

## **Testing an Intervention to Improve Audit Inquiry Quality**

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## Testing an Intervention to Improve Audit Inquiry Quality

**Abstract:** Auditors often use inquiry to uncover information about existing (or potential) audit issues. In this study, we investigate how auditors inquire about a potential audit issue dependent on their awareness of a specific risk factor (i.e., “red flag”). Consistent with expectations, we find auditors who are aware (versus unaware) of a red flag ask higher-quality questions (i.e., more specific and framed in a manner that assumes an issue exists). We then test an easy-to-implement intervention to increase the quality of auditors’ inquiries when they are unaware of a red flag. Specifically, we instruct auditors to list facts and circumstances that would indicate the presence of a specific audit issue before planning their inquiries. We find this intervention improves inquiry quality for auditors who are unaware of a red flag such that they ask questions with similar quality as auditors who *were* aware of the red flag prior to the inquiry.

Keywords: Audit inquiry; communication; information sharing

## I. INTRODUCTION

Auditor-client inquiry is an important source of audit evidence and occurs frequently throughout the audit (Messier, Glover, and Prawitt 2022; Bennett and Hatfield 2013; Vinson et al. 2022). Inquiry can help auditors understand potential audit issues and may provide the only source of evidence indicating that an issue exists (AICPA 2018). However, clients often have incentives to conceal preference-inconsistent (i.e., “negative”) information from the auditor to avoid adverse audit outcomes, such as income-decreasing adjustments, restatements, and disclosures of material weaknesses. Accordingly, it is important that auditors ask questions in a manner likely to elicit relevant information from the client—especially preference-inconsistent information that clients are motivated to conceal.

However, it can be challenging for auditors to construct questions that will effectively elicit information about existing (or potential) audit issues, particularly when auditors are unaware an issue may exist. Ideally, when an audit issue exists (e.g., inventory has become obsolete), an auditor inquiring about that potential issue would have some knowledge of associated risk factors (e.g., be aware that product sales are declining or that a competitor has launched a new product with superior technology). By possessing such knowledge, auditors can more easily construct questions focused on these *known* areas of risk, consistent with the concept of risk-based auditing.<sup>1</sup> Unfortunately, auditors are not always aware of relevant risk factors when they conduct client inquiries. Accordingly, our study has two important objectives aimed at understanding and improving auditor-client inquiries. First, we examine how the quality of the

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<sup>1</sup> It is important to note that some inquiries are general in nature, such as those conducted during planning where the purpose is to understand the entity and its environment and to identify risks associated with a variety of accounts and management assertions. Other inquiries, however, are more targeted in nature, such as those conducted during substantive testing where the purpose is to answer a specific question and/or to identify risks associated with a specific account and management assertion. Our study focuses on the latter, as auditors in our study are given the task of conducting an inquiry to determine whether a specific client product may be obsolete.

questions auditors ask during inquiry changes when auditors are aware of a risk factor related to the audit issue being investigated compared to when they are unaware of such a risk factor.

Second, we test the effects of a pre-inquiry intervention that can be used by auditors when they *do not* possess knowledge of a relevant risk factor. The goal of this intervention is to prompt auditors to ask higher-quality questions that are more similar to the types of questions asked by auditors who possessed knowledge of the risk factor prior to conducting their inquiry.

Prior research finds that certain types of questions are more effective in eliciting information that others would prefer to conceal. Minson, VanEpps, Yip, and Schweitzer (2018) find that *specific* questions (e.g., “Has the car ever broken down?”) are more effective in eliciting information about an existing issue (e.g., transmission problems) compared to general questions (e.g., “What can you tell me about the car?”). Whereas general questions give the responding party an opportunity to omit relevant information and “talk around” the issue, specific questions force them to choose between telling the truth—thus, revealing the issue—or blatantly lying (Schweitzer and Croson 1999).<sup>2</sup> Minson et al. (2018) also find that questions phrased in a manner that assumes an issue exists (i.e., “negative-assumption” questions) (e.g., “How many times has the car broken down?”) are more effective in eliciting information about an issue compared to questions that assume an issue does *not* exist (i.e., “positive-assumption” questions) (e.g., “The car hasn’t broken down at all, right?”). Accordingly, for the purposes of our study, we define higher-quality questions as those that are more *specific* (i.e., focused on the specific audit issue being investigated) and those that are phrased in a *negative-assumption* manner that assumes an audit issue exists.

