therefore, postulates thus:

*Hypothesis 3: Neuroticism positively moderates the relationship between knowledge requirement and fraud risk assessment performance in the Jordanian public sector.*

## 4 CONCLUSION

This research investigated the moderating influence of neuroticism as a personality factor on the association among knowledge of (forensic accountants and auditors) FRAP in the public sector in Jordan, having expanded on the issue statement and research objectives. The research helps to understand forensic accounting processes of fraud detection, improved fraud mediation, and reactions to the public sector's environment. The relevant literature on the capability requirements of forensic accountants and auditors and the moderating influence of neuroticism as a personality factor in the Jordanian public sector's FRA and capability requirements are reviewed. This research paper offers a conceptual framework that could be used to deter and detect fraud by forensic accountants and public sector auditors. The current research is theoretical. Thus, future empirical research will be undertaken to determine the importance of the proposed framework in fraud risk assessment performance.

## REFERENCES

- ACFE. (2018). Report to the Nation: Global study on occupational fraud and abuse, TX: Association of Certified Fraud Examiners.
- Al-Awaqleh, Q. A. Q. (2008). Going-concern evaluation in Jordan. (Doctoral Dissertation) Universiti Utara Malaysia.
- Allen, R. D., Hermanson, D. R., Kozloski, T. M., & Ramsay, R. J. (2006). Auditor risk assessment: insights from the Academic Literature. *Accounting Horizons*, 20(2), 157–177. <https://doi.org/10.2308/acch.2006.20.2.157>
- Amiri, A. Y. (2018). An investigation of the effects of litigation and interrogation skills of forensic accounting on fraud risk valuations : an empirical study of government auditors in Dubai, United Arab Emirates. (Doctoral Dissertation) The University Of Wollongong in Dubai.
- Asare, S. K., Wright, A., & Zimbelman, M. F. (2015). Local buckling capacity of steel I-section beams subjected to uniform or linear temperature gradient. *Journal of Forensic & Investigative Accounting*, 7(2), 63–112. <https://doi.org/10.1016/j.tws.2017.06.017>
- Asmara, R. Y. (2016). Effect of competence and motivation of auditors on audit quality: Survey on the external auditor registered public accounting firm in Jakarta in Indonesia. *European Journal of Accounting, Auditing and Finance Research*, 4(1), 43–76.
- Asni, N., Dali, N., Tuti, D., & Syafitri, A. A. (2018). The influence of locus of control and professional commitment toward auditor's behaviour in a conflict situation. *IOSR Journal of Economics and Finance (IOSR-JEF)*, 9(4), 75–83. <https://doi.org/10.9790/5933-0904037583>
- Baz, R., Samsudin, R. S., Che-Ahmad, A. B., & Popoola, O. M. J. (2016). Capability component of fraud and fraud prevention in the Saudi Arabian banking sector. *International Journal of Economics and Financial Issues*, 6(4), 68–71.
- Bernardi, R. A. (1994). Fraud detection: The effect of client integrity, competence, and auditor cognitive style. *Auditing*, 13, 68.
- Bhasin, M. (2015). Survey of skills required by the forensic accountants: Evidence from a developing country. *International Journal of Contemporary Business Studies*, 4(2), 54–86.
- Bierstaker, J. L., Brody, R. G., & Pacini, C. (2006). Accountants' perceptions regarding fraud detection and prevention methods. *Managerial Auditing Journal*, 21(5), 520–535. <https://doi.org/10.1108/02686900610667283>
- Bloomfield, R. J. (1997). Strategic dependence and the assessment of fraud risk: A laboratory study. *Accounting Review*, 72(4), 517–538.
- COSO. (2019). Internal Control-Integrated Framework. Committee of Sponsoring Organisations of the Tredway Commission. New York, NY.
- COSO. (2016). Fraud Risk Management Guide. Committee of Sponsoring Organisations of the Tredway Commission. New York, NY.
- COSO. (2013). Internal Control Framework Committee of Sponsoring Organisations of the Tredway Commission. Committee of Sponsoring Organisations of the Tredway Commission. New York, NY.
- Chui, L. (2010). An experimental examination of the effects of fraud specialists and audit mindsets on fraud risk assessments and the development of fraud-related problem representations. (Doctoral Dissertation) The University of North Texas.
- Clinton, S. B., Pinello, A. S., & Skaife, H. A. (2014). The implications of ineffective internal control and SOX 404 reporting for financial analysts. *Journal of Accounting and Public Policy*, 33(4), 303–327. <https://doi.org/10.1016/j.jaccpubpol.2014.04.005>
- Cressey, D. R. (1953). Other people's money; a study of the social psychology of embezzlement.
- Davis, C., Farrell, N., & Ogilby, S. (2010). Characteristics and skills of the forensic accountant. AICPA FVS Section. American Institute of Certified Public Accountants, 11–23.
- DeZoort, F. T., & Harrison, P. D. (2018). Understanding auditors' sense of responsibility for detecting fraud within organisations. *Journal of Business Ethics*, 149(4), 857–874. <https://doi.org/10.1007/s10551-016-3064-3>
- DiGabriele, J. A. (2008). An empirical investigation of the relevant skills of forensic accountants. *Journal of Education for Business*, 331–338.
- Dole, C., & Schroeder, R. G. (2001). The impact of various factors on professional accountants' personality, job satisfaction, and turnover intentions. *Managerial Auditing Journal*, 16(4), 234–245. <https://doi.org/10.1108/02686900110389188>

