

Defining Auditor Expertise in Fraud Detection

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Introduction

Auditors are not expected to be forensic specialists (The Institute of Internal Auditors, 2017a: Standard 1210.A2; International Auditing and Assurance Standards Board, 2009a: ISA 240, The auditor's responsibilities relating to fraud in an audit of financial statements, paragraph 6). However, mandatory auditing standards require the internal auditor to "have sufficient knowledge to evaluate the risk of fraud" (Standard 1210.A2) and the external auditor to be "responsible for obtaining reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or error" (ISA 240, paragraph 5).

The Association of Certified Fraud Examiners' 2016 Report to the Nations reported that the initial detection of occupational fraud by external auditors is 3.8 percent and by internal auditors is 16.5 percent (Association of Certified Fraud Examiners, 2016). Chui and Pike (2013) attributed the failure of external auditors to detect fraud to the differing skill sets and task objectives in financial statement audits and fraud audits. The comparatively better performance of internal auditors could arise from internal auditors' perception that fraud detection was highly relevant to their jobs (DeZoort and Harrison, 2008).

Even so, the initial detection of occupational fraud by internal auditors (16.5 percent), which is the second most prevalent fraud detection method, is low compared to tips from hotlines (39.1 percent), the most prevalent fraud detection method (Association of Certified Fraud Examiners, 2016).

Auditors' apparent failure in detecting fraud is attributed to their lack of appropriate training and skills to meet the requirements of the standards (Chui and Pike, 2013). Additionally, fraud has an inherent element of deception and concealment by perpetrators that results in minimal opportunities for auditors to develop knowledge of fraud and fraud detection (Dycus, 2002; Krambia-Kapardis, 2001).

This study investigates auditors' fraud detection capabilities by interviewing auditors and fraud investigators who have repeated and direct experience with fraud detection and/or fraud investigations; and who are recognized by their peers to be experts in fraud detection. The originality of this study lies in the unique sample of practitioners who participated in the interview study and provided a definition of auditor expertise in fraud detection; and the practitioners who validated the model of auditor expertise in fraud detection.

The exploratory in-depth interviews addressed the primary questions: What is the definition of auditor expertise in the fraud detection task? and What are the determinants of auditor expertise in fraud detection? The results of the interviews were the definition of auditor expertise in fraud detection, identification of the determinants of fraud detection expertise, and the strategies to develop knowledge of fraud and fraud detection.

The first contribution of this study is the model of auditor expertise in fraud detection, which extends Bonner and Lewis' (1990) determinants of auditor expertise by introducing additional determinants relevant to the fraud detection task. The nature of fraud and fraud detection changed the definitions of some of Bonner and Lewis' (1990) determinants of auditor expertise. This model is complemented by the definition of auditor expertise in fraud detection.

The second contribution is the identification of strategies to develop auditor knowledge of fraud and fraud detection. These strategies are learning methods that can “help to improve auditors’ abilities to detect and limit fraud” (Chui and Pike, 2013, p. 226) and to transfer expertise to non-experts, which is the objective of auditing expertise research (Bédard and Chi, 1993).

This study does not distinguish between the fraud detection capabilities of internal auditors and external auditors because auditors have equal awareness of fraud risks and an equal ability to detect fraud (Apostolou, Hassell, Webber, and Summers, 2001; Moyes and Hasan, 1996).

The following sections outline the literature review before discussing the interview study. Next, the results for each research question are presented and discussed. This article concludes with a discussion of the contributions of this study and proposals for future research.

Literature Review

This section begins with a discussion of the characteristics of fraud and fraud detection. Next, the definition and determinants of auditor expertise in other audit tasks, and the measures of auditor expertise in fraud detection are discussed. This section concludes with a discussion on the influence of organizational factors on auditor expertise in fraud detection.

Characteristics of Fraud and Fraud Detection

The primary characteristic of fraud is the element of deception and concealment by fraud perpetrators (Dycus, 2002; Krambia-Kapardis, 2001). The attribute of dishonesty distinguishes fraud from innocent conduct (Smith, 2003). Fraud differs from unintentional errors because fraud has the elements of intent and purpose to gain an advantage over another through false pretense (Albrecht, Albrecht, and Albrecht, 2006).

Fraud, as suggested by corporate fraud literature, is difficult to detect for several reasons (Crumbley et al., 2017). First, perpetrators may be familiar with accounting procedures, and hence they can cover up fraud (Krambia-Kapardis, 2001). Second, auditors lack adequate training fraud and investigative methodologies, and hence they have reduced capability in fraud detection (Grazioli, Jamal, and Johnson, 2006; Dycus, 2002; Bayou and Reinstein, 2001; Johnson, Grazioli, Jamal, and Berryman, 2001). Third, the time and budgetary constraints associated with external audit results in external auditors increasing their reliance on management’s representations of financial statements (Krambia-Kapardis, 2001). Fourth, external auditors can experience the agency problem of an inherent conflict of interest because they are investigating the party that paid for their services (Gavious, 2007; Wells, 1993). This agency conflict is also inherent in the internal audit function as it is part of the entity. Auditors’ agency conflict may contribute towards an unconscious bias (Bazerman, Loewenstein, Moore, 2002) to engage in shirking their responsibility to detect fraud. Finally, auditors have relatively infrequent experience of fraud in their career due to the low base-rate of fraud detection (Loebbecke, Eining, and Willingham, 1989), which results in the lack of opportunity for auditors to develop fraud detection expertise (Johnson, Grazioli, and Jamal, 1993).

Auditor expertise in fraud detection differs from auditor expertise in other audit tasks because fraud detection is an unstructured task that has an impoverished learning environment (Libby and Tan, 1994; Libby and Luft 1993). As an unstructured task, fraud detection requires the auditor to generate alternative methods of detecting fraud, derive information from disparate sources, and to think out of the box in the selection of fraud detection methods. Fraud detection has an impoverished learning environment because auditors have minimal opportunity to acquire knowledge of fraud detection through structured sources (e.g., texts, and auditors generally have minimal experience with the fraud detection task compared to other audit tasks).

Defining Auditor Expertise in Other Audit Tasks

Expertise is “the ability, acquired by practice, to perform qualitatively well in a particular task domain” (Frensch and Sternberg, 1989, p. 158). This definition recognizes that expertise is relative rather than absolute, is domain-dependent, and refers to the achievement of quality in performing a task. Elements of this definition have been used in auditor expertise literature and psychology literature. For example, auditor expertise differs at different phases of an audit (Kent, Munro, and Gambling, 2006) and auditor’s rank (Tan and Libby, 1997). Next, domain knowledge and the organization of knowledge are key criteria for expertise (Bédard, 1991, 1989; Bédard and Chi, 1993; and Shanteau, 1993, 1992). This

factor means that an expert in a domain has more knowledge than a novice, and hence is able to perform more efficiently in that domain (Bédard and Chi, 1993). Finally, auditor expertise is defined as task-specific superior performance (Bonner and Lewis, 1990; Libby and Luft, 1993; Libby and Tan, 1994; and Solomon, Shields, and Whittington, 1999). Bonner and Lewis (1990) explained that varying types of knowledge are required to complete different audit tasks. Therefore, one cannot assume that auditors with the same level of experience possess equal task-specific knowledge. An auditor with specific knowledge of a task will be able to perform better than an auditor without such knowledge.