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<sup>2</sup> We acknowledge that general questions may be helpful when the auditor’s goal is to obtain a *general* understanding of a client and its environment. However, for a *targeted* inquiry where the objective is to elicit relevant information about a *specific* audit issue (e.g., inventory obsolescence), theory suggests that specific questions will be more effective, particularly in eliciting information that the other party would prefer to conceal.

Whereas Minson et al. (2018) examined the effectiveness of specific, negative-assumption questions in eliciting information about existing issues from others, they did not examine the extent to which people actually phrase their questions in these ways nor the circumstances that might prompt such phrasing. We predict auditors will ask these higher-quality questions to a greater extent when they are aware of a risk factor that suggests a particular audit issue exists (e.g., inventory has become obsolete) compared to when they are unaware of such a risk factor. According to Minson et al. (2018, 89), asking these higher-quality questions may “require preparation to identify key issues that merit a line of inquiry.” That is, a question asker may need to be aware of specific areas of risk in order for their questions to become more effectively tailored toward these high-risk areas in terms of specificity and phrasing.

Because auditors do not always have the advantage of being aware of relevant risk factors prior to conducting a client inquiry, it is important to consider how to get these less-informed auditors to ask more-effective questions, in line with what they might ask if they *did* possess this knowledge. To accomplish this objective, we design a pre-inquiry intervention where auditors are instructed to write out “potential facts or circumstances” that the client might be aware of that would indicate an audit issue exists (with the issue in our study being potential obsolescence of the client’s top-selling product). We expect this intervention will prompt auditors to access their domain (i.e., audit) knowledge about these *issue-specific* risk factors (e.g., indicators of inventory obsolescence), leading them to ask more specific questions during inquiry that are focused on the issue at hand. Furthermore, by mentally simulating (or imagining) an environment where this issue exists and the risk factors that might be present (e.g., decreased sales, a competitor who has launched a superior product), we expect auditors to ask more negative-assumption questions that assume an issue exists.

To test our hypotheses, we conduct a  $1 \times 3$  between-subjects experiment with 71 experienced staff and senior auditors. In our case study, auditor participants are tasked with conducting an inquiry over Zoom with the client's controller (a role played by actors with substantial professional accounting experience). Auditors are instructed by their superior to inquire about whether a potential inventory obsolescence issue exists for the client's top-selling product. In one of our conditions (the "red flag" condition), auditors are informed that a competitor launched a new product just before year end, which may be technologically superior to the client's top-selling product, suggesting an obsolescence issue. This information is absent in our other two conditions, leaving auditors unaware of an important piece of information that the client possesses. However, in one of these two conditions where the risk factor is unknown, auditors receive our pre-inquiry intervention where they are instructed to write out potential facts or circumstances that the controller might be aware of that would indicate an obsolescence issue with the product.<sup>3</sup> The auditors then engage in the client inquiry, which we recorded and transcribed, allowing us to examine the nature and content of the questions auditors asked.

Consistent with our expectations, we find that auditors who are aware of a risk factor indicative of a client issue (i.e., a "red flag") ask higher-quality questions during client inquiry (i.e., a greater proportion of questions that are specific in nature and framed in a negative-assumption manner) compared to auditors who are unaware of such a risk factor. This finding suggests that while auditors may be adept at gathering information about *known* risks, they are less effective at asking questions in a manner likely to uncover "new" information that clients may be reticent to share. Importantly, we find that auditors who receive our pre-inquiry

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<sup>3</sup> All auditors in our study are asked to plan at least three questions in writing prior to beginning their inquiry, but only those auditors who received the intervention complete this initial step of listing "facts and circumstances" prior to planning their questions.

