

An Evaluation of Internal Auditor Responsibility for Fraud Detection

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Disclosure

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Executive Summary

This report summarizes the results of an international study of internal auditors' perceived responsibility for fraud detection. While internal audit standards prescribe professional responsibilities related to fraud, little is known about the extent that internal auditors perceive responsibility for fraud detection and the factors that affect their sense of responsibility. We examined the extent that fraud type and accountability pressure affect internal auditors' perceived fraud detection responsibility and brainstorming performance. Specifically, we tested whether internal auditors perceive different responsibility for detecting fraudulent financial reporting, misappropriation of assets, and corruption. We also tested accountability effects by evaluating whether professionals who were asked to identify themselves for subsequent performance review reported different levels of perceived responsibility than auditors who were allowed to remain anonymous.

Data was collected from 783 internal audit professionals attending The Institute of Internal Auditors' (IIA's) meetings in Australia, Belgium, Canada, Mexico, and the United States. Specifically, the participants reviewed hypothetical cases where a material fraud was ongoing in an area where they were working. Overall, the internal auditors in the study reported moderate levels of responsibility for fraud detection, and accountable participants reported higher overall detection responsibility than anonymous participants. Perceived responsibility for detecting fraud was higher in the misappropriation of assets case than in either the fraudulent financial reporting or corruption cases. Our evaluation of factors underlying perceived responsibility indicates that internal auditors' sense of professional obligation had the largest influence on their perceived fraud detection responsibility. Task clarity and sense of personal control were not significantly related to overall responsibility. Further, when asked to assign fraud detection responsibility across groups involved in fraud risk management, the participants believed that most of the responsibility for detecting fraud rested with management, internal accountants, and internal auditors.

The results also indicate that both accountability and fraud type affected the number of procedures brainstormed. Specifically, we found that accountable participants brainstormed more procedures than anonymous participants. In addition, participants brainstormed more detection procedures in the misappropriation of assets case than in either the fraudulent financial reporting or corruption cases. These brainstorming results were robust across country. There was a positive association between perceived responsibility and brainstorming performance in that internal auditors who reported a higher perceived responsibility for detecting fraud also brainstormed more audit procedures to detect the fraud.

Introduction

Fraud risks and costs continue to grow worldwide. For example, the Association of Certified Fraud Examiners (ACFE 2008) estimates that total annual fraud losses in the United States are now US \$994 billion, up from its fraud annual cost estimate of US \$660 billion in 2006. KPMG (2006) highlights that fraud continues to be a major problem for organizations in Australia and New Zealand, with approximately half the organizations surveyed experiencing fraud annually and an average detection time of approximately one year.

The internal auditor's role in fraud risk management continues to gain prominence in contemporary governance frameworks. Deloitte (2005) emphasized this role in the Sarbanes-Oxley era, noting that "... given its prominence and potential magnitude, fraud ... needs to be on the radar screen of every internal audit function." Similarly, The IIA, the American Institute of Certified Accountants (AICPA), and the ACFE recently highlighted that internal auditors "should exercise professional skepticism when reviewing activities and be on guard for the signs of fraud" (IIA et al. 2008). While internal audit standards prescribe professional responsibilities related to fraud, little is known about the extent that internal auditors perceive responsibility for fraud detection and the factors that affect their sense of responsibility.

This report summarizes the results of an international study evaluating internal auditors' perceived responsibility for fraud detection. The objective was to evaluate the effect of fraud type and accountability pressure on internal auditors' perceived responsibility for detecting fraud and subsequent brainstorming performance. We evaluated whether perceived detection responsibility differs in fraudulent financial reporting, misappropriation of assets, and corruption schemes. Further, we tested the extent that accountability (i.e., asking internal auditors to identify themselves as a basis for future performance review) affects reports of fraud detection responsibility.

The instrument began by having the subjects place themselves into the role described in the scenario. They were then introduced to one of the three fraud schemes. Each fraud was designed to have the same effect on the financial statements. After describing the fraud, the participants filled out scales related to their perceived responsibility for detecting the fraud. We then asked the participants to allocate 100 percent responsibility for detecting this type of fraud among various constituents involved in fraud risk management. Next, we asked the participants a series of questions to assess income and experience effects. We then used two established scales to measure and control for individual differences in professional commitment and locus of control that could affect the respondents' perceived responsibility for fraud detection. The last part of the instrument asked the participants to respond to some demographic information.

Background

Internal Auditors' Fraud-related Standards

The IIA's Frequently Asked Questions repository states that "(internal audit) ... plays an important role in fraud detection" (IIA 2008). More specifically, The IIA's *International Standards for the Professional Practice of Internal Auditing (Standards)* provides specific authoritative guidance for internal auditors in the area of fraud. For example, Proficiency Standard 1210.A2 states:

Internal auditors must have sufficient knowledge to evaluate the risk of fraud and the manner in which it is managed by the organization, but are not expected to have the expertise of a person whose primary responsibility is detecting and investigating fraud.

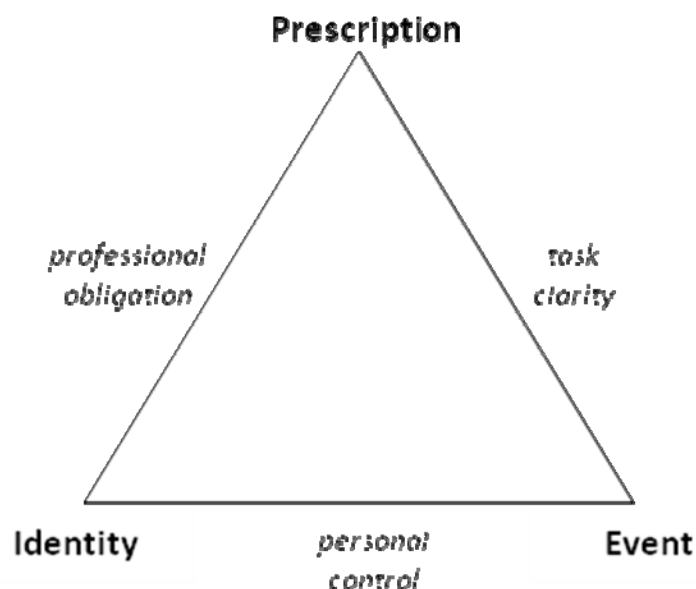
Proposed revisions to internal audit standards highlight a push to increase fraud standards for internal auditors. Furthermore, the new risk management standard (2120.A2) promotes that "the internal audit activity must evaluate the potential for the occurrence of fraud and how the organization manages fraud risk." These standards clearly link the internal audit function to fraud risk management. However, prescribed standards do not speak directly to the internal auditor's responsibility for detecting fraud. In addition, the extant research literature lacks evidence evaluating internal auditors' perceived responsibility for detecting fraud and how this sense of responsibility affects fraud-related performance.