- Dunn, W. S., Mount, M. K., Barrick, M. R., & Ones, D. S. (1995). The relative importance of personality and general mental ability in managers' judgments of applicant qualifications. *Journal of Applied Psychology*, 80(4), 500–509. <https://doi.org/10.1037/0021-9010.80.4.500>
- Durkin, R., & Ueltzen, M. (2009). The evolution of the CFF credential. *The Practicing CPA*, 33(6).
- Goldberg, L. R. (1990). An alternative "description of personality": The Big-Five factor structure. *Journal of Personality and Social Psychology*, 59(6), 1216–1229. <https://doi.org/10.1037/0022-3514.59.6.1216>
- Gullkvist, B., & Jokipii, A. (2015). Factors influencing auditors' self-perceived ability to assess fraud risk. *NJB*, 64(1), 40–63.
- Harris, C. K., & Brown, A. M. (2000). The qualities of a forensic accountant. *Pennsylvania CPA Journal*, 71(1), 6.
- Heywood, P. (1997). Political corruption: Problems and perspectives. *Political Studies*, 45(3), 417–434. <https://doi.org/10.1111/1467-9248.00089>
- Hopwood, W. S., Leiner, J. J., & Young, G. R. (2012). *Forensic accounting and fraud examination*. McGraw-Hill New York, NY.
- Hormann, H.-J., & Maschke, P. (1996). On the relation between personality and job performance of airline pilots. *International Journal of Aviation Psychology*, 6(2), 171–178.
- Hough, L. M., Eaton, N. K., Dunnette, M. D., Kamp, J. D., & McCloy, R. A. (1990). Criterion-related validities of personality constructs and the effect of response distortion on those validities. *Journal of Applied Psychology*, 75(5), 581–595. <https://doi.org/10.1037/0021-9010.75.5.581>
- Howieson, B. (2018). What is a 'good' forensic accountant? A virtue ethics perspective. *Pacific Accounting Review*, 30(2), 155–167. <https://doi.org/10.1108/PAR-01-2017-0005>
- IFAC. (2019). *International Education Standard No. 8, Competence Requirements for Audit professionals*. New York: International Federation of Accountants.
- IFAC. (2006). *International Education Standard No. 8, Competence Requirements for Audit professionals*. New York: International Federation of Accountants.
- Jaffar, N., Salleh, A., Iskandar, T. M., & Haron, H. (2008). The effect of the external auditors' ability to assess fraud risk on their ability to detect the likelihood of fraud. *International Journal of Management Perspectives*, 1(1), 49–70.
- Judge, T. A., Higgins, C. A., Thoresen, C. J., & Barrick, M. R. (1999). The big five personality traits, general mental ability, and career success across the life span. *Personnel Psychology*, 52(3), 621–652. <https://doi.org/10.1111/j.1744-6570.1999.tb00174.x>
- Kassem, R., & Higson, A. (2012). Financial reporting fraud: Are standards' setters and external auditors doing enough? *International Journal of Business and Social Science*, 3(19), 283–290.
- Kassem, R., & Higson, A. (2012). The new fraud triangle model. *Journal of Emerging Trends in Economics and Management Sciences (JETEMS)*, 3(3), 191–195.
- Klitgaard, R. (1988). *Controlling corruption*. University of California Press.
- Knapp, C. A., & Knapp, M. C. (2001). The effects of experience and explicit fraud risk assessment in detecting fraud with analytical procedures. *Accounting, Organisations and Society*, 26(1), 25–37. [https://doi.org/10.1016/S0361-3682\(00\)00005-2](https://doi.org/10.1016/S0361-3682(00)00005-2)
- Law, D. W. (2003). *An examination of personality traits as moderating factors of exhaustion in public accounting*. (Doctoral Dissertation) Washington State University.
- Lehmann, C. M. (2002). *The effects of experience, instruction and personality factors on complex problem representation and performance in auditing: An experimental investigation*. (Doctoral Dissertation) Texas A&M University, USA.
- Lessambo, F. I. (2018). *Auditing, assurance services, and forensics*. in auditing, assurance services, and forensics. <https://doi.org/10.1007/978-3-319-90521-1>
- Maslow, A. H. (1943). A theory of human motivation. In *Psychological Review* (Vol. 50).
- Messmer, M. (2004). Exploring options in forensic accounting. *National Public Accountant*, 5(3), 19–20.
- Mugenda, O., & Mugenda, A. (2003). *Research methods: quantitative and qualitative methods*. Revised in Nairobi.
- Pincus, V. K. (1984). *Fraud detection ability: Individual differences and their relationship to cognitive style difference*. Unpublished Doctoral Dissertation. The University of Maryland, USA.
