

**The Effects of Fraud Type and Accountability Pressure on Auditor  
Fraud Detection Responsibility and Brainstorming Performance**

Todd DeZoort  
The University of Alabama  
Culverhouse School of Accountancy  
tdezoort@cba.ua.edu

Paul Harrison  
Wichita State University  
School of Accountancy  
paul.harrison@wichita.edu

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## **ABSTRACT**

This study examines the extent that fraud type and accountability pressure affect auditors' fraud detection responsibility and brainstorming performance. Specifically, we evaluate whether auditors perceive different responsibility for detecting fraudulent financial reporting, misappropriation of assets, and corruption schemes. We also test whether accountability increases perceived responsibility and brainstorming activity. Two hundred thirty auditors from two Big Four accounting firms participated in a 3x2 between-subjects experiment. As predicted, the results provide evidence that both fraud type and accountability pressure affect auditors' perceived responsibility for fraud detection and their brainstorming. Overall, the participants report higher perceived responsibility for detecting fraudulent financial reporting than for detecting misappropriation of assets or corruption. In addition, auditors under accountability pressure report higher fraud detection responsibility levels and have less variation in perceived responsibility than anonymous auditors. Accountable auditors also brainstormed more fraud detection procedures than anonymous auditors. Tests for mediation reveal that perceived responsibility mediates the relations between accountability and brainstorming and between accountability and commitment to fraud detection. Finally, we find evidence of a tenure effect where participants believe their fraud detection responsibilities increase as their experience with a client increases. We consider implications for research, practice, and policy in the context of the study's limitations.

**Keywords:** auditors; responsibility; accountability; fraud; brainstorming

# **The Effects of Fraud Type and Accountability Pressure on Auditor Fraud Detection Responsibility and Brainstorming Performance**

## **INTRODUCTION**

The fraud problem continues to plague organizations and stakeholders around the world. The Association of Certified Fraud Examiners (ACFE 2006) estimates that total annual fraud losses in the U.S. exceed \$650 billion and that fraud costs organizations five percent of their annual revenue. The external auditor's role in fraud risk management is well-documented in the literature. Professional auditing standards prescribe external auditors with providing "reasonable assurance" for detecting fraud.<sup>1</sup> However, little is known about the extent that external auditors perceive themselves to be responsible for detecting fraud in the financial statements.

The purpose of this study is to evaluate the effects of fraud type and accountability pressure on external auditors' perceived responsibility for fraud detection. Specifically, we examine whether auditors' perceived responsibility differs in fraudulent financial reporting, misappropriation of assets, and corruption cases.<sup>2</sup> We also test the extent that performance review pressure affects auditors' perceived fraud detection responsibility. The triangle model of responsibility (Schlenker et al. 1994, Schlenker 1997) provides a basis for evaluating task clarity, personal control, and professional obligation as factors underlying auditors' reported responsibility. Next, we evaluate whether accountability pressure and fraud type affect auditors' fraud-related brainstorming performance. Finally, we test the extent that perceived responsibility

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<sup>1</sup> Statement on Auditing Standard (SAS) No. 99, *Consideration of Fraud in a Financial Statement Audit*, (AICPA 2002) defines fraud as "an intentional act that results in a material misstatement in financial statements that are the subject of an audit" (para .05).

<sup>2</sup> The ACFE (2006) highlights fraudulent financial statements, asset misappropriation, and corruption as the three major categories of occupational fraud. While alternative fraud taxonomies exist (e.g., Albrecht, 2003; PwC, 2003), they provide fraud categories that are reasonably consistent with the ACFE framework.

mediates the accountability-brainstorming relation and the accountability-commitment to fraud detection relation.

This study is motivated in several ways. For example, we evaluate a possible expectations gap between auditors' prescribed and perceived fraud detection responsibilities. While professional auditing standards (i.e., SAS No. 99 and SAS No. 54) prescribe equal responsibilities for detecting frauds and illegal acts that have a direct and material effect on financial statements, the empirical literature lacks evidence related to whether auditors' perceived responsibility for fraud detection is the same across different fraud types with similar effects on financial reporting.

This study also is motivated by the fraud brainstorming literature emerging after SAS No. 99 (e.g., Carpenter 2007; Hoffman and Zimbelman 2007). The literature provides evidence that fraud-related brainstorming is an important part of fraud risk management.<sup>3</sup> SAS No. 99 requires brainstorming among audit team members to assess the potential for material misstatement due to fraud. However, the research literature provides relatively little evidence about the factors affecting brainstorming performance. This study provides initial evidence into how accountability, responsibility, and fraud type affect auditor brainstorming of audit fraud detection procedures.

Finally, this study extends the literature by considering the extent that responsibility mediates the relation between accountability and performance. Schlenker's (1994) responsibility theory suggests that responsibility "flows from accountability". While prior research (e.g., DeZoort et al. 2006; Hoffman and Patton 1997; Kennedy 1993) provides consistent evidence that

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<sup>3</sup> The need for fraud-related brainstorming also extends to audit committees (AICPA 2005) and internal auditors (Lynch 2006). For example, the AICPA (2005) suggests that audit committees brainstorm potential fraudulent financial reporting and misappropriation of assets when considering the possibility of management override of internal controls.

accountability affects auditor judgment and decision making (JDM), the literature lacks empirical evidence about the role of responsibility in understanding the accountability-performance relation.

Two hundred thirty auditors from two Big 4 accounting firms participated in an experiment to determine their perceived responsibility for fraud detection and their subsequent fraud brainstorming performance. We use a 3x2 between-subjects design that manipulates three types of fraud (fraudulent financial reporting, misappropriation of assets, and corruption) and two levels of accountability pressure (anonymous and review). The results provide evidence that both accountability pressure and fraud type affect auditors' perceived responsibility for fraud detection and their subsequent brainstorming performance. Overall, the participants report higher perceived responsibility for detecting fraudulent financial reporting than for detecting either misappropriation of assets or corruption schemes. In addition, accountable auditors report higher levels of fraud detection responsibility and have less variability in their perceived responsibility than the anonymous auditors. Similarly, accountable auditors brainstormed more fraud-related audit procedures during their individual brainstorming session than did the anonymous auditors. We also find that auditors' perceived responsibility for fraud detection mediates the relation between accountability pressure and brainstorming performance. Finally, the results indicate a positive relation between auditors' perceived fraud detection responsibility and their experience with a client.