The Triangle Model of Responsibility

While internal audit standards prescribe fraud detection responsibilities, and while changes to these standards have been proposed to make this responsibility more salient, little is known about the extent that internal auditors perceive themselves responsible for fraud detection, or the factors underlying their perceived responsibility. The triangle model of responsibility (Schlenker et al. 1994; Schlenker 1997) provides an integrative framework for evaluating perceived responsibility and links among accountability, responsibility, and performance. In this context, perceived responsibility connects individuals to performance standards and to events covered by those standards. Schlenker (1997, 241) suggests that responsibility is "the psychological glue that connects an individual to a set of prescriptions for conduct and to an event that is governed by those prescriptions."

The triangle model (see Figure 1) posits that perceived responsibility is a direct function of the strength of three psychological links between the three formative responsibility elements. Specifically, the model suggests that perceived responsibility in a situation depends on the extent that an individual (a) has a clear well-defined set of prescriptions (e.g., policies, rules, standards) that are considered applicable to the event (prescription-event link or task clarity), (b) feels bound by the prescriptions due to his or her identity (prescription-identity link or professional obligation) and (c) feels connected to the event with some sense of personal control over it (identity-event link or personal control).

Figure 1
Triangle Model of Responsibility



The prescription-event (task clarity) link is considered strong to the extent that the prescriptions are specified in advance, pertinent to the situation, not subject to alternative interpretations, and not in conflict with other prescriptions that might be applied in the situation. Alternatively, this link is weaker when prescriptions are ambiguous, conflicting, difficult to prioritize, or questionable in terms of relevance to the event. The prescription-identity (professional obligation) link is strong to the extent that prescriptions apply unambiguously to the individual. This link is weaker when prescriptions are ambiguous, unclear, or conflicting. The identity-event (personal control) link is strong when an individual intends to produce specific consequences and had the ability and freedom to do so. The link is weaker when an individual's will to act is diminished because action consequences are unforeseeable, accidental, or influenced by uncontrollable factors.

The Impact of Accountability Pressure

We tested the effects of accountability pressure on internal auditors' perceived responsibility for fraud detection. Schlenker (1997) defines accountability as being answerable to audiences for performing up to prescribed standards that are relevant to fulfilling obligations, duties, expectations, and other charges. The accounting literature (see DeZoort et al. 2006 for an overview of the accountability pressure literature in accounting) provides a large body of evidence showing that accountability pressure affects external auditors' decisions. For example, the auditing literature (DeZoort et al. 2006) shows that when external auditors are subjected to higher levels of accountability pressure, their materiality decisions tend to become more conservative. DeZoort and Harrison (2008) found that accountable external auditors report higher and more consistent responsibility for fraud detection than do anonymous external auditors.

The triangle model of responsibility suggests that accountability and responsibility are related but distinct constructs. For example, Schlenker (1997, 250) notes that "responsibility is not identical to accountability, rather, responsibility flows from accountability." This suggests that accountability is a type of pressure put on internal auditors by other parties (i.e., senior management, the audit committee, internal audit standards, etc.), and perceived responsibility is the internal response of the internal auditor

to these external pressures. To the extent that these external pressures highlight the importance of internal auditor responsibility for fraud detection, we expected accountability pressure to increase internal auditors' perceived responsibility for fraud detection.

The Impact of Fraud Type

We questioned whether perceived responsibility for fraud detection differs significantly across fraud type. Internal audit standards do not prescribe different detection responsibilities for fraudulent financial reporting, misappropriation of assets, and corruption frauds that have a direct and material effect on the financial statements. However, the research literature provides evidence suggesting that professionals' perceived responsibility for fraud detection differs across fraud type. DeZoort and Harrison (2008) found that external auditors perceive more responsibility for detecting fraudulent financial reporting than they do for misappropriation of assets and corruption. Furthermore, the ACFE (2008) report highlights that fraudulent financial reporting schemes have a higher median per fraud cost (US \$2 million) than misappropriation of assets (US \$375k) and corruption (US \$150k) schemes. However, this same report and others indicate that misappropriation of assets is much more prevalent and that internal auditors are much more likely to deal with this type of fraud in the workplace (ACFE 2008; KPMG 2003, 2006). Accordingly, we questioned whether internal auditors' perceived responsibility for detecting fraud would differ across fraud type.

Brainstorming Performance

Finally, we investigated the effects of accountability, fraud type, and responsibility on internal auditors' fraud-related brainstorming performance. Lynch (2006) linked internal auditor brainstorming to fraud risk management, suggesting that brainstorming efforts should help fraud detection. However, little is known about internal auditor brainstorming and how accountability, responsibility, and fraud type affect brainstorming performance.

The psychology literature (e.g., Schlenker et al. 1991; Tetlock 1985) provides theory describing the potential for accountability and responsibility to increase individual performance effort. The accounting literature (e.g., Chang et al. 1997; Cloyd 1997; DeZoort et al. 2006) draws on the psychology literature and provides empirical support for these theorized links. For example, DeZoort et al. (2006) evaluated auditors' materiality judgments and found that accountability pressure increased the participants' time spent on the tasks, justification length, and consideration of qualitative materiality factors. Further, DeZoort and Harrison (2008) found that external auditors' perceived responsibility for fraud detection was positively related to the number of fraud-related procedures brainstormed. Accordingly, we questioned whether internal auditors under accountability pressure would exert more effort by brainstorming more possible fraud detection procedures than anonymous internal auditors. We also tested whether internal auditors' perceived responsibility for fraud detection affects their brainstorming performance.