Research Question One

The element of deception and concealment by fraud perpetrators that characterizes the fraud detection task is expected to impact on the definition of auditor expertise in the fraud detection task. Therefore, the first research question is, What is the definition of auditor expertise in the fraud detection task?

Determinants of Auditor Expertise in Other Audit Tasks

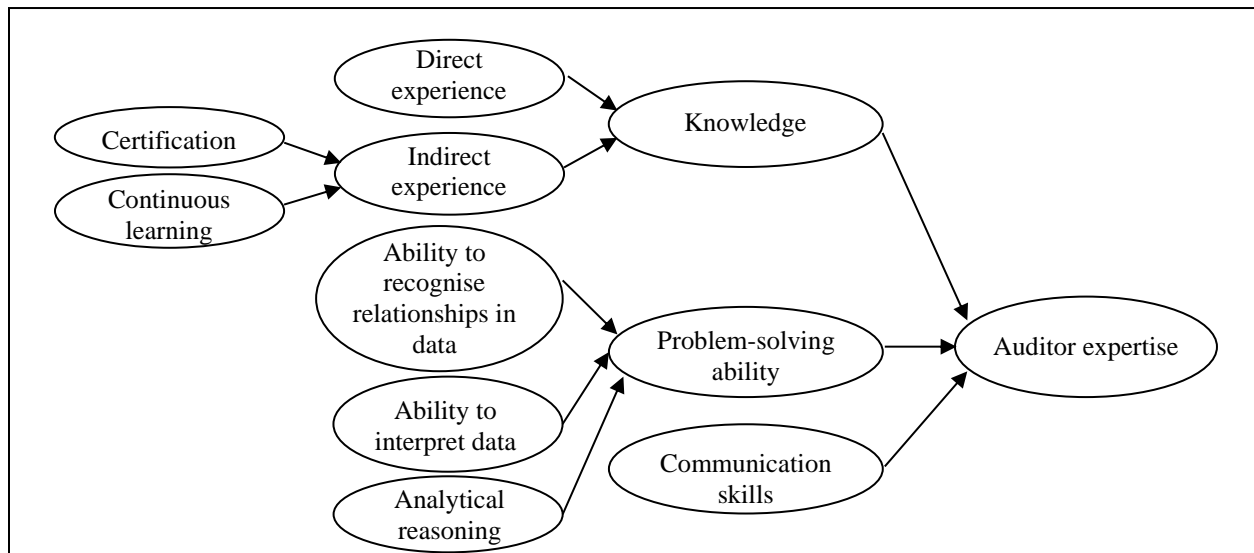
Bonner and Lewis (1990) established that both knowledge of the task and problem-solving ability demonstrate auditor expertise in audit tasks such as internal controls, ratio analysis, earnings manipulation, and interest rate swaps. Later research by Abdolmohammadi, Searfoss, and Shanteau (2004), identified that top industry audit specialists possess current knowledge, problem-solving skills, experience, and communication skills. These determinants are discussed below.

Knowledge

The ability to demonstrate auditor expertise in an audit task is based on the idea that knowledge is developed through direct experience (Libby and Luft, 1993; Bonner and Lewis, 1990) and indirect experience with an audit task (McGraw and Pinney, 1990). Direct experience is developed through repeated exposure to a task, which is based on past judgmental demand and performance feedback (Bédard, 1989). Indirect experience can be developed from sources such as education and training (McGraw and Pinney, 1990; Bonner and Lewis, 1990; Bédard, 1989). Direct experience is more likely to develop specific expertise while indirect experience with a task is more likely to develop general expertise (Marchant, 1990). Direct experience has a greater impact on knowledge compared with learning through indirect experience (McGraw and Pinney, 1990).

Knowledge can refer to technical knowledge (Libby and Luft, 1993; Bonner and Lewis, 1990) and non-technical knowledge (Tan, 1999; Tan and Libby, 1997), which includes client knowledge and interpersonal skills. This study distinguishes these types of knowledge and recognizes that the development of technical knowledge can refer to learning processes. Learning processes in the context of auditor expertise are direct experience and indirect experience with an audit task, such as certification and continuous learning. Figure I reflects the relationships of these determinants in the model of auditor expertise in other audit tasks (i.e., audit tasks apart from the fraud detection task).

Figure I: The Model of Auditor Expertise in Other Audit Tasks



Problem-solving Ability

Problem-solving ability includes “the ability to recognize relationships [in data], interpret data, and reason analytically” (Bonner and Lewis, 1990, p. 6) (see Figure I). The ability to interpret data is “the ability to synthesize information and to select the appropriate information to answer the question” (Bonner and Lewis, 1990, p. 10). Bonner and Lewis (1990) define analytical reasoning as “the ability to analyze a given structure of relationships and to deduce new information from that structure” (p. 10).

Libby and Luft (1993) and Libby and Tan (1994) confirmed that problem-solving ability has both a direct and an indirect relationship with auditor expertise. Knowledge is the intervening variable in the indirect relationship between ability and auditor expertise. Knowledge is developed through experience and the auditor’s ability. Each audit task requires different types of knowledge, e.g., general domain knowledge, general business knowledge, and sub-specialty knowledge (Bonner and Lewis, 1990). Therefore, it is important to understand the nature of audit tasks.

Audit tasks can be classed as: (1) structured or unstructured; and (2) as having a rich or impoverished learning environment (Libby and Tan, 1994; Libby and Luft, 1993). Ability has a direct effect on expertise when the task is unstructured. Ability has an indirect effect on expertise through the intervening variable, knowledge, when there is an impoverished learning environment (Libby and Tan, 1994; Libby and Luft, 1993; Bonner and Lewis, 1990).

Psychology research (see Kent et al., 2006; Abdolmohammadi et al., 2004) identified that expert auditors demonstrated perceptual ability and the ability to distinguish relevant from irrelevant information. Perceptual ability is “the ability to extract information others overlook or cannot see” (Kent et al., 2006, p. 139). The ability to recognize relationships in data comprises both perceptual ability and the ability to distinguish relevant from irrelevant information.

An external auditor is responsible for “maintaining professional skepticism throughout the audit” (ISA 240, paragraph 8) by ensuring “an ongoing questioning of whether the information and audit evidence obtained suggests that a material misstatement due to fraud may exist” (ISA 240, paragraph A7). Fullerton and Durtschi (2004) proposed that internal auditors exercise professional skepticism although it is not expressly addressed in The Institute of Internal Auditors’ standards. Nelson (2009) defines professional skepticism as “indicated by auditor judgments and decisions that reflect a heightened assessment of the risk that an assertion is incorrect, conditional on the information available to the auditor” (p. 1). Hurtt, Eining, and Plumlee (2008) reported that when presented with skepticism-inducing situations, auditors with higher levels of professional skepticism increase their skeptical behaviors. In keeping with the Bonner and Lewis (1990) definitions of the categories of problem-solving ability, professional skepticism is categorized as analytical reasoning.