The remainder of the paper is organized as follows. The next section uses responsibility theory and the fraud detection literature to develop the study's hypotheses related to fraud type and accountability effects. The third section details the research design and method. The fourth

section presents the study's results. The final section discusses the study's implications and limitations.

## THEORY & HYPOTHESIS DEVELOPMENT

### Auditors' Fraud Detection Responsibilities

Professional audit standards prescribe specific responsibilities for auditor fraud detection. SAS No. 1, *Responsibilities and Functions of the Independent Auditor*, (AICPA 1997) states that the auditor has a responsibility:

to plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether caused by error or fraud (para .02).

SAS No. 99 defines fraud as an “intentional act that results in a material misstatement in financial statements that are the subject of an audit” (para. 05).<sup>4</sup> The standard focuses on fraudulent financial reporting (intentional misstatement of the financial statements) and misappropriation of assets (theft of company assets) as two distinct fraud types for auditors to consider throughout the audit process. Corruption is covered by SAS No. 54, *Illegal Acts by Clients* (AICPA 1988).<sup>5</sup> SAS No. 54 states that auditors have the same “reasonable assurance” responsibilities for detecting illegal acts (e.g., bribes, kickbacks) that have a *direct* and *material* effect on the financial statements.<sup>6</sup>

Prior to SAS No. 99, auditor fraud detection standards suggested that traditional audit planning and internal control procedures would be sufficient to identify the information needed to assess the risk of fraud. SAS No. 99 expanded fraud risk assessment to require brainstorming

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<sup>4</sup> SAS No. 99 states that the primary factor distinguishing a fraud from an error is whether the underlying action that results in the financial statement misstatement is intentional or unintentional.

<sup>5</sup> SAS No. 99 highlights that corruption includes bribery and other illegal acts.

<sup>6</sup> The remainder of the paper discusses corruption assuming a direct and material effect on the financial statements. Issues related to corruption and other illegal acts that do not have both a direct and material effect are beyond the scope of this study.

procedures among audit team members to explicitly consider the potential for material misstatement due to fraud. The standard also added increased emphasis on inquiry as an audit procedure that increases the likelihood of fraud detection, expanded use of analytical procedures to gather information used to identify risks of the material misstatement due to fraud, and consideration of other information, such as client acceptance and continuance procedures, during the information-gathering phase.

### **The Triangle Model of Responsibility**

While professional audit standards have long prescribed fraud detection responsibilities, little is known about the extent that auditors perceive themselves responsible for fraud detection, the factors underlying perceived responsibility, and the link between perceived responsibility and JDM. 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).

[Insert Figure 1 here]

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.

We predict that perceived responsibility for fraud detection will differ significantly across fraud type. Specifically, despite identical prescribed detection responsibilities for fraudulent financial reporting, asset misappropriation, and corruption frauds that have a direct and material effect on the financial statements, we hypothesize that auditors will report higher levels of responsibility for detecting fraudulent financial reporting than for other fraud types. While fraudulent financial reporting cases are less common than asset misappropriation cases and corruption cases (ACFE 2006; KPMG 2003), evidence suggests they are far more risky and costly for auditors and accounting firms. For example, the ACFE (2006) reports that the median loss in fraudulent financial reporting cases is \$2 million, compared to \$538,000 for corruption

cases and \$150,000 for asset misappropriation cases. Similarly, KPMG (2003) reported that the average annual cost of fraudulent financial reporting exceeded \$250 million per entity, while asset misappropriation and corruption average annual costs were both below \$1 million.<sup>7</sup> High profile fraudulent financial reporting cases (e.g., Enron, WorldCom) also produced the largest legal consequences for accounting firms and motivated the passing of the Sarbanes-Oxley Act of 2002 (Beasley and Hermanson 2004; Palmrose 2007).

Collectively, we assert that these risk and cost factors increase the salience of fraudulent financial reporting detection responsibilities compared to alternative fraud types. The accounting and psychology literature (e.g., Case 2006; Haynes et al. 1998; Joe 2003; Plous 1993) provide strong evidence of a positive relation between information salience and impact on individual JDM. For example, Joe (2003) found that redundant press coverage increased the salience of company debt problems and consequently increase auditor pessimism about client going concern prospects. Similarly, Haynes et al. (1998) found a positive association between salience of client's interests and impact of client preference on auditor judgments in a proposed inventory write-down case. *Ceteris paribus*, this increased salience should lead to higher levels of perceived responsibility among auditors for fraudulent financial reporting than for asset misappropriation or corruption. Stated formally:

**H1a: External auditors will feel more responsible for detecting fraudulent financial reporting than they will for misappropriation of assets or corruption.**

Conversely, we expect auditors to perceive less responsibility for detecting corruption than for other types of fraud. Despite equal prescribed detection responsibilities and evidence suggesting the prevalence of corruption is similar to the prevalence of other major fraud types

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<sup>7</sup> KPMG (2003) interviewed executives from 459 public companies with annual revenue of at least \$250 million and from state and federal government agencies.

(PwC 2005), SAS No. 54 has a relatively low profile<sup>8</sup> and a unique “direct and material effect” qualification for detection compared to SAS No. 99. Accordingly, corruption detection responsibilities under SAS No. 54 should be less salient for auditors than SAS No. 99 detection responsibilities. Stated formally:

**H1b: External auditors will feel less responsible for detecting corruption than they will for fraudulent financial reporting or misappropriation of assets.**

### **The Impact of Accountability Pressure**

We also test the effects of accountability pressure on auditor perceived responsibility for fraud detection and judgment performance. 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 individual JDM.<sup>9</sup> For example, the accountability literature (e.g., Buchman et al. 1996; Cuccia et al. 1995; Hackenbrack and Nelson 1996) shows that when audience views are known, auditors tend to shift their attitudes and behavior to match the evaluative audience. However, the literature lacks evidence linking accountability to responsibility and JDM.

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”. To the extent that professional standards, regulation, and public sentiment highlight the importance of auditor

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<sup>8</sup> SAS No. 54 has not been altered since 1989.