We also evaluated whether brainstorming effort varies across fraud type. While internal audit standards do not distinguish among (or prescribe different responsibilities for) fraudulent financial reporting, misappropriation of assets, and corruption schemes, the literature highlights several differences among fraud type that could lead to different perceived detection responsibilities. While fraudulent financial reporting cases have substantially higher average costs (ACFE 2008), several studies (e.g., ACFE 2008; KPMG 2003, 2006) indicate that asset misappropriation cases are much more prevalent. If internal auditors are likely to be more familiar with one type of fraud, this could impact their brainstorming effort. Accordingly, we tested whether internal auditor brainstorming varied across fraud type.

Research Method

Participants and Procedure

We collected data for this project during visits to 12 IIA meetings in Australia, Belgium, Canada, Mexico, and the United States between October 2007 and June 2008. Table 1 provides an overview of the 783 internal auditors who participated in the study.

Table 1
Demographics

	Australia	Belgium	Canada	Mexico	U.S.	Overall
Number of Participants	141	35	101	300	206	783
Number of Cities Represented	13	12	6	31	29	91
Professional Designation:						
No	40 (28%)	17 (49%)	29 (29%)	207 (69%)	80 (39%)	373 (48%)
Yes	101 (72%)	18 (51%)	72 (71%)	93 (31%)	126 (61%)	410 (52%)
Gender:						
Female	50 (37%)	10 (29%)	46 (48%)	78 (27%)	106 (51%)	290 (38%)
Male	84 (63%)	24 (71%)	50 (52%)	208 (73%)	100 (49%)	466 (52%)
% Time Spent:						
Assurance	70	67	51	N/A	69	67
Consulting	20	21	24		18	20
Other	10	9	25		13	13
Internal Audit Experience (Years)	10.35	7.86	9.94	8.00	8.57	8.84
Age	43.5	42.69	43.61	39.05	40.56	40.94
Education						
Bachelor's	76 (60%)	9 (28%)	68 (72%)	221 (79%)	131 (64%)	505 (68%)
Master's	51 (40%)	23 (72%)	26 (28%)	60 (21%)	69 (34%)	229 (31%)
Other					5 (2%)	5 (1%)
Industry						
Education	12 (9%)	0 (0%)	0 (0%)		7 (4%)	19 (4%)
Financial	20 (15%)	7 (21%)	14 (13%)		50 (27%)	91 (20%)
Government	48 (36%)	4 (12%)	20 (18%)		18 (10%)	90 (19%)
Health Care	4 (3%)	0 (0%)	0 (0%)	N/A	17 (9%)	21 (5%)
Insurance	1 (1%)	0 (0%)	3 (3%)		32 (17%)	36 (8%)
Manufacturing	1 (1%)	5 (15%)	7 (6%)		16 (9%)	29 (6%)
Retail	3 (2%)	1 (3%)	1 (1%)		4 (2%)	9 (2%)

	Australia	Belgium	Canada	Mexico	U.S.	Overall
Service	24 (18%)	9 (27%)	12 (11%)		13 (7%)	58 (12%)
Technology	1 (1%)	2 (6%)	0 (0%)		6 (3%)	9 (2%)
Utility	4 (3%)	0 (0%)	5 (5%)		9 (5%)	18 (4%)
Other	17 (13%)	5 (15%)	49 (44%)		15 (8%)	86 (18%)

In all of the participating countries except Mexico, more than half of the internal auditors had some type of professional designation. Certified Internal Auditor (CIA) or its equivalent was the most predominant designation. The highest percentage of participants who had a professional designation came from Australia (72 percent), and the lowest percentage was from Mexico (31 percent). A majority of the total respondents were male. These percentages also varied, with 73 percent of the respondents from Mexico being male, while 49 percent of the participants in the United States were male.

We also asked the participants in this study to estimate the amount of time they spent in assurance, consulting, and other. (Mexico was the first country in which we collected data, and we added this to our instrument after this data collection session.) In each of our country samples, the majority of the time spent by internal auditors was in assurance. Australia led the group with an average of 70 percent of the internal auditors' time being spent on assurance services; Canada had the lowest average with 51 percent. The next largest percentage of internal auditor time was spent in consulting activities. This ranged from a high of 24 percent in Canada, to a low of 18 percent in the United States.

The average age of the participants in our study was around 40 years old. The range was from Mexico, with an average age of 39.05, to Canada, which had an average age of 43.61. Our participants also were experienced internal auditors. The average number of years spent in internal auditing ranged from a low of 7.86 years in Belgium, to a high of 10.35 years in Australia. The majority of our participants ended their collegiate schooling with a bachelor's degree. However, a significant number of the participants from each country had a master's degree (some of the participants had postgraduate training). The percentages ranged from 21 percent for our Mexican sample, to 40 percent for our Australian sample. Table 1 indicates a wide range of industries represented in each country in which we collected data.

Research Scenario and Independent Variables

The research instrument asked participants to assume they are working in the internal audit department at High Quality Tools, Inc. (HQT). HQT had just completed its fiscal year. Company background information described the company as an average risk client with stable growth and financial health. Summary financial information provided unaudited account balances and performance results.

The study's two independent variables are *accountability* (ACCTBLTY) and *fraud type* (FRDTYPE). Fraud type was manipulated at three levels corresponding to the primary fraud types recognized in the audit and fraud literature (e.g., ACFE 2008), including *fraudulent financial reporting* (FFR), *misappropriation of assets* (MoA), and *corruption*. Panel A of the Appendix gives the instructions and the accountability manipulation. We used two accountability conditions: accountable and anonymous. Accountable participants were told that their responses were subject to review and asked to provide their names and e-mail addresses. Anonymous participants provided no personal information and were told that no effort would be made to link them to their responses. Thus, within each country of respondents, we had a 3X2 design (three types of fraud and two levels of accountability). The internal auditors who participated in this study from each country were randomly assigned to receive one of these six possible versions of our research instrument.