Communication Skills

Abdolmohammadi et al., (2004) identified that top industry audit specialists possess the ability to communicate expertise, which is to convince “others that he/she has specialized knowledge” (p.14) by effectively communicating “his/her ability to make decisions to others” (p. 14). Communication skills is a form of non-technical knowledge (Tan, 1999; Tan and Libby, 1997) (see Figure I).

Measures of Auditor Expertise in Fraud Detection

Certification

Moyes and Anandarajan (2002) and Moyes and Hasan (1996) have attempted to identify the influence of specific measures on auditors’ fraud detection capabilities. These studies reported that auditors who possess certifications in addition to the CPA certification¹ are highly associated with fraud detection. Moyes and Anandarajan (2002) identified that professionalism contributes to an auditor’s fraud detection capabilities. The link between these two factors is that certification may imply higher professionalism, which is measured by competence, diligence, professional skepticism, and reduced negligence. Professional skepticism is lacking when the auditor is too inexperienced, naive, or trusting (Moyes and Anandarajan, 2002).

Moyes and Anandarajan (2002) framed these survey measures as factors that could impair the CPA’s ability to detect fraud. In their study, competence refers to technical competence for the audit engagement, which includes specialized

¹ These other certifications are Certified Management Accountant, Certified Internal Auditor, Certified Information Systems Auditor, and Certified Fraud Examiner.

education and experience. The lack of diligence could arise from poor planning, supervision, application, or reporting. Diligence is “the attention and care legally expected or required” of an auditor (Merriam-Webster, 2017). Negligence is “the failure to take the care that a cautious person usually takes” (Merriam-Webster, 2017). An example of negligence is cutting too many corners. In Figure I, certification is categorized under indirect experience and professional skepticism is included under analytical reasoning.

Experience

Moyes and Anandarajan (2002) and Moyes and Hasan (1996) identified that auditors’ rank and the number of years of audit experience contribute to auditors’ fraud detection capabilities. Auditors with greater experience in a managerial or supervisory capacity are more likely to detect fraud because the longer the auditing experience, the higher the likelihood of exposure to fraud, and hence the greater the opportunities to discover fraud. However, Bédard (1989) disputes that the number of years of auditing experience is not a determinant of auditor expertise because expertise is domain-specific and auditors’ experience may not encompass fraud detection. Therefore, the implication is that the auditor has not had the opportunity to develop expertise in fraud detection. Further, Bonner and Lewis (1990) explained that knowledge and ability are better explanatory variables of performance as opposed to auditors’ rank and years of audit experience because: (1) auditors acquire different types of knowledge through different specific experiences and training; (2) “problem-solving ability is partially innate” (p. 4), and hence cannot always be developed by training; and (3) knowledge is partially refined through experience in problem-solving. Therefore, auditors’ rank and the number of years of experience are not appropriate measures of auditors’ fraud detection capabilities.

The Influence of Organizational Factors on Auditor Expertise in Fraud Detection

Organizational factors can potentially influence auditor expertise because the organization is where the auditor conducts audit work. The Association of Certified Fraud Examiners recognizes the importance of the “tone at the top” in creating an ethical workplace in the organization (Mahadeo, 2006). The “tone at the top” refers to the support an organization’s leadership provides towards creating an ethical (or unethical) atmosphere in the workplace (Mahadeo, 2006). The inclusion of this determinant implies that auditor expertise in fraud detection is not completely inherent in an individual but is partially determined by environmental factors.

The Moyes and Hasan (1996) study of U.S.-based CPAs identified the organizational factors that contribute to auditors’ fraud detection capabilities as: (1) prior success of the organization in detecting fraud; and (2) a larger organization size. Since the Moyes and Hasan (1996) study, there has been a significant shift in organizations to focus on fraud risk management (Spira and Page, 2003). This shift is reflected in the 2016 Ernst and Young Global Fraud Survey where organizations manage fraud risk by undertaking regular fraud risk assessments, establishing clear whistleblowing channels and policies, and adequately resourcing compliance and investigations functions. As such, organizational factors have the potential of contributing to or inhibiting the auditor’s demonstration of expertise.

Research Question Two

Auditor expertise literature has established the determinants of auditor expertise in audit tasks other than fraud detection at the individual auditor level. Moyes and Hasan (1996) introduced the influence of organisational factors on the individual auditor’s propensity to detect fraud. To identify the determinants of auditor expertise in the fraud detection task, the second research question is, What are the determinants of auditor expertise in fraud detection?

Exploratory Interviews

Interview Participants

The focused interview approach was employed because there was scant research about whether the determinants of auditor expertise discussed in the literature review was applicable to the fraud detection task. This interview approach (see Merton, Fiske, and Kendall, 1990; Merton and Kendall, 1946) aims to derive as complete a report as possible of auditors’ fraud detection capabilities. This interview approach requires that interview participants have repeated exposure to actual incidences of fraud to be considered as experts. This repeated exposure to fraud incidences would have resulted in these experts possessing knowledge of: (1) how the fraud was perpetrated; (2) how to minimize or circumvent fraud; (3) weaknesses in the organization’s internal control systems; and (4) how internal control weaknesses were exploited.

In-depth interviews were conducted with seven professional elites who: (1) had previously been involved in fraud investigations, including financial fraud investigations, and/or had successfully detected fraud; and (2) had repeated and direct experience with fraud detection and/or fraud investigations. All participants were recognized by their peers to have demonstrated expertise in the fraud detection task and held at least a managerial position in their organization. Official recognition or job titles and peer recognition within the profession is reflective of auditor expertise (Abdolmohammadi, et al., 2004; Bédard and Chi, 1993; and Shanteau, 1993).

All participants had work experience in various countries in Asia-Pacific, North America, and Europe; and in multinational accounting firms. Four participants possessed certifications from professional accounting bodies such as CPA Australia and the Institute of Chartered Accountants of Australia and New Zealand. Five participants possessed either the Certified Internal Auditor certification from The Institute of Internal Auditors or the Certified Fraud Examiners certification from the Association of Certified Fraud Examiners. All participants applied international standards, guidelines, and regulation in their work.

At the time the interviews were conducted, all but one participant was residing in Australia. The interviews were conducted one to one and audio-taped. The researcher recorded field notes for each interview. The length of the interviews varied between twenty minutes and seventy minutes. The interview with the overseas-based participant using voice over Internet protocol was the shortest because of technical difficulties. However, the participant answered further questions by e-mail. Participant demographics are listed in Table I.