<sup>9</sup> The psychology literature provides alternative explanations for why accountability pressure affects individual JDM, including social anxiety (e.g., Schlenker and Leary 1982), self-attention (e.g., Carver 1979), and politically-based impression management (e.g., Tetlock 1992).

responsibility for fraud detection, we expect accountability pressure to increase reports of perceived responsibility from auditors. Stated formally:

**H2: Accountable auditors will report more perceived responsibility for detecting fraud than anonymous auditors.**

### **Brainstorming Effort**

SAS No. 99 states that brainstorming sessions among audit team members should involve all audit team members (para. 17) and include discussion of how and where the entity's financial statements might be susceptible to material misstatement due to fraud, how management could perpetrate and conceal fraudulent financial reporting, and how assets could be misappropriated (para. 14). Ramos (2004) highlights that the brainstorming session should help the engagement team identify procedures that could be performed to detect fraud.

Auditor brainstorming requirements have motivated a number of studies focused on how brainstorming affects the link between fraud risk factors and auditor fraud risk assessments. For example, Carpenter (2007) found that auditor fraud risk assessments improved after fraud brainstorming sessions. Brazel et al. (2007) found that brainstorming session quality moderated the relation between fraud risk assessments and related audit testing. Carpenter et al. (2007) found evidence that group brainstorming produced higher fraud risk assessments than individual brainstorming and no brainstorming in cases where fraud was present. We extend this line of research to evaluate links among perceived responsibility, accountability, and brainstorming performance.

First, we predict that auditors' perceived responsibility for fraud detection will affect the number of fraud detection procedures brainstormed. The triangle model of responsibility posits positive relations between responsibility and ego involvement (the personal importance of an event to an individual), memory access, and commitment (binding of the self to something else

like goals and actions). Responsibility theory also provides that perceived responsibility increases self-engagement, which in turn affects individual determination to achieve goals. Schlenker (1997, 244) defines determination as a “resoluteness of purpose in which the actor is committed to prescribed goals and is unwavering in their pursuit despite obstacles, distractions, and temptations”. In the context of fraud detection, we predict that the positive link between perceived responsibility and determination should manifest itself in the number of fraud-related audit procedures brainstormed by auditors. Specifically, higher perceived responsibility for fraud detection among auditors should lead to greater brainstorming effort and more proposed audit procedures. Stated formally:

**H3a: Perceived responsibility for fraud detection will be positively related to the number of fraud detection procedures brainstormed.**

Second, we evaluate the effects of accountability pressure on auditors’ brainstorming efforts. The psychology literature (e.g., Schlenker et al. 1991; Tetlock 1985) emphasizes the potential for accountability pressure to increase performance effort. Specifically, when an evaluative audience’s specific views are unknown, individuals are more likely to increase their level of vigilance and self-critical thinking to make a positive impression on the evaluative audience (Lerner and Tetlock 1999; Tetlock 1992).<sup>10</sup> The accounting literature (e.g., Chang et al. 1997; Cloyd 1997; DeZoort et al. 2006) provides overall support for this theorized link between accountability pressure and participant effort. For example, DeZoort et al. (2006) evaluated auditors’ materiality judgments when the evaluative audience’s preferences were unknown and found that accountability pressure increased the participants’ time spent on the tasks, justification length, and consideration of

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<sup>10</sup> The accountability literature (e.g., Cuccia et al. 1995; Hackenbrack and Nelson 1996) provides evidence that accounting professionals attempt to align their performance with evaluator preferences when the evaluators’ views are known.

qualitative materiality factors. Similarly, Koonce et al. (1995) found that accountable auditors wrote more total justifications than anonymous auditors in an analytical procedures audit planning task.

We consider the accountability-brainstorming relation in a setting where the specific evaluative audiences' views about brainstorming are not known and no objective "right" answer exists for the number of procedures auditors should brainstorm.<sup>11</sup> Accordingly, auditors under accountability pressure should exert more effort when brainstorming possible fraud detection procedures than anonymous auditors. Stated formally:

**H3b: Accountable auditors will brainstorm more fraud detection procedures than anonymous auditors.**

Finally, we consider the effect of fraud type on auditors' brainstorming of fraud detection procedures. Given the relatively high level of training and audit method focus for auditors related to SAS No. 99 frauds (and related brainstorming provisions), auditors should have relatively high levels of task-specific knowledge related to detecting fraudulent financial reporting and asset misappropriation when compared to corruption. Prior literature highlights a link between knowledge and recall ability (Chase and Simon 1973; Ericsson and Smith 1991), with task-specific knowledge differences particularly apparent in relatively unstructured tasks (Libby 1995) like brainstorming.<sup>12</sup> This expertise difference considered with the relatively high risk, cost, and salience associated with fraudulent financial reporting leads us to predict auditors will brainstorm more fraud-related audit procedures in a fraudulent financial reporting case than in an asset

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<sup>11</sup> Professional audit standards (e.g., SAS No. 99) and supporting literature do not specify an optimal amount of brainstorming or number of risks or procedures to identify.

<sup>12</sup> Beasley and Jenkins (2003) highlight alternative types of brainstorming that vary in level of structure, including "open brainstorming", "round-robin brainstorming", and "electronic brainstorming". We use unstructured open brainstorming in this study so participants can share ideas as they occur without prompting or researcher-imposed rules.

misappropriation or corruption case. Conversely, the relative lack of risk, cost, salience, and expertise leads us to expect auditors to brainstorm fewer audit procedures in a corruption case. Stated formally:

**H3c: Auditors will brainstorm the most (least) fraud detection procedures in the fraudulent financial reporting (corruption) case.**

## **METHOD**

### **Design and Instrument**

We use a 3x2 between-subjects design with fraud type (FRDTYPE) manipulated at three levels (i.e., fraudulent financial reporting, misappropriation of assets, and corruption) and accountability (ACCTBLTY) manipulated at two levels (i.e., anonymous and accountable). Accountable participants provided their names and e-mail addresses, and were told that their responses were subject to review by the researchers. Participants in the anonymous group provided no personal information and were told that no effort would be made to link them to their responses.