All three fraud types described a current period of fraud in an area where the participants were conducting internal audit work. The *fraudulent financial reporting* scheme described a situation where a member of management prematurely recorded expenses by purchasing unneeded supplies before year-end and immediately expensing them even though the supplies were not used. The *misappropriation of assets* scheme described a situation where a member of management stole cash from the company before year-end using a billing scheme. The *corruption* scheme described a situation where a member of management paid bribes to major distributors to ensure preferential treatment of the company's products. Participants were told that the manager committing the fraud was acting alone (no collusion) and that the fraud was unknown to other client personnel and auditors on the audit team. All three frauds schemes were written to overstate expenses by US \$100,000 to standardize the (10 percent) effect on net income. The entire research instrument is presented in the Appendix. Panel B gives the basic background information described above, and Panel C describes the three different fraud schemes.

The results in Table 2 show that the participants found the research scenario to be both realistic (overall mean = 74.37 on a 100-point scale anchored "Very unrealistic" and "Very realistic") and understandable (overall mean = 77.25 on a 100-point scale anchored "Very difficult to understand" and "Very easy to understand"). For the realism question, the mean response ranged from a low of 67.90 in Belgium to a high of 75.64 in Australia. For the understandability question, the mean response ranged from a low of 71.75 in Belgium to a high of 79.32 in the United States. The participants also found the fraud cases to be material (overall mean = 66.30 on a 100-point scale anchored "Very immaterial" and "Very material"). The country-specific results indicate that all countries found the frauds to be material, although Mexican participants (mean = 72.90) perceived higher fraud materiality than participants in the other countries. Almost one third (31 percent) of the participants reported they had seen a similar type of fraud in their jobs, with country-specific results ranging from a low of 17 percent in Canada to a high of 35 percent in Australia.

Table 2
Scenario Characteristics

	Australia	Belgium	Canada	Mexico	U.S.	Overall
Realistic	75.64%	67.90%	69.63%	74.20%	74.81%	74.37%
Understandable	76.14%	71.75%	78.04%	78.44%	79.32%	77.25%
Materiality	65.84	61.06	56.66	72.90	62.62	66.30
Seen Similar?						
No	81 (65%)	14 (74%)	59 (83%)	77 (52%)	131 (83%)	533 (69%)
Yes	44 (35%)	5 (26%)	12 (17%)	72 (48%)	26 (17%)	234 (31%)

Dependent Variables

After describing the fraud, we asked six questions related to the triangle model of responsibility links (see Appendix, Panel D). Specifically, two questions related to the prescription-identity (professional obligation) link, two questions related to the prescription-event (task clarity) link, and two questions related to the identity-event (personal control) link (Schlenker 1994). After assessing the triangle links,

we asked the participants to indicate how much overall responsibility they had for detecting this fraud during the engagement.

We also asked the participants to allocate responsibility for detecting this type of fraud among various groups involved in fraud risk management, including external auditors, internal auditors, management, internal accountants, and the board of directors and audit committee. Following these questions, we asked the participants to brainstorm as many audit procedures as possible that would be useful for detecting the fraud (see Appendix, Panel E).

We used several questions to assess participants' understanding of the fraud type, fraud effect on income, and accountability pressure they encountered in the study. For example, we asked participants to indicate whether their fraud case involved a supply expense scheme designed to prematurely recognize expense in the current year, the theft of cash using a billing scheme involving a shell company, or the payment of bribes to major distributors to ensure preferential treatment. We also asked participants to indicate whether they were anonymous in the study or if they were subject to review and feedback. Finally, we asked participants to specify whether the fraud increased income, decreased income, or had no effect. We exclude the responses of participants who missed any of these questions from subsequent analysis to control for possible measurement error problems due to misunderstanding in the case.

Finally, before gathering demographic information, we used two established scales to measure and control for individual differences in internal auditors' professional commitment and locus of control that could affect their perceived responsibility for fraud detection. We used the 15-item Professional Commitment scale (Aranya and Ferris 1984; Porter et al. 1974) to control for the possibility that individual identification with the profession will affect perceived responsibility for fraud detection. We used the 16-item Locus of Control scale (Spector 1988) to control for individual attribution differences because internal (external) attribution could be associated with higher (lower) perceived fraud detection responsibility. The Professional Commitment scale did not produce any significant results and is subsequently omitted from the rest of the analysis. Alternatively, we control for Locus of Control scale scores in subsequent analyses because we have a significant positive relation between internal locus of control and perceived responsibility for fraud detection.

Results

We present our results in three sections. First, we cover the impact of our manipulated independent variables (accountability and fraud type) on the internal auditors' reported perceived responsibility for fraud detection. Second, we use the triangle model of responsibility to further evaluate potential factors underlying internal auditors' perceived responsibility. Third, we discuss the impact of accountability and fraud type on the internal auditors' brainstorming performance. In each of these sections, we discuss the overall results first, followed by the individual country results. The individual country results are important because our overall statistical model indicates a highly significant country effect.

Perceived Responsibility for Fraud Detection

Table 3 gives the mean perceived responsibility judgments for detecting fraud across the six different cells of our experimental design by country and in total. The total sample of internal auditors reported a moderately strong perceived responsibility for detecting fraud (mean = 60.07 on 100-point scale anchored 0 = "No responsibility" and 100 = "Total responsibility"). Mexico had the highest mean perceived responsibility for detecting fraud (mean = 67.85). The United States had the next highest mean perceived responsibility for detecting fraud (mean = 59.93), followed by Canada (mean = 55.30), Australia (mean = 54.34), and Belgium (mean = 52.40).

Overall, we found that accountable participants reported higher perceived responsibility for detecting fraud (mean = 62.00) than anonymous participants (mean = 58.80). For example, accountable participants in Australia reported significantly higher perceived responsibility for detecting fraud than the anonymous participants (means = 59.69 and 48.82, respectively). Similar results emerged in Mexico (accountable mean = 71.00; anonymous mean = 66.55) and in the United States (accountable mean = 62.60; anonymous mean = 57.99). Alternatively, our Belgian and Canadian samples produced opposite results with anonymous participants reporting higher responsibility for detecting fraud than accountable participants.