Table I: Participant Demographics

Participant	Position	Background
A	Principal consultant, consulting firm	Internal audit, fraud investigation, consulting, government, private sector
B	Senior manager, Big 4 chartered accounting firm	Fraud investigation, policing, government, consulting, chartered accounting firm
C	Director, consulting firm	IT security, fraud investigation, government, private sector
D	Director, Big 4 chartered accounting firm	Fraud investigation, computer forensics, chartered accounting firm
E	Senior manager, Big 4 chartered accounting firm	Fraud investigation, internal audit, accounting, forensic accounting, private sector, chartered accounting firm
F	Partner, consulting firm	External audit, consulting, fraud investigation, forensic accounting, chartered accounting firm
G	Manager, Government	Internal audit, accounting, fraud investigation, government

Interview Guide

The interview guide was derived from a content analysis of literature, mandatory auditing standards, non-mandatory guidelines, proprietary KPMG Fraud Survey data,² and survey data from the public domain that relates to fraud detection (see Merton and Kendall, 1946). The interview guide comprised semi-structured and unstructured questions to identify participants' fraud detection capabilities, such as judgement and decision-making processes, and external factors that contributed to or inhibited their ability to detect fraud, such as organizational reporting mechanisms.

The focused interview uses a non-directive interviewing approach to facilitate a spontaneous flow of responses from interview participants (Merton and Kendall, 1946). The interview guide was sent to participants in advance to allow them to reflect on their responses (Flick, 2006). At the start of the interview, participants were asked to comment on the questions and the relevance to their background. This allowed for some questions to be re-phrased to match the specific backgrounds and experiences of the participant. For example, participants with an information technology background emphasized operational audits as opposed to financial statement audits. While some questions were re-phrased, the interview guide ensured that all participants were asked the same questions to ensure the comparability of data across

² A KPMG Forensic Australia Fraud Survey.

interviews (Merton and Kendall, 1946). Therefore, the interview guide ensured that the interviews covered the same range of items relating to auditors' fraud detection capabilities.

The researcher raised questions that participants did not spontaneously address at the end of the interview (Gibbins, Richardson, and Waterhouse, 1990). Where further detail was required, the researcher reintroduced an earlier topic (Flick, 2006; Merton and Kendall, 1946). The interview itself aimed to capture the subjective experiences of participants. Participants' responses were used to: (1) test the validity of the research questions derived from content analysis and relevant theory; and (2) ascertain unanticipated responses to develop new hypotheses. For example, Participant A spontaneously discussed the relationship between knowledge and experience, which raised a new hypothesis. Since this relationship had been established in literature (see Libby and Tan, 1994; Libby and Luft, 1993), additional questions were added to the interview guide to test this hypothesis. Subsequent interviews with Participants B and C provided sufficient evidence of the existence of that relationship. Therefore, additional questions based on the knowledge-experience relationship were included in subsequent interviews. The interview questions are listed in Table II by research question.

Table II: Interview Guide

Interview questions	
Participant demographics	
1	What is your experience with fraud detection?
2	What kinds of fraud have you encountered?
RQ1: What is the definition of auditor expert performance in the fraud detection task?	
6	When you discover fraud, what procedures would you undertake to convey this information to the appropriate parties?
7	When you discover fraud, who would you convey this information to?
8	Tell me of an experience where you detected fraud. What did you do? What fraud cues alerted you to that incidence of fraud?
9	How would you detect fraud that has minimal or non-existent fraud cues?
RQ2: What are the determinants of auditors' fraud detection capabilities?	
3	What do you consider to be the important attributes/characteristics an individual should possess to detect fraud?
4	What personal attributes/characteristics could impair/inhibit an individuals' ability to detect fraud?
5	What do you consider to be important external factors that impact on an individual's ability to detect fraud?
10	What initiatives would you like to see in your organization/your client's organization with respect to fraud detection?
11	How would you assess the effectiveness of an organization's fraud detection practices?
12 [^]	When you encounter fraud that you are unfamiliar with, do you rely more on your experience or knowledge of fraud detection developed through certification?
13 [^]	In your opinion, what is the relationship between experience in fraud detection and certification?
14 [^]	How do you think your ability to detect fraud cues is affected by the relationship between experience in fraud detection and certification?
Notes to the table:	
1) The numbers denote the sequence of questions in the interview guide.	
2) [^] Additional questions included in the revision of this guide after the first three interviews.	

Data Collection

The interviews met the criteria of focused interviews: range, specificity, depth, and personal context (Merton, Fiske, and Kendall, 1990). First, the interview guide was used in all interviews and the range of responses were anticipated responses based on prior literature, responses that suggested interrelations with data from other sources, and unanticipated responses. Second, probing questions were posed to participants to seek further clarification and elaboration of vague and general responses. This questioning resulted in specific answers from interview participants. Finally, the depth and personal context criteria were achieved when participants responded spontaneously in great-depth about an issue and weaved in their personal experiences and views. Participants were given the freedom to articulate their perceptions about the determinants of auditor expertise in fraud detection and to highlight their own areas of interest and expertise (see Horton, Macve, and Struyven, 2004).

Data Analysis

The transcribed interview data was analyzed in a three-iteration process (see Anfara, Brown and Mangione, 2002) based on the two research questions. In the first iteration, content analysis regrouped the determinants of auditor expertise from Figure I and identified additional determinants of auditor expertise. The second iteration refined the earlier content analysis to identify themes in the transcripts. In the third iteration, the data analysis culminated in the development of the model of auditor expertise in fraud detection, which extended the model of auditor expertise in other audit tasks to the fraud detection task.

The following sections discuss the results by research question.

Research Question 1: Definition of Auditor Expertise in Fraud Detection

Auditor expertise in fraud detection was defined by interview participants as the auditor's success in detecting fraud. Success in detecting fraud is reflected in the expert auditor's ability to identify potential irregularities in data, conduct further investigation of the irregularities that were identified, determine whether further investigation of an irregularity is required, and determine if fraud has occurred. A pivotal concept in this study is the ability to detect fraud, which was described as the ability to "see a thread or lead" (Participant E) and was considered by interview participants as the precursor to success in detecting fraud.