The research instrument asked participants to assume they were about to start their first year auditing a publicly-traded tool manufacturer. Company background information (see Appendix A) 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 three fraud type manipulations correspond to the primary fraud types recognized by the Association of Certified Fraud Examiners (ACFE 2006). All three fraud treatments described a current period fraud in an area where the participants will conduct audit work. The fraudulent financial reporting scheme described a situation where a member of management prematurely recorded expenses by purchasing unneeded supplies prior to year-end and

immediately expensing them even though none of the supplies were used. The asset misappropriation scheme described a situation where a member of management stole cash from the company prior to 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 is unknown to other client personnel and auditors on the audit team. All three frauds schemes were written to overstate expenses by \$100,000 to standardize the effect on net income.<sup>13 14</sup>

After describing the fraud, we asked six questions related to the triangle model of responsibility links (see Appendix A, Panel C). Specifically, two questions related to 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) and randomized in order.<sup>15</sup> After assessing the triangle links, we asked the participants to indicate how much overall responsibility they had for detecting this fraud during the engagement, how committed they are to detecting this type of fraud during their audit work, and how they assessed the materiality of the fraud. We also asked the participants to allocate 100 percent responsibility for detecting this type of fraud among various constituents involved in fraud risk management, including the external audit team, management, internal accountants, the board of directors and audit committee, and internal auditors.

Next, we asked the participants a series of question to assess income and experience effects. Specifically, participants were asked to indicate the impact of the fraud on net income

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<sup>13</sup> Nelson et al. (2003) reviewed 515 earnings management efforts reported by auditors and found that 31 percent of attempts reported were income-decreasing.

<sup>14</sup> The \$100,000 fraud represented 10 percent of net income, 7 percent of pretax income, and 1 percent of total assets.

<sup>15</sup> Schlenker (1994) wrote the link questions in third person format.

and whether the impact on income affects their detection responsibility. We also asked participants to indicate the likelihood that they would detect this fraud if they were conducting normal audit tests in this area and whether their responsibility for detecting this fraud would change if this was their second year on the engagement rather than their first year. Following these questions, we asked the participants to brainstorm as many audit procedures as possible that would be useful for detecting the fraud.

Finally, prior to gathering demographic information, we used two established scales to measure and control for individual differences in professional commitment and locus of control that could affect 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. These two scales did not produce any significant results and are subsequently omitted from the rest of our analyses.<sup>16</sup>

### **Participants and Procedure**

Two Big 4 accounting firms provided a total of 294 auditors from 49 different cities/offices in the United States to participate in the study. The participants included 174 Associates (mean experience = 1.78 yrs; SD = 0.45 yrs), 96 Experienced Associates (mean experience = 2.08 yrs; SD = 0.46 yrs) and 24 Senior Associates (mean experience = 3.25 yrs; SD

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<sup>16</sup> The coefficient alpha was 0.83 for the Professional Commitment scale and 0.82 for the Locus of Control scale, indicating high reliability for both scales.

= 1.34 yrs).<sup>17</sup> A majority (53%) of the participants were male and almost half (45%) had earned a graduate degree. One-third (32%) of the participants were CPAs.

We administered the experiment at regional and national training sessions within the participating firms. Contact personnel from both firms reviewed and approved the study and the instrument prior to administration.<sup>18</sup> The participants took an average of 22 minutes to complete the instrument, with no significant differences in completion time found among treatment groups or experience levels.

## RESULTS

### Manipulation Checks

We used two multiple-choice questions to assess the effectiveness of the fraud type and accountability manipulations. First, we asked the participants to indicate whether the fraud in their 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. Two hundred seventy-seven participants (91%) passed this manipulation check question. Second, we asked the participants to indicate whether they were anonymous or whether their responses were subject to review and feedback. Two hundred forty-six participants (81%) passed this manipulation check question. A total of 64 participants missed at least one of the two manipulation check questions and were subsequently excluded from the analysis, leaving 230 participant observations for the remainder of the analysis.<sup>19</sup>

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<sup>17</sup> The three auditor experience groups had significantly different mean years of experience ( $p < 0.01$  for all comparisons).

<sup>18</sup> The Institutional Review Board for the Protection of Human Subjects from both universities approved all research materials prior to conducting the study.

<sup>19</sup> The study's primary results are not affected by including the 64 participants who failed the manipulation check.

The participants found the case to be both realistic (mean = 75.54, SD = 15.14 on a 100-point scale with 0 = “not at all realistic” and 100 = “extremely realistic”) and understandable (mean = 80.29, SD = 14.59 on a 100-point scale with 0 = “very difficult to understand” and 100 = “very easy to understand”). In addition, the participants in all three fraud conditions found the fraud to be material. Using a scale anchored “highly immaterial” (coded = 0) and “highly material” (coded = 100), the overall mean of 65.53 is significantly higher than the scale midpoint ( $t = 8.98, p < 0.001$ ).<sup>20</sup> The results also indicate significant differences in perceived materiality across fraud type ( $p = 0.04$ ). Post hoc comparisons reveal that the corruption case has a higher perceived materiality (mean = 70.72 on a 100-point scale anchored “highly immaterial” and “highly material”) than the fraudulent financial reporting case (mean = 60.12,  $p = 0.04$ ). The misappropriation of assets mean (67.12) does not differ significantly from the other two means. Given this difference, we control for perceived materiality in subsequent analyses.

### **Perceived Responsibility for Fraud Detection**

The ANOVA results for fraud type in Table 1, Panel A, reveal significant differences among the three fraud type (FRDTYPE) groups ( $F = 3.99, p < 0.01$ ). As predicted in H1a, the Table 1, Panel B results show that participants' perceived responsibility for detecting the fraudulent financial reporting (mean = 65.44) is significantly higher ( $p < 0.05$ ) than participants in the misappropriation of assets case (mean = 57.71) and the corruption case (mean = 56.60). However, the insignificant difference ( $p = 0.87$ ) between the misappropriation of assets case and the corruption case does not support H1b.

The results in Table 1, Panel A, also provide support for our H2 prediction of a positive accountability effect on perceived responsibility. Specifically, the ANOVA results for ACCTBLTY reveal a significant difference between the accountable and anonymous groups ( $F =$

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<sup>20</sup> We report two-tailed p-values throughout the paper unless indicated otherwise.

15.58,  $p < 0.001$ ). As predicted, the descriptive results in Panel B show that accountable participants reported more responsibility for detecting the fraud (mean = 67.03; SD = 19.22) than the anonymous participants (mean = 55.11; SD = 25.10). Further, consistent with DeZoort et al. (2006), we find that accountability pressure affected variation in perceived responsibility. Levene's test for variance equality reveals that the accountable participants had significantly less variation in perceived responsibility than the anonymous participants ( $F = 11.65$ ;  $p = 0.001$ ).