With the overall sample, we find a higher mean perceived responsibility for detecting MoA fraud (mean = 62.03) than Corruption (mean = 59.55) and FFR (mean = 58.28). However, analysis of the specific country results reveals considerable variation in fraud type effects. For example, while Belgian, Canadian, and Mexican participants indicated higher perceived responsibility to detect MoA than FFR or Corruption, Australian participants reported lower perceived responsibility to detect MoA (mean = 50.07) than FFR (mean = 56.67) and Corruption (mean = 56.60). Internal auditors in the United States reported lower perceived responsibility to detect FFR (mean = 56.23) than MoA (mean = 61.67) and Corruption (mean = 61.29).

Table 3
Perceived Responsibility Results

		FFR	MoA	Corruption	Total
Overall	Anonymous	55.44	60.99	59.54	58.80
	Accountable	62.82	63.39	59.58	62.00
	Total	58.28	62.03	59.55	60.07
Australia	Anonymous	44.29	48.81	53.60	48.82
	Accountable	69.05	51.22	59.60	59.69
	Total	56.67	50.07	56.60	54.34
Belgium	Anonymous	48.33	65.83	53.00	55.58
	Accountable	40.75	65.00	37.50	48.62
	Total	45.30	65.42	45.85	52.40
Mexico	Anonymous	66.86	71.22	62.22	66.55
	Accountable	63.00	75.74	71.46	71.00
	Total	65.73	72.78	64.44	67.85
U.S.	Anonymous	53.72	57.47	62.52	57.99
	Accountable	60.28	67.04	59.71	62.60
	Total	56.23	61.67	61.29	59.93
Canada	Anonymous	52.33	58.50	57.06	55.96
	Accountable	60.00	60.45	42.00	54.19
	Total	54.77	59.36	51.85	55.30

Finally, the results indicate a significant positive relation between internal auditors' fraud materiality assessments and their perceived detection responsibility. Participants who assessed higher (lower) materiality for their fraud cases also tended to report higher (lower) responsibility for detecting the fraud. Interestingly, while all fraud types involved the same dollar amount (US \$100,000) and the same impact on net income (10 percent), follow-up testing revealed that the participants perceived materiality for the FFR case (mean = 58.81) was significantly lower than the materiality for the MoA and Corruption cases (means = 67.67 and 66.73, respectively).

Allocation of Detection Responsibility

The participants in this study were asked to allocate 100 percent responsibility for detecting this type of fraud among various constituents involved in fraud risk management, including management, internal accountants, internal auditors, external auditors, other employees, and the board of directors/audit committee. Table 4 reports the results overall and for each country in the study.

Table 4
Allocation of Fraud Detection Responsibility

	Australia	Belgium	Canada	Mexico	U.S.	Overall
Management	49.59%	32.35%	36.80%	32.03%	38.10%	38.63%
Internal Accountants	16.36%	22.65%	22.77%	22.35%	18.92%	19.97%
Internal Auditors	14.50%	15.59%	18.46%	21.82%	20.78%	19.13%
External Auditors	10.02%	12.76%	10.27%	9.09%	11.67%	10.36%
Other Employees	6.70%	7.06%	6.45%	4.56%	6.82%	6.10%
Board of Directors/ Audit Committee	2.05%	5.18%	3.54%	7.50%	2.14%	3.96%

Our results yield significant results among these responsibility groups. The overall results indicate that management is allocated the largest percentage (38.63 percent), which is approximately twice that of the next two groups. The internal accountants and the internal auditors were allocated the next highest percentages (19.97 percent and 19.13 percent, respectively). This is followed by the external audit function at 10.36 percent. The responsibility allocation percentages were rounded out with other employees (6.10 percent) and the board of directors/audit committee (3.96 percent).

The same general pattern of results can be seen with each country in our sample. Four distinct clusters emerged. The highest percentage allocation for fraud detection responsibility was to management. The next cluster is that of the internal accountants and the internal audit function. The third cluster is the external audit function. The final cluster consists of other employees and the board of directors/audit committee.

In an absolute sense, Australia allocated significantly more responsibility to management (49.59 percent) than did the other countries. This was followed by a slight decrease in the allocations to the internal accountants and the internal auditors. However, the same general clusters appeared.

Responsibility Triangle Links

We used six items to assess the responsibility triangle links. Specifically, two questions related to the prescription-identity (professional obligation) link, two questions related to the prescription-event (task clarity) link, and two questions related to the identity-event (personal control) link. The questions were adapted in first-person format from Schlenker et al. (1994), randomized in order, and measured using

100-point scales. Table 5 provides the mean response for each question. It also gives the total for each link and the mean for each link by country and total.

Table 5
Responsibility Triangle Link Results

	Australia	Belgium	Canada	Mexico	U.S.	Overall
PO #1	69.08	77.65	73.99	80.99	79.35	76.56
PO #2	55.22	53.00	51.10	67.83	62.30	60.23
PO Total	124.30	130.65	125.09	148.82	141.65	136.79
PO Mean	62.15	65.33	62.55	74.41	70.83	69.90
TC #1	62.29	58.85	64.32	74.19	64.54	66.48
TC #2	61.28	59.40	60.82	69.15	56.04	61.74
TC Total	123.57	118.25	125.14	143.34	120.58	128.22
TC Mean	61.79	59.13	62.57	71.67	60.29	64.11
PC #1	56.98	58.80	59.67	68.31	57.45	60.71
PC#2	63.84	64.45	66.34	78.17	70.28	70.19
PC Total	120.82	123.25	126.01	146.48	127.73	130.90
PC Mean	60.41	61.63	63.01	73.24	63.87	65.45

Where:

PO #1 = professional obligation (prescription-identity) link measured by asking “How relevant is detecting this fraud to your job?”

PO #2 = professional obligation (prescription-identity) link measured by asking “How obligated are you to detect this fraud?”

TC #1 = task clarity (prescription-event) link measured by asking “How clear is your authoritative guidance for detecting this fraud?”

TC #2 = task clarity (prescription-event) link measured by asking “How informed are you about the procedures you should follow to detect this fraud?”

PC #1 = personal control (identity-event) link measured by asking “How much control do you have as an auditor over your ability to detect this fraud?”