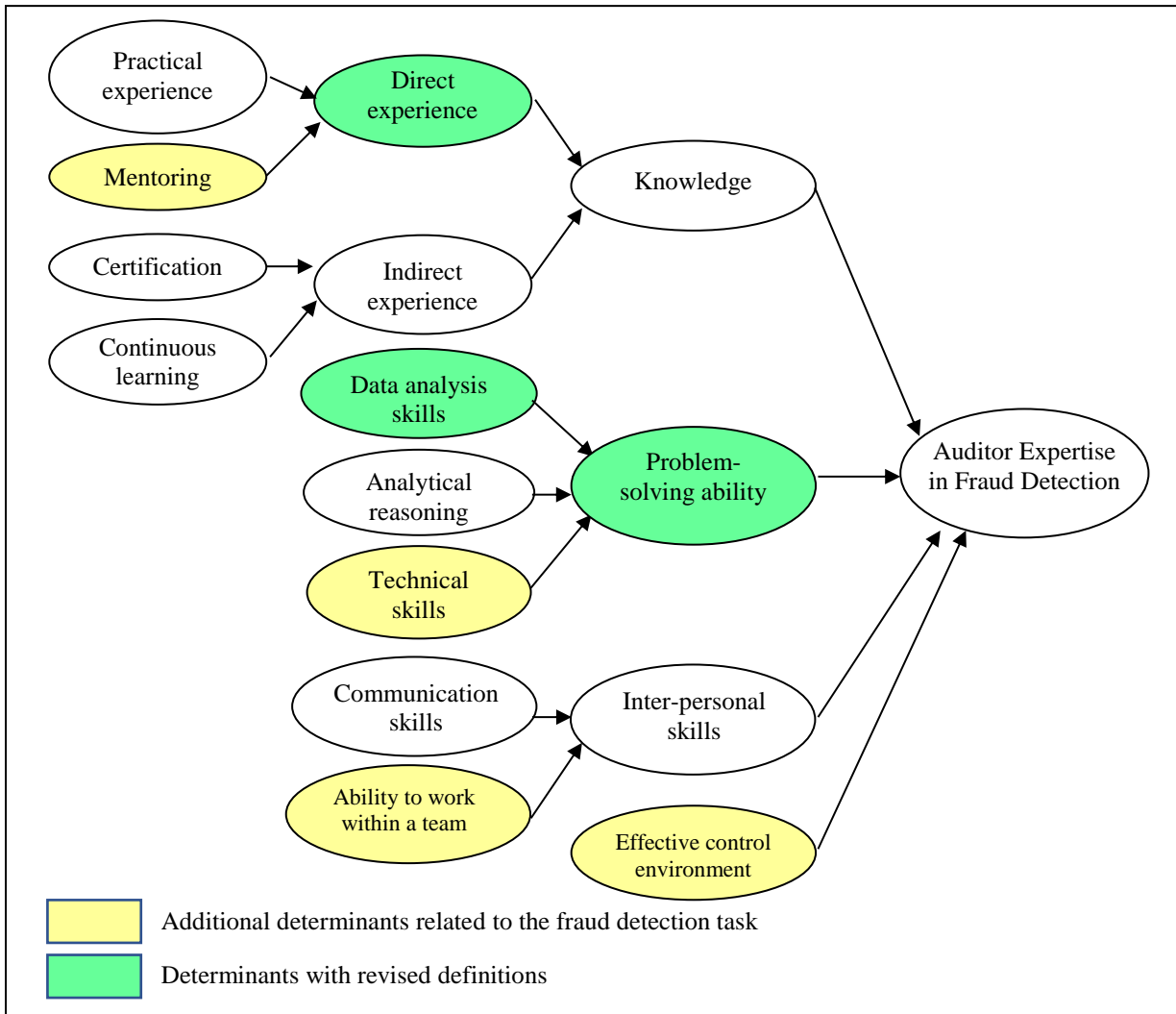
This definition captures the three elements of the previously discussed Frensch and Sternberg (1989) definition of expertise, i.e., "the ability, acquired by practice, to perform qualitatively well in a particular task domain" (p. 158). The three elements are that expertise is relative rather than absolute, is domain-dependent, and refers to the achievement of quality in performing a task. Auditor expertise in fraud detection is first reflected in the auditor's actual demonstration (i.e., realization, of the auditor's ability to detect fraud). Next, the particular task domain in this definition is the fraud detection task. Finally, the achievement of quality is when the auditor identifies red flags and makes judgments about whether fraud had been perpetrated.

Research Question 2: Determinants of Auditor Expertise in Fraud Detection

The interview results confirmed that knowledge, problem-solving ability, communication skills, and organizational factors (i.e., the environment where the auditor conducts audit work, are relevant to auditor expertise in the fraud detection task). Mentoring, data analysis skills, technical skills, and the ability to work within a team were identified as additional determinants of expertise related to the fraud detection task. The definitions of direct experience, data analysis skills, problem-solving ability, and organizational factors were revised to align these determinants to the context of auditor expertise in fraud detection.

The relationship of these determinants with auditor expertise in fraud detection is reflected in the model of auditor expertise in fraud detection (see Figure II).

Figure II: The Model of Auditor Expertise in Fraud Detection



Knowledge comprises practical experience, mentoring, certification, and continuous learning, which are strategies to develop knowledge in fraud and fraud detection. Problem-solving ability includes data analysis skills, technical skills, and analytical reasoning. A newly identified construct, inter-personal skills, is composed of communication skills and the ability to work within a team. An effective control environment refers to the organizational factors that affect auditors' ability to detect fraud.

The following discussion of the determinants are by higher-order constructs.

Knowledge

Possessing current knowledge was ranked as the principal attribute of top industry audit specialists in a study by Abdolmohammadi et al., (2004). Possessing current knowledge is related to the question of how auditors learn about fraud and fraud detection. As with knowledge development in other audit tasks, knowledge in fraud detection can be developed through direct experience and indirect experience with the fraud detection task. In Figure I, direct experience referred to practical experience with an audit task. Comparatively, direct experience with the fraud detection task encompasses both practical experience and mentoring, an additional determinant related to the fraud detection task that was identified from the interviews. In Figure II, mentoring was included as a type of direct experience with fraud detection, and hence direct experience was reclassified as practical experience. Indirect experience with the fraud

detection task is developed through professional certification and continuous learning, which was the case with auditor expertise in other audit tasks.

Practical Experience

“Even though the forms of fraud will change, the more times you deal with [fraud] the more you become aware of it”. (Participant B)

Practical experience was defined as repeated exposure to the fraud detection task. This definition concurs with McGraw and Pinney (1990) who suggested that direct experience with a task develops expertise specific to the task. International Education Standard (IES) 5, *Initial Professional Development—Practical Experience* (International Accounting Education Standards Board, 2015) paragraph 11, identifies practical experience as a requirement for professional accountants to demonstrate that they have “gained the (a) technical competence, (b) professional skills, and (c) professional values, ethics, and attitudes necessary for performing a role of a professional accountant”. However, the low base rate of fraud detection by auditors (Loebbecke et al., 1989) makes it difficult to develop fraud detection expertise exclusively from practical experience (Johnson et al., 1993). The interview results suggest that learning from a mentor is an alternative method of developing direct experience with fraud detection.

Mentoring

A mentor was defined as an experienced person who could bring a less experienced person through the investigation process and demonstrate the capabilities required to detect fraud. A good mentor enables a less experienced person to use their current mindset to further develop their skills. This value was reflected in the following statements:

“You still are going to need...experienced people to bring [less experienced team members] through and show them their capabilities.” (Participant B)

“[My mentor] has been a great mentor in relation to using my current mindset to develop even further my investigation skills.” (Participant E)

Expertise in a task is developed through experience with similar problems in the task (Johnson et al., 1993). However, the paucity of incidences of fraud detection makes it difficult for auditors to learn exclusively from practical experience with the fraud detection task (Johnson et al., 1993; Loebbecke et al., 1989). Further, an auditor with many years of auditing experience does not necessarily have a greater exposure to fraud because the auditor’s experience may not encompass fraud detection (Bédard, 1989). As such, mentoring is a viable alternative to learn about fraud detection because the less experienced auditor can learn from a more experienced auditor who has had first-hand experience with fraud detection. In such circumstances, mentoring is akin to an apprentice learning from the master.

Although mentoring was identified as a determinant that was relevant to fraud detection, mentoring is not a new concept to the auditing profession, which has profession-based mentoring for its members. Mentoring is recognized as a method of learning in IES 7, *Continuing Professional Development* (International Accounting Education Standards Board, 2014a) paragraph A7 (1), and profession-based mentoring programs, which are based on the guidelines of IES 1, *Entry Requirements to Professional Accounting Education Programs* (International Accounting Education Standards Board, 2014b) paragraph 25, are a requirement to qualify for membership with professional accounting bodies.