intervention ask questions that are significantly more focused on the *specific* product in question and on *specific* indicators of impairment compared to auditors who did not receive the prompt. Furthermore, we find auditors who received the intervention (compared to those who did not) *planned* to ask more negative-assumption questions; however, this effect did not persist into the *actual* questions they asked, perhaps due to the assertive nature of such phrasing. We also note that although the auditors who received the intervention were not aware of the red flag, they asked questions “as if” they had this knowledge, as we do not find a difference in question specificity or negative-assumption phrasing between auditors receiving the intervention and those who received the red flag information.

Our study makes important contributions to the auditing literature and to audit practice. Our study extends the literature on auditor-client inquiry by providing initial evidence about how auditors construct their questions during a targeted client inquiry and the factors that influence the quality of the questions they ask (in the form of specificity and negative-assumption phrasing). Our finding that auditors alter the specificity and phrasing of their questions when they are aware of relevant risk factors highlights the importance of gathering sufficient risk-related evidence prior to conducting client inquiries. This finding also extends our understanding of auditors’ responsiveness to risk. Whereas prior studies have examined how auditors tailor their audit procedures and programs in response to client risks (e.g., Mock and Wright 1999; Hammersley, Johnstone, and Kadous 2011; Bedard and Graham 2002; Mock and Turner 2005), our study suggests they also tailor their *questions* in ways that are likely to lead to more complete and honest disclosure from clients (Minson et al. 2018; Schweitzer and Croson 1999).

Our study also extends theory related to communication and question phrasing. While research in psychology provides evidence that specific, negative-assumption questions are more

effective in eliciting information others would prefer to conceal (e.g., Minson et al. 2018; Schweitzer and Croson 1999), this research has *not* examined what might prompt individuals to ask these types of questions. Our study contributes to this understanding by identifying two factors—risk-related knowledge and a pre-inquiry prompt—that significantly increase the quality of the questions individuals ask. Importantly, we provide an easy-to-implement theory-motivated intervention that can help improve the quality of audit inquiry, increasing the likelihood that auditors will discover important information about audit issues during the inquiry process.

## **II. BACKGROUND AND HYPOTHESES DEVELOPMENT**

### **Background and Prior Literature**

Auditor-client inquiry is an important source of audit evidence and occurs consistently throughout the audit (Messier, Glover, Prawitt 2022; Vinson et al. 2022). According to Bennett and Hatfield (2013), auditors request information at least once daily and on average ask questions 2.5 times daily. Inquiry is often the auditor’s initial source of evidence when seeking to understand an audit area or issue. For instance, Trompeter and Wright (2010) note that inquiry is commonly the first procedure used in response to unexpected fluctuations identified in analytical procedures. Information obtained during client inquiry can help guide auditors in determining necessary evidence to gather and subsequent audit procedures to perform (Hylas and Ashton 1982; Wright and Ashton 1989). Furthermore, auditing standards state that inquiry can reveal information that contradicts previously-obtained evidence or may provide information not previously obtained (AU-C 500.A24). Accordingly, when other audit evidence is difficult or impossible to collect, client inquiry may provide the only opportunity for auditors to uncover evidence of a potential audit issue.



While client inquiry is an important source of audit evidence, features of the inquiry, including the behavior of auditors (e.g., their professionalism), have the potential to influence the quality of the information clients are willing to provide (Saewitz and Kida 2018). Furthermore, auditors face significant challenges during inquiries that have the potential to decrease the quality of the questions auditors ask, thus reducing the quality of the information they elicit. For instance, younger auditors often encounter social mismatch whereby they must interact with older, more experienced clients (Bennett and Hatfield 2013). Such social mismatch can be anxiety-inducing for auditors, making it less likely they will effectively challenge a client's initial position or elicit preference-inconsistent information from the client. Furthermore, auditors face conflicting incentives. On the one hand, auditing standards direct auditors to obtain high-quality audit evidence (AS 1105.03), but on the other hand, uncovering audit issues creates additional work for the audit team and uncomfortable conversations with the client, as well as audit team superiors (Commerford, Hatfield, Houston, and Mullis 2017). Auditors also approach some inquiries with relatively little background information, making it difficult to anticipate the direction of the conversation and requiring them to "think on their feet." Auditors who may feel anxiety during client inquiries (e.g., due to social mismatch) may find it challenging to think of effective questions on the spot (Vinson et al. 2022).