PC #2 = personal control (identity-event) link measured by asking “How much of a contribution do you believe you can make to detecting this fraud?”

To further understand the factors underlying internal auditors’ perceived responsibility for fraud detection we also performed a regression analysis to assess the importance of the links in the triangle model of

responsibility. The dependent variable in the model was the internal auditors' overall perceived responsibility judgment. The three independent variables in the model are the three links in the triangle model: professional obligation (the prescription-identity link), task clarity (the prescription-event line), and personal control (the identity-event link).

Table 6 provides regression coefficients for the overall model (all of the countries combined) and each individual country. In the overall sample, the internal auditor's sense of professional obligation and personal control over the fraud detection are significantly related to their reported detection responsibility, with professional obligation having the largest influence. These overall results mirror the Australian results. While all participating countries had a significant relation between professional obligation and perceived detection responsibility, Australia was the only country with a significant personal control link. The other four countries only had a significant professional obligation link.

Table 6
Responsibility Triangle Regression Results

	Australia	Belgium	Canada	Mexico	U.S.	Overall
Professional Obligation	.245*	.784*	.754*	.317*	.499*	.428*
Task Clarity	.118	.001	-.091	.073	.062	.067
Personal Control	.336*	-.044	.076	.234	-.155	.223*

* Significant at the .10 level.

Brainstorming Performance

Table 7 provides the mean number of audit procedures brainstormed across the six possible versions represented by three fraud types and two accountability conditions for all of the countries in our sample.

Table 7
Number of Procedures Brainstormed

		FFR	MoA	Corruption	Overall
Overall	Anonymous	1.68	2.26	1.82	1.92
	Accountable	2.50	2.88	2.51	2.65
	Total	1.99	2.53	2.07	2.21
Australia	Anonymous	2.11	2.47	1.84	2.14
	Accountable	1.67	3.59	3.11	2.79
	Total	1.89	3.00	2.46	2.46
Belgium	Anonymous	3.00	3.40	3.25	3.30
	Accountable	3.50	2.75	2.00	2.86
	Total	3.33	3.11	3.00	3.12
Mexico	Anonymous	1.42	1.62	1.63	1.57
	Accountable	2.60	2.73	2.08	2.47
	Total	1.75	1.98	1.74	1.82
U.S.	Anonymous	1.76	2.36	1.62	1.91
	Accountable	3.11	2.52	2.23	2.59
	Total	2.28	2.43	1.88	2.19
Canada	Anonymous	2.00	3.25	2.53	2.53
	Accountable	2.50	1.88	3.33	2.50
	Total	2.15	2.70	2.76	2.54

We analyzed the relationships among accountability, fraud type, perceived responsibility, and the number of fraud-related audit procedures brainstormed. The results indicate that accountable participants (mean = 2.65) brainstormed significantly more procedures than anonymous participants (mean = 1.92). Similar significant patterns emerge in Australia, Mexico, and the United States. For example, Australian internal auditors brainstormed more audit procedures in the accountable condition (mean = 2.79) than in the anonymous condition (mean = 2.14). We found no significant accountability effect in Belgium or Canada.

The results also reveal a significant overall effect for fraud type, with participants in the MoA group brainstorming more procedures (mean = 2.53) than participants in the FFR group (mean = 1.99) and Corruption group (mean = 2.07). The specific country results reveal that Australian internal auditors in the MoA group brainstormed more audit procedures (mean = 3.00) than in the Corruption (mean = 2.46) and FFR (mean = 1.89) conditions. Internal auditors in the United States brainstormed more audit

procedures in the MoA (mean = 2.43) and FFR (mean = 2.28) groups than in the Corruption group (mean = 1.88). Internal auditors in Belgium, Canada, and Mexico did not differ in the mean number of audit procedures brainstormed across the three different fraud types.

Finally, the overall results show a positive association between internal auditors' perceived responsibility and the number of fraud-related procedures brainstormed. Specific country analysis indicates that the responsibility-brainstorming link is most prevalent in Canada, Mexico, and the United States.

We also analyzed the types of procedures brainstormed by the participants. As the Table 8 results indicate, we developed six major categories of tests to classify the procedures listed by the participants, including tests of controls, analytical procedures, tests of transactions, tests of account balances, inquiry/interviews, and other. The participants brainstormed significantly more tests of controls than any other procedure type. This finding is robust across country, although the countries differ in the proportion of total procedures brainstormed that were tests of controls. Overall, the participants brainstormed similar numbers of analytical procedures and tests of transactions, although the relative proportion of each test type varied across country.

Table 8
Types of Procedures Brainstormed

	Australia	Belgium	Canada	Mexico	U.S.	Overall
Tests of Controls (e.g., authorization procedures, segregation of duties)	138 (42%)	32 (43%)	84 (33%)	142 (32%)	160 (33%)	556
Analytical Procedures (e.g., trend analysis, ratio analysis, budget vs. actual comparison)	58 (17%)	13 (18%)	55 (21%)	124 (28%)	122 (25%)	372
Tests of Transactions (e.g., vouching, tracing, cutoff tests)	79 (24%)	14 (19%)	64 (25%)	84 (19%)	105 (22%)	346
Tests of Account Balances (e.g., third-party confirmations, physical inventory)	26 (8%)	11 (15%)	23 (9%)	60 (14%)	59 (12%)	179
Inquiry/Interviews with Management & Other Employees	17 (5%)	0 (0%)	22 (9%)	15 (3%)	16 (3%)	70
Other (e.g., behavior analysis, vendor review)	14 (4%)	4 (5%)	8 (3%)	13 (3%)	18 (4%)	57

	Australia	Belgium	Canada	Mexico	U.S.	Overall
Total	332 (100%)	74 (100%)	256 (100%)	438 (100%)	480 (100%)	1580

Discussion

Overall, our international sample of internal auditors reported moderate perceived responsibility for fraud detection in a hypothetical fraud scenario that they found to be material, realistic, and understandable. Interestingly, we found substantial differences in perceived responsibility among our participating countries, with Mexican internal auditors reporting the highest detection responsibility followed by the United States, Canada, Australia, and Belgium. An analysis of the triangle model of responsibility links provides valuable insight into the factors underlying internal auditors' perceived fraud detection responsibilities. Our results show that internal auditors' professional obligation is more important in explaining perceived responsibility than the perceived clarity of the task or sense of personal control over the situation. The findings also highlight that the participants found fraud detection to be highly relevant to their jobs. The relevance question had the highest mean response for the triangle link questions overall and for each country in our sample.