Mentoring is also not a new concept to organizations and has been applied to different degrees in larger organizations. The size of the workforce, especially staff with more experience, makes mentoring more viable in larger firms. The interviews highlighted the effectiveness of mentoring at the organizational-level. Two participants—a superior and a subordinate—from the same team highlighted the importance of mentoring in developing fraud detection skills. The responses of Participant B, who was from a different organization and who was a mentor to junior staff, validated the comments from these two participants.

Certification

Indirect experience with audit tasks including the fraud detection task can be developed through certification (IES 1, paragraph 33) and continuous learning (IES 1, paragraph 34). The Institute of Internal Auditors’ Standard 1210.A2 requires internal auditors to have sufficient knowledge to evaluate fraud risk and ISA 240, paragraph A34, requires external auditors with specialized knowledge to be assigned to audit engagements with identified risks of material misstatements to financial statements. Participants C, F, and G suggested that case studies and simulations are effective

tools to develop such knowledge. As such, these tools can be incorporated into certification and continuous learning programs.

In the context of fraud detection, certification was defined as professional certification obtained from a formal education process that demonstrates an individual's minimal level of competency. Participant B expected that the process of obtaining professional certification would expose an auditor to a broader range of fraud incidences to develop greater understanding of fraud. Although interview participants considered that continuous learning provided similar exposure to fraud incidences, continuous learning as a learning process for fraud detection was perceived to be a voluntary activity. In contrast, certification has a compulsory element and requires a greater investment of time, money, and effort on the part of the auditor.

Earlier studies by Moyes and Anandarajan (2002) and Moyes and Hasan (1996) highlighted that possessing professional certification such as the Certified Management Accountant, Certified Internal Auditor, Certified Information Systems Auditor, and Certified Fraud Examiner, in addition to the U.S.-based CPA certification, increased the auditor's propensity to detect fraud. A possible reason for this increased propensity to detect fraud was that these certifications provide a specific focus on a function, such as internal audit, or on an activity, such as fraud investigation.

Continuous Learning

Interview participants concurred that continuous learning refers to developing experience through methods such as training, case studies, professional literature, and simulations to keep updated with fraud detection knowledge. They considered continuous learning in fraud detection as an important activity to stay abreast of: (1) changes in the technical aspects of how fraud can be perpetrated; and (2) changes in the environment in which fraud can be perpetrated. Participants A, B, C, D, and G emphasized that continuous learning was a career-long learning process. Further, being willing to learn and keeping updated is more beneficial than relying solely on formal certification. This updating concurred with a Abdolmohammadi et al., (2004) study that reported that the principal attribute of top industry audit specialists is possessing current knowledge (i.e., keeping up with facts, trends, and developments).

Auditors are required to undertake continuing professional development to enhance their knowledge, skills, and competencies (International Auditing and Assurance Standards Board, 2009b: International Standard on Quality Control 1, *Quality Control for Firms That Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements*, paragraph A25; The Institute of Internal Auditors, 2017b: Standard 1230; IES 7, paragraph 12).

Strategies to Develop Knowledge of Fraud and Fraud Detection

Interview data revealed that auditors' ability to detect fraud stems from how they learn about fraud and fraud detection. Specifically, Participant B best expressed the sequence of these learning processes as:

“training [professional certification], [practical] experience, mentoring, and then continuous learning.”

Of these strategies, interview results suggest that continuous learning is the most effective because: (1) it builds on the other three learning processes; (2) the auditor can undertake continuous education throughout his/her career; and (3) it is an effective method to keep updated with the latest developments in fraud detection at any stage of the auditor's career.

Interview participants assessed that the effectiveness of the learning method was dependent on: (1) the practitioner's stage in their career; (2) the practitioner's job requirements, which defines their responsibility towards fraud; and (3) the content and depth of the certification and continuous learning materials. For example, the value of certification differs at different levels of one's career. Certification was perceived to be the minimal level of competency required at the initial stages of one's career. However, participants who obtained certification at a later stage of their career perceived that certification enhanced their credibility with their employer and industry (Participants D and E).

Problem-solving Ability

Knowledge in fraud detection is insufficient to develop expertise in fraud detection. Problem-solving ability is the other important determinant in developing expertise in fraud detection (Bonner and Lewis, 1990; Libby and Luft, 1993). The interview results reflect that the definition of problem-solving ability in fraud detection has evolved to encompass data analysis skills, analytical reasoning, and technical skills. The ability to recognize relationships in data (see Figure I) determinant has been included in the data analysis skills determinant in Figure II.

Data Analysis Skills

Data analysis skills encompass both the ability to recognize relationships in data and the ability to interpret data. This fraud detection-specific definition combines two of the three elements in Bonner and Lewis's (1990) definition of problem-solving ability. The ability to analyze relationships in data requires perceptual ability, which Kent et al., (2006) defined as "the ability to extract information others overlook or cannot see" (p. 139). Data analysis skills also requires configural processing, which Abdolmohammadi et al., (2004) defined as "recognize[ing] the interrelationships between various types of evidence" (p. 14) or information. This close relationship between the composites is evident in the following comments:

"Knowing how fraud is committed, [and] then knowing how to do the analysis in order to think that potentially there might be a problem." (Participant F)

"It's about recognizing anomalies [in data] and then following through on trying to understand why they might exist." (Participant D)

These comments reflect that the data analysis skills determinant requires the auditor to be able to recognize relationships in data and subsequently, interpret this data. Therefore, the ability to recognize relationships in data from Figure I has been included in the data analysis skills determinant from Figure II.

Exercising data analysis skills is evident in a practitioner using a variety of methods to identify cues that could indicate that fraud has been perpetrated (Participants A, B, and D). These methods include applying well-founded auditing practices such as auditing standards and guidelines; analyzing databases; looking for trends; and assessing internal controls to determine if there are cues that fraud has been perpetrated.

In-house internal auditors are well positioned to detect fraud because they are aware of trends within their own organizations (Participant F). This knowledge concurs with the findings of a study by Coram, Ferguson, and Moroney (2008) that organizations with an in-house internal audit function are more likely than those without an internal audit function to detect and self-report fraud.

Analytical Reasoning

All interview participants affirmed that analytical reasoning is an important problem-solving ability in the context of fraud detection. This finding concurs with Bonner and Lewis's (1990) comment that "problem-solving is partially [an] innate" (p. 4) characteristic of an auditor.

Interview participants described analytical reasoning in detecting fraud as possessing an inquiring mind; being observant; keeping one step ahead in terms of thinking about the pressures [for someone to perpetrate fraud]; having a cynical mindset; taking a subjective view and following the facts; having the ability to observe and question; possessing a creative mind; being able to think out of the box; having a big-picture perspective; possessing the diligence to follow through.