### **Impact of Risk Awareness on Auditors' Question Quality**

The purpose of client inquiry often is to elicit information that the client possesses, but that the auditor does not. Unfortunately, clients often have incentives to conceal preference-inconsistent (i.e., "negative") information from the auditor to avoid adverse audit outcomes, such as restatements, income-decreasing adjustments, disclosures of material weaknesses, and delayed filings. These client incentives to strategically conceal private, negative information from the

auditor make it less likely that auditors will successfully elicit relevant information about potential audit issues during client inquiry. In fact, research in psychology finds that when individuals are self-interested, they are more likely to strategically withhold unshared information, even when they know this information is important to others (Toma and Butera 2009; Steinel, Utz, and Koning 2010). Accordingly, clients who possess information about potential audit issues are unlikely to share this information with the auditor unless the auditor can effectively elicit this information during inquiry.

There is little evidence regarding *how* auditors should construct their questions to elicit honest, relevant, and complete information from the client about potential audit issues. However, psychology research identifies two question features that are effective in eliciting information about existing issues from individuals who would prefer to conceal such information: (1) the *specificity* of the question and (2) whether it is framed in a *negative-assumption* manner that assumes an issue exists (Minson et al. 2018; Schweitzer and Croson 1999).

Minson et al. (2018) find that specific (as opposed to general) questions are more effective in eliciting a specific piece of information. They provide evidence that specific questions give the responding party the impression that the inquirer (1) is knowledgeable about the topic and (2) is not afraid to pursue an assertive line of questioning. Furthermore, Schweitzer and Croson (1999) argue that by asking a specific, direct question (e.g., “Does the engine on the car ever stall?”), the responding party no longer has the option to omit information about a known issue (e.g., a faulty engine). They must either tell the truth (i.e., reveal the issue) or blatantly lie. In contrast, when a general question is asked, the responding party can easily omit damaging information or “talk around” any issues they do not want to discuss.<sup>4</sup>

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<sup>4</sup> In an audit context, Hamilton and Smith (2021) provide evidence that clients engaged in misreporting prefer an omission strategy when possible versus outright deception.

In addition to specificity, phrasing can also influence how effective a question is in eliciting information about existing issues that another individual would prefer to conceal. Minson et al. (2018) find that questions phrased in a negative-assumption manner that assume an issue exists are more effective in eliciting information about a known issue compared to positive-assumption questions, which assume that no issue exists. In one of their studies, Minson et al. (2018) asked participants to play the role of a seller attempting to sell an iPod, which had a known mechanical issue. Participants were incentivized via the pay structure to conceal the mechanical issue from the “buyer” (a role played by an actor). The researchers find that when the buyer asked a question phrased in a negative-assumption manner (“What problems does it have?”), participants were significantly more likely to reveal the issue with the iPod compared to when the buyer asked a question phrased in a positive-assumption manner (“It doesn’t have any problems, does it?”) or asked a general question (“What can you tell me about it?”).

In summary, the psychology literature suggests that for auditors to elicit more complete information from clients, particularly negative information they may prefer to conceal, auditors should ask questions that are more *specific* and that are framed in a *negative-assumption* manner that assumes an issue exists. However, it is unclear whether auditors apply these inquiry strategies in practice and whether certain audit circumstances may prompt their use. We predict that when conducting a targeted inquiry (i.e., an inquiry with a specific objective, such as determining whether a product is obsolete), auditors who are aware of a relevant risk factor (e.g., a significant decline in product sales) will ask higher-quality questions that are more specific and phrased in a negative-assumption manner compared to auditors who are unaware of such a risk. This idea that auditors should possess knowledge about client circumstances and risks prior to conducting inquiries is also echoed in the auditing standards (see PCAOB AS 2110 ¶ 55). Such