- Popoola, O. M. J., Che Ahmad, A. B., & Samsudin, R. S. (2015). An empirical investigation of fraud risk assessment and knowledge requirement on fraud related problem representation in Nigeria. *Accounting Research Journal*, 28(1), 78–97.
- Popoola, O. M. J. (2014). *Forensic accountants, auditors and fraud: capability and competence requirements in the Nigerian public sector*. Doctoral Dissertation. Universiti Utara Malaysia.
- PWC. (2012). *Fighting fraud in the public sector*. Retrieved from [https://www.pwc.com/gx/en/psrc/pdf/fighting\\_fraud\\_in\\_the\\_public\\_sector\\_june2011.pdf](https://www.pwc.com/gx/en/psrc/pdf/fighting_fraud_in_the_public_sector_june2011.pdf)
- Rose, C. L., Murphy, L. B., Byard, L., & Nikzad, K. (2002). The Role of the Big Five Personality Factors in Vigilance Performance and Workload. *European Journal of Personality*, 16(3), 185–200. <https://doi.org/10.1002/per.451>
- Salgado, J. F. (1997). The five-factor model of personality and job performance in the European Community. *Journal of Applied Psychology*, 82(1), 30–43. <https://doi.org/10.1037/0021-9010.82.1.30>
- Salleh, K., & Aziz, R. A. (2014). Traits, skills and ethical values of public sector forensic accountants: an empirical investigation. *Procedia - Social and Behavioural Sciences*, 145, 361–370. <https://doi.org/10.1016/j.sbspro.2014.06.045>
- Shbeilat, M. K. (2013). *The Jordanian corporate governance code: A study of institutional investor's perception of the reliability of the audit report and the audit expectation gap* (Austrian Catholic University Research). <https://doi.org/10.4226/66/5a96308fc68a1>
- Singleton, T. W., Singleton, A. J., Bologna, G. J., & Lindquist, R. J. (2007). *Fraud auditing and forensic accounting*. Hoboken, New Jersey: John Wiley & Sons, Inc.
- Terrier, L., Kim, S., & Fernandez, S. (2016). Who are the good organisational citizens for the environment? An examination of the predictive validity of personality traits. *Journal of Environmental Psychology*, 48, 185–190. <https://doi.org/10.1016/j.jenvp.2016.10.005>
- The Chartered Institute of Management Accountants (CIMA). (2008). *Fraud risk management: A guide to good practice*. In *Chartered Institute of Management Accountants*. Retrieved from [https://www.cimaglobal.com/Documents/ImportedDocuments/cid\\_techguide\\_fraud\\_risk\\_management\\_feb09.pdf](https://www.cimaglobal.com/Documents/ImportedDocuments/cid_techguide_fraud_risk_management_feb09.pdf)
- Trouba, E. J. (2009). A person-organisation fit study of the big five personality model and attraction to organisations with varying compensation system characteristics. *ProQuest Information & Learning*.
- Tsunogaya, N., Sugahara, S., & Chand, P. (2017). The impact of social influence pressures, commitment, and personality on judgments by auditors: Evidence from Japan. *Journal of International Accounting Research*, 16(3), 17–34.
- Vakola, M., Tsaousis, I., & Nikolaou, I. (2004). The role of emotional intelligence and personality variables on attitudes toward organisational change. *Journal of Managerial Psychology*, 19(2), 88–110. <https://doi.org/10.1108/02683940410526082>
- Victoravich, L. M. (2010). The mediated effect of SAS No. 99 and Sarbanes-Oxley officer certification on jurors' evaluation of auditor liability. *Journal of Accounting and Public Policy*, 29(6), 559–577. <https://doi.org/10.1016/j.jaccpubpol.2010.09.006>
- Warrington, C. (2017). *A study of personality traits to explain employees' information security behaviour among generational cohorts*. Capella University.

- Wuerges, A. (2011). Auditors' responsibility for fraud detection: New wine in old bottles. Retrieved on November 3, 2012.
- Zahra, S. A., Korri, J. S., & Yu, J. F. (2005). Cognition and international entrepreneurship: Implications for research on international opportunity recognition and exploitation. *International Business Review*, 14(2), 129–146. <https://doi.org/10.1016/j.ibusrev.2004.04.005>
- Zimbelman, M. F., & Waller, W. S. (1999). An experimental investigation of auditor-auditee interaction under ambiguity. *Journal of Accounting Research*, 37(1999), 135. <https://doi.org/10.2307/2491349>
- Zureigat, B. N. (2015). Corporate governance and the going concern evaluation of Jordanian listed companies at Amman Stock Exchange. Universiti Utara Malaysia.