Psychology literature confirms that these different aspects of analytical reasoning identified by interview participants are the attributes of top industry audit specialists (Abdolmohammadi et al., 2004) and are psychological characteristics that contribute to expertise in auditor judgment (Kent et al., 2006). These specific characteristics, as identified by interview participants, include being adaptive in their decision-making strategy, possessing the ability to identify relevant facts, being inquisitive about all aspects of an issue, and having the ability to make exceptions, (i.e., being creative in solving problems). Further, interview participants confirmed that the two elements of professional skepticism (i.e., a questioning mind and making a critical assessment of evidence). See the definition of "professional skepticism" in International Accounting Education Standards Board, 2017, which applies to analytical reasoning in the fraud detection task.

Technical Skills

The technical skills determinant is relevant to the fraud detection task and encompasses competency in auditing, information technology, and other relevant investigative skills such as interviewing. This definition corresponds with The Institute of Internal Auditors' Standard 1210.A1, which relates to competency in auditing; and Standard 1210.A3, which relates to competency in information technology. These standards require an internal auditor to be competent in different fields of expertise such as information technology and investigative skills. Participant G echoes this blend of skills in this statement:

“Ideally [for my team] what I would really like is someone who has a blend of IT audit and internal audit skills.”

The demand for auditors with a blend of technical skills corresponds with the AS8001-2008 *Fraud and Corruption Control* (Standards Australia, 2008) focus on information technology as both an enabler of fraud and a means of detecting fraud. The information technology focus reflects the increased use of information technology by organizations, specifically for their accounting systems and internal control systems (PricewaterhouseCoopers Advisory Services—Internal Audit, 2007); and the rise in the adoption of technology-based audit techniques, which the International Professional Practices Framework Glossary (The Institute of Internal Auditors, 2017c) defines as any automated audit tool. The identification of this determinant corresponds with technology being projected as the business trend with the greatest impact on internal audit roles, responsibilities, and functions (PricewaterhouseCoopers Advisory Services—Internal Audit, 2007).

Inter-personal Skills

Inter-personal skills comprised communication skills and the ability to work within a team. This new higher-order construct was included in Figure II to reflect that the characteristic of these two determinants, which focus on the interaction of the auditor with other auditors and other functions (e.g., senior management).

Communication Skills

Good communication skills foster openness in contrast to fraud fostering concealment (Hooks, Kaplan, and Schultz Jr, 1994). Psychology literature identified that top industry audit specialists were able to communicate expertise, i.e., communicate his/her decision-making ability to others (Abdolmohammadi et al., 2004).

The levels of communication identified by interview participants were: (1) the audit team communicating with other functions, such as senior management and external auditors; and (2) the individual auditor communicating with his/her peers who may be outside the organization where they conduct their work. The communication between the audit team and other functions is important because:

“Any form of communication needs to take account of your reader [and] your listener. What are their needs? What are their interests? You have to identify the issue, but you’ve got to be able to convey it in a form that’s meaningful to them.” (Participant A)

The second level of communication has the potential to improve auditors’ investigative skills. Participant D describes this improvement as:

“Being able to communicate with your peers on an informal basis, not just on having work product reviewed or anything like that, but being a part of a community of investigators that talk about investigative things. That’ll help reinforce things and filter out other things that [are] important as well.”

Ability to Work Within a Team

“I don’t think [fraud investigation is] a useful thing if you do it as a solo thing. It usually works better if you do it in a community.” (Participant D)

The ability to work within a team is related to the fraud detection task and is closely related to communication skills. While possessing communication skills is an important element in working in a team, there are other dynamics in team interaction. The ability to work within a team is reflected in the acceptance of each other’s strengths, ideas, knowledge, and skills, enhanced by good communication and open-mindedness. The outcome of working in a team is an enhanced investigation process through open discussion. The individual’s ability to work within a team contributes to the success of the team, as reflected in Participant E’s comment:

“[What makes us] a successful team? Generally, people with different strengths and people with an acceptance that they may not always be right...people without ego that come in with an open mind who enjoy identifying and gathering facts makes a great team, a great supportive team.”

Teamwork in the context of fraud detection is audit team brainstorming. SAS No. 99, *Consideration of Fraud in a Financial Statement Audit* requires auditors to brainstorm about the possibilities of fraud in every audit (Auditing Standards Board, 2002). In SAS No. 99, paragraphs 14 and 15, audit team brainstorming is the discussion among the engagement team about fraud risk. Team-based brainstorming is a methodology proposed AS8001-2008, *Fraud and*

Corruption Control (Standards Australia, 2008), section 3.6.3.1(c), to assess fraud and corruption risk. Audit team brainstorming for fraud risk assessment generates more quality ideas compared with those generated by individual auditors. Further, audit teams can eliminate poor quality ideas (Carpenter, 2007).

Working within a team is not a determinant of auditor expertise that is unique to the fraud detection task. However, it is an important determinant of auditor expertise in the context of fraud detection because fraud detection is an unstructured task (Libby and Tan, 1994; Libby and Luft 1993). The collective knowledge and skills of an audit team can generate alternative methods of detecting fraud, derive information from disparate sources, and to think out of the box in the selection of fraud detection methods (Libby and Tan, 1994; Libby and Luft 1993).

Effective Control Environment

The organizational factors determinant from Figure I has been replaced with the effective control environment determinant in Figure II. The renaming of this higher-order construct is attributed to the shift in focus away from the characteristics of the organization, i.e., prior success of the organization in detecting fraud and a larger organization size (Moyes and Hasan, 1996), to the organization's control environment, which is determined by the 'tone at the top' (see Mahadeo, 2006).

Interview participants identified characteristics of a control environment that contributed to fraud risk management, such as: (1) the existence of a control environment within the organization; (2) external persons on the audit committee and the risk management committee; (3) independent chairs of the audit committee and the risk management committee; (4) the existence of a fraud risk management policy; (5) an organizational culture that reflects the organization's code of conduct; (6) an organizational environment that assists fraud detection activities; (7) an internal audit team that is equipped to investigate incidences of fraud; (8) the education of employees on the organization's code of conduct; and (9) the commitment of resources to investigate fraud incidents. Collectively, these fraud prevention strategies contribute to the effectiveness of an organization's control environment. The effectiveness of a control environment is reflected when an organization's internal controls detect fraud (see Association of Certified Fraud Examiners, 2016). Comparatively, weak internal controls were exploited by sixty percent of fraudsters who participated in the KPMG Profile of a Fraudster Survey (KPMG, 2016).

The board is ultimately responsible for the tone at the top by ensuring that the organization's corporate governance framework comprises control mechanisms that protect and enhance the interests of its stakeholders (The Institute of Internal Auditors, 2006, 2003). Participant A explained that a management-fostered healthy organizational culture deters fraud because it is a culture where stakeholder interests are considered; it is a good control environment; and management is committed to governance and good risk management practices. Where such an environment is not fostered, it can contribute to fraud being perpetrated by employees. This environment is reflected in the comment by Participant A, which reflects the influence of the tone at the top on the organization's control environment (see Mahadeo, 2006):

“[Organizations] leave themselves exposed to employees' own interpretations as to what's reasonable. I suspect individuals tend to look on those organizations as relatively wealthy and their present, personal needs are always to the fore.”