background knowledge can aid the auditor in constructing well-informed, targeted questions that focus on known areas of risk. That is, auditors can construct more *specific* questions about the issue at hand (e.g., determining whether inventory is impaired). Prior research suggests auditors allocate their time and design audit procedures to be responsive to risk, consistent with the concept of risk-based auditing (e.g., Seidel 2017; Bedard and Graham 2002; Mock and Turner 2005). Similarly, we predict that in response to a known client risk, auditors will ask more specific questions focused on uncovering a potential audit issue, compared to when auditors are unaware that such a risk exists. Stated formally, we predict the following:

**H1a:** Auditors will ask more specific questions when they are aware of a significant client risk compared to when they are not.

We also expect that when auditors are aware of a relevant client risk factor, they will use more negative-assumption questions that are framed in a manner that assumes an issue exists. Because the presence of risk factors signals an increased likelihood that an audit issue exists, auditors who possess knowledge of a client risk (e.g., a significant decline in product sales) are likely to assume that a related issue exists (e.g., impaired inventory) and frame their questions consistent with this assumption (i.e., in a negative-assumption manner). Stated formally, we predict the following:

**H1b:** Auditors will frame their questions in a more negative-assumption manner when they are aware of a significant client risk compared to when they are not.

### **A Pre-Inquiry Intervention to Improve the Quality of Auditors' Questions**

Although it is preferable for auditors to possess knowledge about relevant client risks prior to conducting an inquiry, this is not always possible. Sometimes, auditors must question clients on topics for which they have relatively little background information, particularly as inquiry is often used as the first step toward understanding an audit issue (Trompeter and Wright

2010). In such instances where auditors are *not* aware of existing client risks, auditors may struggle to construct high-quality questions that can effectively elicit information from the client about existing audit issues, as auditors are not fully aware of what those issues might be. Accordingly, it is relevant to consider how to get these less-informed auditors to conduct inquiries more similarly to those who possess knowledge of an existing issue or risk.

We propose a pre-inquiry intervention where auditors are instructed to write out “potential facts or circumstances” that the client might be aware of that would indicate an audit issue exists (e.g., facts or circumstances that might indicate the client’s top-selling product has become obsolete). This intervention is intended to prompt auditors to access their domain knowledge regarding the *specific* facts or circumstances that are often present when a particular client issue exists. For instance, facts or circumstances that suggest a client product has become obsolete would include a variety of impairment indicators, such as declining sales, declining sales price or profit margin, technology changes in the market, and the introduction of competing products. Reasonably experienced auditors should possess knowledge regarding the facts and circumstances (i.e., risk factors) that might signal a variety of audit issues. However, during client inquiry, auditors face various pressures (e.g., social mismatch, the need to “think on their feet”). These pressures likely make it difficult for auditors to access their domain knowledge and construct effective questions to elicit relevant information from clients “on the spot.”

Research from psychology finds that a simple prompt to list factors that one considers relevant for solving a problem (e.g., estimating an unknown quantity) significantly improves task performance compared to when such a prompt is absent (MacGregor, Lichtenstein, and Slovic 1988). This research suggests that such a prompt may help facilitate knowledge retrieval regarding facts that are relevant for the task or issue at hand and may help to organize this

knowledge more efficiently compared to holding it in memory (MacGregor et al. 1988). Furthermore, theories on creative idea generation argue that “ideas have their origins in the knowledge base of the creative individual” (Rietzschel et al. 2007, 924). Previously-stored knowledge must be retrieved to serve as the basis for new ideas (Fink, Ward, and Smith 1992). Consistent with this theory, Rietzschel et al. (2007) find that prompting participants to write about their experiences with a given topic (i.e., access their domain knowledge) led to the generation of significantly more unique ideas related to the specific topic that was primed.