The results also show a significant accountability effect where accountable participants reported higher perceived fraud detection responsibility than anonymous participants. This accountability finding was particularly strong in Australia, Mexico, and the United States. Interestingly, our Belgian and Canadian results revealed an opposite effect (i.e., anonymous participants reported higher mean perceived responsibility). However, these latter effects are statistically insignificant due to small sample size and small effect size, respectively.

The fraud type results indicate higher perceived responsibility for detecting misappropriation of assets than for fraudulent financial reporting and corruption. We again found substantial differences among our participating countries. For example, internal auditors in Belgium, Canada, and Mexico reported higher responsibility to detect misappropriation schemes than either fraudulent financial reporting or corruption schemes. Conversely, internal auditors in Australia reported a lower perceived responsibility to detect asset misappropriation compared to the other two fraud types. Finally, we found that internal auditors in the United States reported lower perceived responsibility to detect fraudulent financial reporting than they did for asset misappropriation and corruption. Ultimately, while internal audit standards do not distinguish among fraud type when prescribing fraud-related responsibilities, our evidence highlights the possibility that internal auditors around the world may perceive differences.

The results also reveal an interesting link between internal auditors' assessment of fraud materiality and their perceived responsibility for detection. While all of the frauds in the study were the same in terms of dollar amount and impact on net income, the participants varied in their assessment of the fraud's importance. Accordingly, we suggest the need for further study of how internal auditors assess fraud materiality, the factors (e.g., elements of a transaction, event, or activity) that affect their materiality assessments, and how materiality assessments (whether formal or informal) affect responsibility and performance.

The findings related to internal auditors' assigning fraud detection responsibility among various stakeholder groups were consistent across country. The participants clearly indicated that management has the highest percentage of fraud detection responsibility, followed by internal accountants and internal auditors. The internal audit respondents in this study allocated 78 percent of the responsibility to detect fraud to management, internal accountants, and internal auditors. This result was consistent across all of the countries in the sample. This internal auditor focus on management as the top detection responsibility group is consistent with findings using external auditors in DeZoort and Harrison (2008). Interestingly, despite relatively developed external audit standards (e.g., Statements on Auditing Standard No. 99 (SAS No. 99), Consideration of Fraud in a Financial Statement Audit) and a high degree of regulator and media scrutiny, the external audit function came in a relatively distant fourth in assigned responsibility. Our

results clearly indicate that internal auditors feel that the primary responsibility for detecting fraud is *within* rather than outside the organization.

Finally, our brainstorming results indicate that accountability pressure, fraud type, and perceived responsibility for detection affect the number of detection procedures brainstormed by the participants. Accountable auditors brainstormed more fraud detection procedures than anonymous auditors, suggesting that accountability pressure increases individual effort and output in a performance task. Further, the relatively high number of detection procedures brainstormed in the asset misappropriation case is consistent with the relative frequency of this fraud type compared to fraudulent financial reporting and corruption cases (ACFE 2008). The finding of a responsibility-brainstorming link is consistent with prior research involving external auditors (e.g., DeZoort and Harrison 2008) and highlights the importance of continued study of the effects of perceived responsibility on professional performance.

Implications

The study's results have a number of implications for internal audit practice, policy, and research. From practice and policy perspectives, the findings of moderate and varied perceived fraud detection responsibility among internal auditors highlight the need to clarify responsibilities for fraud detection (and overall fraud risk management), both within organizations (e.g., by audit committees and top management) and by internal audit standard setters. While the extant literature clearly establishes internal auditing as a critical governance mechanism with strong potential to contribute to fraud detection, this study highlights a lack of clarity in the area and the potential for varied perceived responsibilities among internal auditors to affect their detection efforts. Organizations should evaluate their internal auditors' specific fraud detection role and ensure that the function receives adequate resources to meet its responsibilities and ensure adequate corporate governance. Specifically, when considering fraud risk management within organizations, audit committees and top management should carefully consider internal auditing's role and the potential for varied perceptions to create confusion and undermine detection effectiveness. The responsibility triangle results also suggest the need for organizations and policymakers to consider ways to encourage internal auditors to develop their sense of professional obligation to increase their perceived responsibility for fraud detection. From a policy perspective, the results support The IIA's efforts to develop professional standards related to fraud. Strong standards need to be adopted that clearly delineate the increased responsibility that the internal audit function should have in detecting fraud in their organizations.

While it is encouraging to find that internal auditors in the study reported that the strong majority of fraud detection responsibility lies *within* rather than outside the organization (e.g., with external auditors), the strong emphasis on management's and internal accountants' detection responsibilities raises questions about whether these key internal stakeholder groups have the resources necessary to actually detect ongoing fraud within the organization. To the extent that the internal auditor's role involves fraud-related internal control management, formal fraud-related risk assessment, and related audit testing and evidence evaluation, we believe that organizations and policymakers should formally assign reasonable responsibility for fraud detection to internal auditors.

The brainstorming results provide evidence of relevant fraud detection expertise and highlight a critical link between perceived detection responsibility and fraud-related performance. While the external audit professional has formally embraced the importance of fraud-related brainstorming (e.g., SAS No. 99) in managing fraud risk, professional internal audit standards do not provide specific guidance in the area. Organizations and standard setters should consider the potential for internal auditor fraud-related brainstorming to enhance overall internal audit effectiveness. The study's brainstorming results also provide evidence that internal auditors have strong potential to add value to organizations by training and supporting directors and employees in both proactive and reactive fraud detection techniques. For

example, proactive fraud detection analytics (e.g., comparative financial statements, ratio analysis) are relatively easy and cheap tools that internal auditors can use and introduce for use by audit committees, management, and internal accountants.