Data Validation: Methods of Verification

Internal Validity: Data Triangulation

Data triangulation for this study was achieved among interview participants and from multiple data sources. To achieve data triangulation among interview participants, it was important to ensure that participants were from different professional backgrounds and had experience with different types of fraud. This diversity was in addition to the criteria for qualifying as interview participants.

Data was also triangulated against prior literature, mandatory auditing standards, and non-mandatory guidelines. All determinants are corroborated with interview data and at least one other data source. The corroboration of interview data with other data sources reflects interview participants' familiarity with relevant standards and guidelines. These standards and guidelines may have been applied in participants' organizations and/or with their clients. As such, these standards and guidelines relating to fraud detection are most likely perceived by practitioners and organizations to be relevant to practice.

External Validity: Reference Groups

After the interviews, two reference groups were consulted to verify the interview results, particularly the newly identified determinants that are relevant to the fraud detection task, and to address the limited sample of interview participants. The first reference group were six professional investigators from the Australian Institute of Professional Investigators. The second group were comprised of thirty-nine Certified Internal Auditors from The Institute of Internal Auditors (Brisbane Chapter). The participants from both reference groups practiced in the government sector, private sector, and chartered accounting firms. The reference groups validated the model of auditor expertise in fraud detection. Particularly, the reference group of investigators found that the model was applicable to them.

Construct Validity

The construct validity of the interview results was achieved in the corroboration of the interview results with other sources of data, particularly with prior literature, mandatory standards, and non-mandatory guidelines. This corroboration was reflected in the comparison of the model of auditor expertise in other audit tasks (Figure I) and the model of auditor expertise in fraud detection (Figure II). This comparison identified: (1) determinants that were applicable to both the fraud detection tasks and other audit tasks (e.g., continuous learning and analytical reasoning); and (2) determinants that are relevant to the fraud detection task (e.g., mentoring, technical skills, and an effective control environment).

The interview results provided comprehensive definitions of the determinants of auditor expertise in fraud detection at the second-order construct level. The comprehensive definitions of second-order constructs (e.g., mentoring), provided a better understanding of the first-order constructs—knowledge. For example, Bonner and Lewis (1990) determined that direct experience with an audit task was obtained through past judgmental demand and performance feedback and developed by repeated exposure to the audit task. Comparatively, interview data determined that direct experience with the audit task could be developed by both practical experience and mentoring, which is a determinant relevant to the fraud detection task.

In this study, the variation in determinants reached saturation after four interviews. No additional determinants emerged thereafter.

Reliability

The researcher and a second coder independently coded the transcribed interview data. Inter-coder and intra-coder reliability checks assessed the reliability of the coding process. Inter-coder reliability is the extent of agreement between the researcher and the second coder (Lombard, Snyder-Duch, Bracken, 2002), which was measured as Cohen's κ of 70.70%, i.e., substantial agreement (Landis and Koch, 1977).

Intra-coder reliability is the level of agreement when the same coder reanalyzes the same text after some time has elapsed (Krippendorff, 2004). The researcher engaged in a second round of coding after two months and the coding was compared with the initial round of coding. The Cohen's κ intra-coder reliability correlation was 91.63%, which is almost perfect agreement (Landis and Koch, 1977).

A variation of intra-coder reliability was applied in the third round of coding to minimize researcher bias. The variation was to code based on an initial coding scheme derived from literature. Revisions were made to this coding scheme to include determinants that were previously not identified in literature. The intra-coder reliability correlation between the second and third rounds of coding was a Cohen's κ of 79.39%, which is substantial agreement (Landis and Koch, 1977).

Interviewer Bias

Interviewer bias was minimized by the researcher: (1) "acknowledge[ing] the theoretical foundations of the study" (Lillis, 2006, p. 471); (2) acknowledging "the need for objectivity and distance from these preconceptions in order to observe and accept challenges to them" (Lillis, 2006, p. 471); (3) being aware of the threats to reliability; and (4) studying interviewing techniques and observation methods to ensure that she understood the validity and reliability concerns in data collection (Lillis, 2006). Interviewer bias was addressed by engaging a second coder and validating the results with two reference groups of practitioners.

Conclusion

The study aimed to investigate the determinants of auditor expertise in the fraud detection task at the individual auditor level. The determinants of auditor expertise were previously studied (see Bonner and Lewis, 1990; Libby and Luft, 1993; and Libby and Tan, 1994) but were revisited in the context of the fraud detection task and the mandatory standards for internal auditors and external auditors to consider fraud risk in their audit work.

The main findings of this study were: (1) the definition of expertise in fraud detection (Research Question 1); (2) the re-definition of specific determinants (i.e., direct or practical experience, problem-solving ability, and data analysis skills) as a result of the inclusion of additional determinants of auditor expertise in fraud detection; (3) the confirmation that the determinants of auditor expertise previously identified in literature—practical experience, certification, continuous learning, data analysis skills, analytical reasoning, and communication skills—were applicable to the fraud detection task; (4) the identification of additional determinants relevant to the fraud detection task—mentoring, technical skills, the ability to work within a team, and an effective control environment; (5) the identification of a determinant that related to the environment where the auditor performs audit work—an effective control environment—as opposed to determinants that are based on the individual auditor’s inherent fraud detection capabilities. Findings 2 to 5 relate to Research Question 2.

The prominent factor that affected these findings was that the fraud detection task differs from other audit tasks because of the element of deception and concealment by fraud perpetrators (Dycus, 2002; Krambia-Kapardis, 2001). Consequently, the uniqueness of the fraud detection task: (1) changed the definition and composition of the determinants of auditor expertise; and (2) affected the process of developing fraud detection expertise. The participation of auditors and fraud investigators in the interview study and reference groups provided a real-world perspective and definition of auditor expertise in fraud detection.

The primary contribution of this study is the model of auditor expertise in fraud detection, which extends Bonner and Lewis’s (1990) model of auditor expertise in other audit tasks to include additional determinants that are relevant to the fraud detection task. The determinants of fraud detection expertise are the combination of capabilities that fraud detection experts possess. Future research can test the level of importance or contribution of each determinant to auditor expertise in fraud detection.

The second contribution is the identification of strategies to develop auditors’ knowledge of fraud and fraud detection. Although these strategies are existing learning methods to develop knowledge, the fraud detection experts who participated in this interview study provided insights on how to transfer expertise to non-experts, which is the objective of auditing expertise research (Bédard and Chi, 1993). Future research can assess the effectiveness of these strategies in developing knowledge of fraud and fraud detection.

The limitation of this study was the relatively small sample size because it was difficult to access persons who met the necessary criteria. However, this limitation is reflective of the characteristics of fraud and fraud detection discussed above. A two-pronged approach was adopted to overcome this limitation. First, fraud investigators were included as interview participants. This inclusion resulted in a wider range of responses representing the collective skills and competencies that auditors were required to possess at the team level. Second, the interview results were validated by two reference groups of practitioners—professional investigators and internal auditors. The professional investigators reference group commented that the model of auditor expertise in fraud detection captured the capabilities they require to detect fraud.

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