In summary, psychology research suggests that prompting people to access their domain knowledge improves performance on tasks where that knowledge is useful, including in the generation of ideas. Accordingly, we expect that prompting auditors to list facts and circumstances that might suggest an audit issue exists (e.g., inventory impairment) will lead auditors to access their audit knowledge regarding the *specific* risk factors that are often present when that issue exists (e.g., specific indicators of impairment). As a result, we expect auditors who receive our intervention will plan and subsequently ask questions during client inquiry that are more *specific* (i.e., more focused on the audit issue about which they are inquiring). Stated formally, we predict the following:

**H2a:** When unaware of a significant client risk, auditors who are prompted to consider facts and circumstances that would indicate the presence of an audit issue will ask more specific questions compared to auditors who do not receive such a prompt.

We also expect that our intervention will lead auditors to ask more questions that are framed in a negative-assumption manner that assumes an issue exists. By prompting auditors to consider facts and circumstances that would suggest the presence of a particular audit issue (e.g., inventory impairment), auditors are likely to recall prior education and training, as well as client experiences with that issue and the risk factors that were present (e.g., declining sales, excess

inventory). That is, auditors are likely to mentally simulate, or imagine, what the audit environment might look like if that issue existed (e.g., the risk factors that might be present). Research in psychology suggests that the process of mental simulation evokes similar cognitive, physiological, and behavioral responses as having the corresponding experience in reality (Kappes and Morewedge 2016). Accordingly, even if auditors are not fully aware of an *actual* client risk factor that suggests an audit issue exists, we expect that by considering *potential* risk factors that might exist, auditors will be more inclined to plan and subsequently ask questions during client inquiry that are framed in a manner that assumes an issue exists (i.e., negative-assumption questions). Stated formally, we predict the following:

**H2b:** When unaware of a significant client risk, auditors who are prompted to consider facts and circumstances that would indicate the presence of an audit issue will frame their questions in a more negative-assumption manner compared to auditors who do not receive such a prompt.

### III. METHOD

#### Participants

Our participants are 71 experienced auditors. Twenty-nine participants (40.8 percent) have between 0.5 and two years' experience (including at least one busy season), 38 participants (53.5 percent) have between two and five years' experience, and four participants (5.6 percent) have more than five years' experience. Fifty-five (77.5 percent) of our participants are employees of a Top 20 national firm attending remote training sessions. An additional 16 (22.5 percent) of our participants are recruited through our personal networks—ten of which work for international firms (e.g., Big 4) and six work for national and regional firms. Thirty-two (45.1

percent) of our participants are female and 39 (54.9 percent) are male.<sup>5</sup> To encourage participation, we provided a prize drawing for Amazon gift cards.

## **Design**

In our experiment, participants assume the role of an auditor assigned to investigate potential inventory obsolescence at their client, ManuTech Incorporated, a manufacturer of high-tech hardware. Our study uses a  $1 \times 3$  between-subjects design. In our first condition (*Red Flag*), participants learn about a client risk (i.e., a “red flag”) that suggests there may be an obsolescence issue with the client’s top-selling product, the S3000. Specifically, participants are told by their audit team manager that “ManuTech’s competitor, Future Medical, launched a new product about one month before the end of ManuTech’s fiscal year. The competitor’s new product may be technologically superior to ManuTech’s S3000. We need to determine whether this new product renders the S3000 obsolete.” In the second condition (*No Red Flag/No Prompt*), participants do not receive the high-risk information about the competitor’s product and must conduct their inquiry without knowledge of the specific underlying obsolescence risk. This condition serves as a control condition to determine how auditors ask questions in the absence of heightened risk factors. In the third condition (*No Red Flag/Prompt*), participants also do not receive the high-risk information about the competitor product but *do* receive our intervention. Specifically, participants in the *No Red Flag/Prompt* condition are instructed that to prepare for their inquiry, they should “write out potential facts or circumstances that Bob Clark might be aware of that would indicate there is an inventory obsolescence issue for the S3000.”<sup>6</sup> With these

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<sup>5</sup> The following are not significant covariates for any dependent variable discussed: participant source (i.e., firm training or author contact), age, gender, task experience, and extent of formal inquiry training.