Insert Table 1 here

### Responsibility Triangle Results

To better understand the factors underlying the participants' perceived sense of responsibility for fraud detection, we estimate the following OLS regression to assess the formative links in the triangle model of responsibility:

$$\text{RESPBLTY} = \beta_0 + \beta_1 \text{PI} + \beta_2 \text{PE} + \beta_3 \text{IE} + \beta_4 \text{ACCTBLTY} + \beta_5 \text{FRDTYPE} + \beta_6 \text{EXPER} + \beta_7 \text{MTRLTY} + \varepsilon$$

where:

- PI = Prescription-Identity (Personal Obligation) link
- PE = Prescription-Event (Task Clarity) link
- IE = Identity-Event (Personal Control) link
- ACCTBLTY = 1 if accountable, 0 if anonymous
- FRDTYPE = 1 if fraudulent financial reporting, 2 if misappropriation of assets treatment, 3 if corruption.
- EXPER = 1 if Associate, 2 if Experienced Associate, and 3 if Senior Associate
- MTRLTY = perceived materiality of fraud measured with a 100-point scale anchored "highly immaterial" and "highly material"

The results in Table 2 show that after controlling for accountability pressure, fraud type, experience, and perceived fraud materiality, the triangle model's PI and IE link are significant ( $p \leq 0.001$ ). Specifically, the significant PI and IE link results indicate that the auditors' sense of professional obligation and personal control are positively related to their overall perceived

responsibility for detection. The PE (task clarity) link is not significantly related to responsibility ( $p = 0.886$ ).<sup>21</sup>

Insert Table 2 here

Next, we asked the participants to assign responsibility for detecting the fraud in their case. Specifically, the participants allocated 100 percent responsibility among management, internal accountants, other company employees, the board and audit committee, in-house internal auditors, and the external audit team. MANOVA results indicate there are no significant differences ( $p > 0.10$  in all cases) for percentage responsibility assigned to the various responsibility groups across fraud type and accountability level. However, the t-test results in Table 1, Panel C, reveal differences between responsibility groups. For example, assigned responsibility for management is significantly higher than for all other groups ( $p < 0.001$  for all comparisons). Interestingly, the participants assign significantly more responsibility to internal auditors than they do to themselves ( $p = 0.05$ ). In addition, the responsibility assigned to the board/audit committee is significantly lower than for all other groups ( $p < 0.001$  for all comparisons).

### **Brainstorming Results**

We estimate the following regression to test the predicted relation between perceived responsibility and number of fraud-related audit procedures brainstormed:

$$\text{BRAINSTRM} = \beta_0 + \beta_1 \text{RESPBLTY} + \beta_2 \text{ACCTBLTY} + \beta_3 \text{FRDTYPE} + \beta_4 \text{EXPER} + \beta_5 \text{MTRLTY} + \varepsilon$$

where

BRAINSTRM = number of fraud-related audit procedures brainstormed.

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<sup>21</sup> We used variance inflation factors (VIFs) to evaluate the potential for multicollinearity problems. The VIF scores are less than 2.0 for all variables in all regression models reported, suggesting that multicollinearity does not have a significant effect on the results.

The regression results in Table 3, Panel A, support H3a by showing a significant positive relation between perceived responsibility and number of audit procedures brainstormed ( $t = 1.82$ ,  $p = 0.03$ ). The Table 3 results also support H3b by showing that the number of audit procedures brainstormed increased significantly with the level of accountability pressure ( $t = 2.23$ ,  $p = 0.01$ ). Specifically, the cell mean results in Panel B, report that accountable auditors brainstormed more audit procedures (mean = 1.67 procedures) than anonymous auditors (mean = 1.18 procedures).

The results also provide support for H3c. As expected, we find a significant negative relation between fraud type and number of procedures brainstormed ( $t = -3.21$ ,  $p = 0.001$ ). The descriptive cell data in Table 3, Panel B, indicates that the most brainstorming procedures occurred in the fraudulent financial reporting condition (mean = 1.76 procedures), followed by the misappropriation of assets (mean = 1.39 procedures) and the corruption condition (mean = 0.97 procedures). Post hoc comparisons indicate that the number of brainstorming procedures for fraudulent financial reporting (corruption) is significantly higher (lower) than for the other fraud types ( $p \leq 0.03$  for all comparisons).

Table 3, Panel C, provides a ranked frequency list of the primary tests brainstormed by the participants. The results indicate that the participants brainstormed a wide variety of risk assessment procedures, tests of controls, and substantive procedures. The brainstormed tests of transactions focus heavily on specific journal entry testing (e.g., vouching, tracing) involving supporting documentation ( $n = 88$ ). A majority of the brainstormed analytical procedures involve trend analysis ( $n = 62$ ) and budget vs. actual comparisons ( $n = 24$ ).<sup>22</sup> The detailed tests of balance procedures focus on third-party confirmations ( $n = 31$ ), search for unrecorded liabilities ( $n = 16$ ), and cutoff testing ( $n = 12$ ). The tests of controls focus on authorization tests

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<sup>22</sup> We consider analytical procedures and fraud inquiries as distinct categories because the participant responses often made it difficult to categorize these tests specifically as risk assessment procedures, tests of controls, and/or substantive procedures.

(n = 35) and segregation of duties (n = 18). Finally, 55 participants listed specific fraud inquiries of management and other client personnel.

Insert Table 3 here

### **Mediation Analysis**

Prior research provides consistent evidence of a relation between accountability and auditor JDM (DeZoort et al. 2006; Hoffman and Patton 1997; Kennedy 1993). Given Schlenker's (1997) assertion that that responsibility "flows from accountability", we evaluate the extent that perceived responsibility mediates the relation between accountability and brainstorming performance. Similar to other accounting studies (e.g., Holt and DeZoort 2007; Hodge et al. 2006; Jackson and Hatfield 2005), we estimate the following three equations using Baron and Kenny's (1986) three-step regression approach to test for mediation:

$$\text{MEDIATOR}_i = \alpha_0 + \alpha_1 \text{IV}_i + e_i \quad (1)$$

$$\text{DV}_i = \beta_0 + \beta_1 \text{IV}_i + e_i \quad (2)$$

$$\text{DV}_i = \delta_0 + \delta_1 \text{IV}_i + \delta_2 \text{MEDIATOR}_i + e_i \quad (3)$$

Baron and Kinney (1986) specify that the first step in establishing mediation is to have a significant relation between the independent variable (IV) and the mediator variable in equation (1). Second, the IV must significantly affect the dependent variable (DV) in equation (2). Third, the mediator must be significantly related to the dependent variable in equation (3) while the relation between the independent variable and the dependent variable must be weaker in equation (3) than in equation (2).