The fraud type results indicate that internal auditors in different countries differed in their perceived responsibility to detect fraudulent financial reporting, misappropriation of assets, and corruption. Interestingly, existing professional standards related to fraud do not distinguish fraud types when prescribing internal auditor responsibilities in the area. Given the high risks associated with all three primary fraud types, we suggest the need for standard setters to consider developing explicit references to the primary types of fraud recognized by the ACFE (2008) and by external audit standards (e.g., SAS No. 99) to provide consistency and specificity that can improve overall fraud risk management. We also suggest that standard setters consider developing explicit fraud detection guidance for internal auditors that prescribes equal responsibility across fraud type. From a practice perspective, internal auditors' fraud-related training needs to emphasize all fraud types given their strong potential to damage organizations and stakeholders.

Finally, the significant accountability effects in the study highlight the potential for even simple, mild accountability to affect professionals' sense of responsibility for fraud detection. Specifically, finding that accountable internal auditors have higher perceived responsibility for fraud detection than anonymous internal auditors raises the potential for organizations and policymakers to impose simple accountability to help sensitize internal auditors and increase their involvement in fraud risk management. Audit committees and top management should consider ways to evaluate internal audit responsibilities and performance in the area of fraud risk management, including fraud detection. However, we emphasize the importance of providing internal auditors with the authority and resources needed to be effective in fraud detection when considering ways to increase their accountability in the area. From a research perspective, our simple experimental accountability treatment (where participants were told their responses were subject to review by the researchers) likely underestimated the effect of real-world accountability from within organizations and among policymakers. Future research is needed to identify the amounts and types of accountability that best impact internal auditors' perceived responsibilities and performance in fraud-related areas.

Ultimately, the countries and professionals in this study provided detailed insight into internal auditor responsibility for fraud detection. While professional standards continue to evolve in the area of prescribed fraud standards, we hope this report highlights the importance of complementing prescribed responsibilities with understanding of internal auditors' perceived responsibilities in the area of fraud detection. Specifically, we believe that continued efforts to understand internal auditors' perceived fraud responsibilities, the factors affecting their perceived responsibilities, and the effects of perceived responsibilities on their performance are critical.

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APPENDIX RESEARCH INSTRUMENT

Panel A: Instructions and Accountability Manipulation

Instructions

1. The pages that follow contain a case for your consideration. Each case includes summary background information and several questions for you to answer. Please assume you are working for your current company in your current position when evaluating the situation.
2. Please complete the materials in the order given without looking ahead through the pages. If you have any questions, please do not hesitate to ask.
3. **Your responses are subject to review by the researchers. Please print your name and e-mail address in the space below to facilitate review and feedback.**

Name (printed): _____

E-mail address: _____

OR

3. **You will be anonymous during this study. No effort will be made to link you to your responses on the following pages. To assure anonymity, please do not record your name or any other identifying information in the case materials.**

Panel B: Background Information

High Quality Tools, Inc. (HQT) is a tool manufacturer that sells to distributors and select retailers. HQT is a publicly held firm and has to file annual reports with governmental regulators. The company has had stable financial health and growth. Prior year results and current year planning indicate that HQT has effective internal controls and competent management and directors. The internal audit department, of which you are a member, has a good reputation.

Summary (Unaudited) Annual Financial Information

Revenues	US \$13 million
Pretax Income	US \$1.4 million
Net Income	US \$1.0 million
<u>EPS</u>	<u>US \$1.05/share (forecast \$1.04/share)</u>
A/R (net)	US \$1.0 million
Inventory	US \$2.8 million
Current Assets	US \$4.7 million
PP&E (net)	US \$3.9 million
Total Assets	US \$10.5 million
Current Liabilities	US \$2.0 million
Total Liabilities	US \$5.6 million
Total Equity	US \$4.9 million

Panel C: Fraud Treatments

(Fraudulent financial reporting treatment) During the fiscal year that you are about to audit, a new fraud has developed at HQT in an area where you will conduct audit work. Specifically, a member of HQT management prematurely recorded expenses by purchasing US \$100,000 of unneeded supplies before year-end and immediately expensed them as “Supplies Expense” even though the supplies were not used. The manager was substantially under budget for the year and bought the supplies to use up the current year’s budget and prematurely start recognizing next year’s expenses. The manager is acting alone (no collusion involved) and the fraud is unknown to other client personnel (e.g., management, internal accountants) or the external auditor of your firm.

(Misappropriation of assets treatment) During the fiscal year that you are about to audit, a new fraud has developed at HQT in an area where you will conduct audit work. Specifically, a member of HQT management has stolen US \$100,000 cash from the company before year-end using a billing scheme. The manager created a fictitious (shell) company, sent false invoices to HQT for services that were not provided, and then converted the cash paid to the shell company. The manager is acting alone (no collusion involved) and the fraud is unknown to other client personnel (e.g., management, internal auditors) and audit professionals within your firm.

(Corruption treatment) During the fiscal year that you are about to audit, a new fraud has developed at HQT in an area where you will conduct audit work. Specifically, a member of HQT management has paid US \$100,000 in bribes this year to major distributors to ensure preferential treatment for HQT products. The fraudulent disbursements were expensed using an account called “Consulting Fees.” The manager is acting alone (no collusion involved) and the fraud is unknown to other client personnel (e.g., management, internal auditors) and audit professionals within your firm.

Panel D: Triangle Model of Responsibility Link Questions

(adapted from Schlenker, 1994)

How relevant is detecting this fraud to your job? <i>PI (Professional Obligation) link #1</i>	- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	Not at All Relevant	Completely Relevant
How obligated are you to detect this fraud? <i>PI (Professional Obligation) link #2</i>	- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	Not at All Obligated	Completely Obligated
How clear is your authoritative guidance for detecting this fraud? <i>PE (Task Clarity) link #1</i>	- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	Not at All Clear	Completely Clear
How informed are you about the procedures you should follow to detect this fraud? <i>PE (Task Clarity) link #2</i>	- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	Not at All Informed	Completely Informed
How much control do you have as an internal auditor over your ability to detect this fraud? <i>IE (Personal Control) link #1</i>	- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	No Control	Complete Control
How much of a contribution do you believe you can make in detecting this fraud? <i>IE (Personal Control) link #2</i>	- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	No Contribution	Complete Contribution

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