The results in Panels A and B of Table 4 provide evidence of responsibility-based mediation. The results indicate that perceived responsibility mediates the relation between accountability and brainstorming performance, helping explain the H3b finding that accountable

participants brainstorm more fraud-related procedures than anonymous participants. The equation (1) results indicate a significant positive relation between accountability pressure and perceived responsibility ( $\alpha_1 = 9.91$ ;  $p\text{-value} < 0.001$ ). The equation (2) results show that accountability pressure is positively related to brainstorming output ( $\beta_1 = 0.52$ ;  $p\text{-value} = 0.06$ ). Finally, the equation (3) results reveal a significant positive relation between perceived responsibility and brainstorming output ( $\delta_2 = 0.35$ ;  $p\text{-value} = 0.05$ ) and an insignificant relation between accountability pressure and brainstorming output ( $\delta_1 = 0.004$ ;  $p\text{-value} = 0.23$ ) that is weaker than in equation (2). The Sobel test statistic (Baron and Kinney 1986) provides evidence of mediation ( $z = 1.75$ ;  $p\text{-value} = 0.08$ ).<sup>23</sup>

Insert Table 4 here

## Supplemental Results

We asked a variety of supplemental questions to better understand the participants and the primary results. For example, we asked participants to assess the likelihood that they would detect the fraud if they were conducting normal audit tests in the area. Using a 100-point scale anchored “no chance of detection” and “absolutely would detect” (assigned scale value range = 0-100 for analysis), the participants indicate moderate levels of confidence in detecting the fraud (overall mean = 56.86;  $SD = 21.58$ ). No significant between-group differences emerge for accountability pressure and fraud type (all main effect and interaction  $p\text{-values} > 0.15$ ).

We also assessed whether participants believe their responsibility changes as they gain experience with a client. While SAS No. 99 provides that fraud detection responsibilities are

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<sup>23</sup> We also tested whether perceived fraud detection responsibility mediates the relation between accountability pressure and participants’ commitment to fraud detection (measured using a 100-point scale anchored “Not at all committed” and “completely committed”). Mediation test results again provide evidence that perceived responsibility is a significant mediator (Sobel test  $z = 3.45$ ;  $p\text{-value} < 0.001$ ).

consistent across experience level, we questioned whether auditors would perceive more responsibility as their experience with a client increased. Accordingly, we used a 100-point scale anchored “far less responsibility” and “far more responsibility” (assigned scale value range = -50 to 50 for analysis) to measure whether participants believe their responsibility for detecting the fraud would change if they were in their second year on the engagement rather than in their first year. Interestingly, the results indicate a perceived difference in detection responsibility over time. Specifically, the overall mean of 17.03 (SD = 16.97) is significantly greater ( $p < 0.001$ ) than the scale midpoint of zero, suggesting that participants perceive their responsibility increases over time. Again, no significant differences emerge between treatment groups (all main effect and interaction p-values  $> 0.46$ ).

## **DISCUSSION**

Overall, the results provide evidence that fraud type and accountability pressure affected auditors’ perceived responsibility for fraud detection. As predicted, participating auditors report significantly different levels of responsibility for detecting fraudulent financial reporting, asset misappropriation, and corruption frauds that had direct and material financial statement effects. Specifically, contrary to professional standards, auditors report more responsibility for detecting fraudulent financial reporting than for asset misappropriation or corruption. Supplemental analysis of the triangle model links reveal that personal control and professional obligation are positively related to overall perceived responsibility for detection. Alternatively, we find that task clarity is not significantly related to perceived responsibility.

The accountability results indicate that accountable auditors report a higher level of fraud detection responsibility and have less variation in perceived responsibility than anonymous auditors. The results also show that accountable auditors brainstorm more audit procedures to

detect the fraud that anonymous auditors. Finally, we find that perceived detection responsibility mediates links between accountability pressure and auditor brainstorming and between accountability pressure and commitment to fraud detection.

These results have a number of implications for research, policymaking, and practice. From a research perspective, our findings extend the fraud literature by highlighting the importance of perceived responsibility in understanding fraud-related JDM. While the extant fraud detection literature focuses on prescribed standards for responsibility (e.g., SAS No. 99), we find that future fraud-related research needs to consider the importance of perceived responsibility for detection. For example, our results extend the brainstorming literature by showing the potential for brainstorming performance to be affected by fraud type, accountability, and perceived responsibility. The findings also extend the accountability literature by providing empirical evidence that accountability and responsibility are distinct constructs and that perceived responsibility mediates the accountability-brainstorming relation. We suggest that future experimental research further evaluate the distinction between responsibility and accountability and consider the impact of perceived responsibility when evaluating accounting professionals' JDM and performance effectiveness and efficiency.

From policy and practice perspectives, our results highlight the need to consider the gap between prescribed and perceived responsibilities when considering the efficacy of fraud-related standards and fraud detection processes (e.g., risk assessment, tests of controls, substantive tests). Our review of the extant literature related to policy and practice suggests an implicit assumption that accounting professionals internalize fraud detection responsibility standards as prescribed. However, this study's results indicate the need for policymakers and accounting professionals to

evaluate this assumption and consider potential implications of a “responsibility gap” in future policymaking and training sessions.

The results should be considered in the context of the study’s limitations. For example, we used only income-decreasing fraud cases in this study to provide consistency and realism across fraud type. Ultimately, while we believe this approach provides more conservative results than would be found with income-increasing fraud cases, future research is needed to address whether specific income effect affects this study’s findings.

Next, the study’s use of only one level of accountability pressure suggests the need for future research to better understand how differential accountability strength and complex accountability (to more than one evaluative audience) affect perceived responsibility and performance. DeZoort et al. (2006) provide evidence that accountability pressure strength matters when considering auditor JDM. While our relatively weak level of accountability (i.e., review) pressure produced significant results, alternative levels of accountability strength (e.g., justification, feedback) could produce important additional evidence about the responsibility gap and its implications for practice.

Finally, we highlight the need for additional research to specify the effects of differing perceived responsibility on audit effectiveness and efficiency. For example, our brainstorming task involved only individual effort to brainstorm potential fraud detection audit procedures. Brainstorming sessions in practice involve group interaction and do not necessarily involve ex ante individual brainstorming of specific audit procedures. Accordingly, future research is needed to evaluate the generalizability of the findings here to increase understanding of the link between perceived responsibility and performance.

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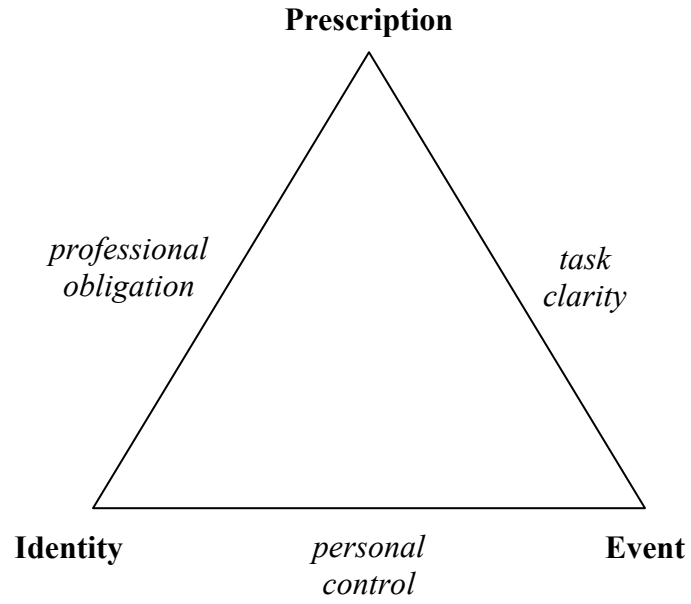
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**FIGURE 1**  
**Triangle Model of Responsibility**  
(Schlenker et al. 1994)



**TABLE 1**  
**Overall Responsibility Results**  
**(n = 230)**

**Panel A: ANOVA Results for *RESPBLTY***

Variable		F	2-tail p-value
Model		5.64	<0.001
<b>Test Variables</b>			
FRDTYPE	H1	3.99	0.01
ACCTBLTY	H2	15.58	<0.001
ACCTBLTY x FRDTYPE		1.10	0.33
<b>Control Variables</b>			
EXPER		4.82	0.02
MTRLTY		8.37	0.004

**Panel B: Descriptive Statistics**

ACCTBLTY		FRDTYPE			Overall
		FFR	MoA	Corruption	
Anonymous	<b>Mean</b>	<b>62.59</b>	<b>52.67</b>	<b>49.73</b>	<b>55.11</b>
	SD	25.22	27.38	21.13	25.10
	N	46	43	46	135
Accountable	<b>Mean</b>	<b>69.42</b>	<b>64.12</b>	<b>67.64</b>	<b>67.03</b>
	SD	17.63	22.44	17.04	19.22
	N	33	33	29	95
Overall	<b>Mean</b>	<b>65.44</b>	<b>57.71</b>	<b>56.60</b>	<b>60.04</b>
	SD	22.50	25.80	21.42	23.55
	N	79	76	75	230

**Legend:**

*RESPBLTY* = perceived overall responsibility for fraud detection on 100-pt scale anchored “no responsibility” (coded as 0) and “total responsibility” (coded as 100).

ACCTBLTY = 1 if accountable, 0 if anonymous

FRDTYPE = 1 if Fraudulent Financial Reporting (FFR), 2 if Misappropriation of Assets (MoA) treatment, 3 if Corruption.

EXPER = 1 if Associate, 2 if Experienced Associate, and 3 if Senior Associate

MTRLTY = perceived materiality of fraud measured with a 100-point scale anchored “highly immaterial” and “highly material”

**TABLE 1 (cont.)**  
**Overall Responsibility Results**

**Panel C: Allocation of Detection Responsibility<sup>@</sup>**

	Mean (%)	SD
Management	37.78 ****	23.26
Internal Auditors	20.56 *	15.30
External Auditors	17.26	16.82
Internal Accountants	15.79 ****	14.77
Other Employees	5.65 ****	7.52
Board/Audit Committee	3.21	4.74

<sup>@</sup> Participants were asked to "allocate (%) responsibility for detecting this type of fraud".  
\*\*\*\*, \* indicates significant between group differences at the 0.001 and 0.05 levels, respectively.

**TABLE 2**  
**Responsibility Triangle Link Results**

**Panel A: Regression Results for *Responsibility***

$$\text{RESPBLTY} = \beta_0 + \beta_1 \text{PI} + \beta_2 \text{PE} + \beta_3 \text{IE} + \beta_4 \text{ACCTBLTY} + \beta_5 \text{FRDTYPE} + \beta_6 \text{EXPER} + \beta_7 \text{MTRLTY} + \varepsilon$$

Variable	Predicted Sign	Coefficient	t-stat	p-value
Intercept	?	5.37	0.83	0.41
<i>Test Variables</i>				
PI	+	0.27	7.92	<0.001
PE	+	-0.01	-0.13	0.89
IE	+	0.16	3.39	0.001
<i>Control Variables</i>				
ACCTBLTY	+	9.20	4.09	<0.001
FRDTYPE	-	-3.26	-2.39	0.01
EXPER	-	-1.59	-0.93	0.35
MTRLTY		0.01	0.20	0.84
Observations		230		
F (p-value)		35.24	<0.001	
Adj R <sup>2</sup> %		52.10		

One-tail p-values reported for significant coefficients in the predicted direction.

**Legend:**

- PI = prescription-identity (professional obligation) link measured as the sum of the two 100-point scale items related to detection relevance and obligation.
- PE = prescription-event (task clarity) link measured as the sum of the two 100-point scale items related to authoritative guidance clarity and knowledge of procedures.
- IE = identity-event (personal control) link measured as the sum of the two 100-point scale items related to ability to control and contribute to detection.

**All other variables are as defined in Table 1.**

**TABLE 3**  
**Brainstorming Results**

**Panel A: Regression Results for *Number of Procedures Brainstormed***

$$\text{BRAINSTRM} = \beta_0 + \beta_1 \text{RESPBLTY} + \beta_2 \text{ACCTBLTY} + \beta_3 \text{FRDTYPE} + \beta_4 \text{EXPER} + \beta_5 \text{MTRLTY} + \varepsilon$$

Variable	Predicted Sign	Coefficient	t-stat	p-value*
Intercept	?	1.80	4.09	<0.001
<i>Test Variables</i>				
RESPBLTY	H3a (+)	0.13	1.82	0.03
ACCTBLTY	H3b (+)	0.15	2.23	0.01
FRDTYPE	-	-0.22	-3.21	0.001
<i>Control Variables</i>				
EXPER	+	0.02	0.37	0.71
MTRLTY	+	0.12	1.82	0.03
Observations		230		
F (p-value)		3.42	0.005	
Adj R <sup>2</sup> %		10.12		

\*One-tail p-values reported for significant coefficients in the predicted direction.

**Panel B: Descriptive Statistics for *Number of Procedures Brainstormed***

ACCTBLTY		FRDTYPE			
		FFR	MoA	Corruption	Overall
Anonymous	<b>Mean</b>	<b>1.50</b>	<b>1.17</b>	<b>0.87</b>	<b>1.18</b>
	SD	1.38	1.15	0.99	1.20
	N	46	43	46	135
Accountable	<b>Mean</b>	<b>2.12</b>	<b>1.67</b>	<b>1.14</b>	<b>1.67</b>
	SD	1.41	1.19	1.04	1.28
	N	33	33	29	95
Overall	<b>Mean</b>	<b>1.76</b>	<b>1.39</b>	<b>0.97</b>	<b>1.38</b>
	SD	1.42	1.18	1.01	1.25
	N	79	76	75	230

Variables are defined in Table 1.

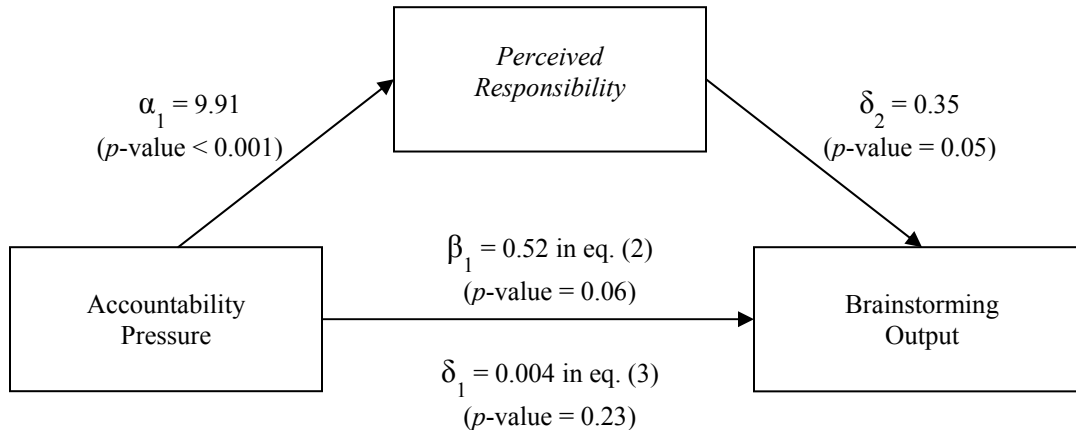
**TABLE 3 (cont.)**  
**Brainstorming Results**

**Panel C: Procedures Brainstormed**

<b>Procedure</b>	<b>n</b>
1. Tests of Transactions	104
a. Journal entry testing (e.g., vouching, tracing)	88
2. Analytical Procedures	103
a. Trend analysis	62
b. Budget vs. Actual Comparisons	24
3. Tests of Details of Account Balances	93
a. Third party confirmations	31
b. Search for unrecorded liabilities	16
c. Cutoff testing	12
4. Tests of Controls	73
a. Authorization (e.g., purchases, cash disb., vendor)	35
b. Segregation of Duties	18
5. Fraud Inquiries of Management & Other Employees	55

**TABLE 4**  
**Mediation Test Results**

**Panel A: Perceived Responsibility Mediation of Accountability-Brainstorming Relation**



**Panel B: Mediation Regression Results**

Equation	Dependent variable		Intercept	<i>ACCTBLTY</i>	<i>RESPBLTY</i>	<i>F</i> -value	Adj. <i>R</i> <sup>2</sup>
(1)	<i>RESPBLTY</i>	Coefficient	54.97	9.91		13.13	4.3%
		Std error	(1.91)	(2.74)			
		p-value*	< 0.001	< 0.001			
(2)	<i>BRAINSTRM</i>	Coefficient	1.20	0.52		2.40	1.8%
		Std error	(0.14)	(0.21)			
		p-value*	< 0.001	0.06			
(3)	<i>BRAINSTRM</i>	Coefficient	1.43	0.004	0.35	7.42	12.0%
		Std error	(0.20)	(0.03)	(0.15)		
		p-value*	< 0.001	0.23	0.05		

Sobel test statistic for mediation:  $z = 1.75, p\text{-value} = 0.08$

## APPENDIX A EXPERIMENTAL MATERIALS

### Panel A: Background Information

HQT is a tool manufacturer that sells to distributors and select retailers. HQT is an SEC client and has been your firm's audit client for two years. The company has had stable financial health and growth during your firm's tenure. Prior year results and current year planning indicate that HQT is an average risk client with effective internal controls and competent management, directors, and (in-house) internal auditors. Your firm has given unqualified audit opinions for each of the past two years. Your firm does not provide any non-audit services to HQT.

### Summary (Unaudited) Annual Financial Information

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

### Panel B: 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 \$100,000 of unneeded supplies prior to year-end and immediately expensed them as "Supplies Expense" even though none of the supplies were 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 auditors) and audit professionals within 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 \$100,000 cash from the company prior to 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 \$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.

**APPENDIX A (cont.)  
EXPERIMENTAL MATERIALS**

**Panel C: Triangle Model of Responsibility Link Questions**  
(adapted from Schlenker, 1994)

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