<sup>6</sup> All participants are aware that obsolescence could be an issue for the S3000 at any time. For example, the company background section provided to all participants notes that “The S3000 involves cutting edge technology. Like all high-tech products, the S3000 needs to be assessed periodically for obsolescence.” Accordingly, the prompt does not serve to increase participants’ consideration of obsolescence as a risk compared to those who do not receive



three conditions, we can test whether the knowledge of a significant client risk improves the quality of the questions auditors ask during inquiry and whether, in the absence of knowledge about such a risk, our intervention leads to improvement in question quality compared to the control condition.<sup>7</sup>

## Actors

We conducted an interactive study in which participants communicate with one of three highly experienced accountants playing the role of a client controller. All three controllers are white, male, and at least fifty years old. They each have at least twenty years of accounting experience and at least six years of public accounting experience. Two of the controllers are former audit partners while one controller is a former corporate controller.<sup>8</sup> We use an actor-based approach as we are interested in the interaction between auditors and clients. However, our research questions are focused exclusively on the influence of our independent variables on the auditors' behavior, not on the client's behavior. Accordingly, we use three carefully trained

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the prompt. Consistent with this, in response to a pre-inquiry question, participants who receive this prompt do not assess obsolescence risk higher than those who do not receive the prompt ( $p = 0.416$ , two-tailed).

<sup>7</sup> We began the experiment with a fully crossed  $2 \times 2$  design separately manipulating both the presence of the red flag and the prompt. Due to difficulty obtaining participants and to maintain adequate power to test our hypotheses, we chose midway through the experiment to discontinue assigning participants to a *Red Flag/Prompt* condition and to collapse all previous Red Flag participants across *Prompt/No Prompt*. This choice is consistent with the fact that we expect the prompt to trigger inquiry strategies that the auditor would use when they are already aware of a red flag. Accordingly, it is reasonable to not expect a difference between a red flag condition with or without the prompt. Consistent with this expectation, there are no significant differences between the *Red Flag/Prompt* and *Red Flag/No Prompt* conditions for all dependent variables discussed (all p-values > 0.10).

<sup>8</sup> Consistent with guidance from Hatfield and Saewitz (2022), we chose to use highly experienced accountants as the "actors" rather than trained actors, as we deemed it more important that the "controller" be able to speak clearly about accounting issues to maintain experimental realism. For simplicity, we refer to the actors as the "controller" throughout this paper. Participants were aware that the actor was a fictional controller and therefore no deception occurred. Because each interaction was recorded (with participant consent), we were able to verify that no participants broke character and all participants appeared to take the task seriously. We obtained Institutional Review Board approval from each of the authors' Universities for the experiment.

controllers who make every effort to provide consistent responses to the auditors. The controllers are blind to experimental condition.<sup>9</sup>

We trained the controllers by providing a detailed set of instructions and by conducting pilot interviews. The detailed instructions outline ManuTech's position that the S3000 is not obsolete, including information that the controller knows but the auditor does not, and indicate the controller's response strategy. The controllers were instructed to respond to the auditor's inquiries based on information only they know and are provided with a list of 15 points denoted as (+) supporting the company's position of no inventory obsolescence or (-) not supporting that position. The controllers use a response strategy where they respond truthfully to auditors' inquiries but at the same time do not volunteer negative information unless specifically asked. The instructions also provide a standard response to general questions from the auditor, and indicate that if a meeting is approaching 10 minutes long, the actor should tell the participant that they have another call and bring the interaction to a close.

To ensure the instructions are clear and complete, and the controllers are consistent and comfortable in their role, we conducted four pilot calls with experienced auditors as participants. For developmental purposes both the authors and the controllers were present on the calls (with video and microphones off during the interactions). Each controller interacted with the auditor participants on one to two pilot calls and observed other controllers' pilot calls. After each pilot call, the authors and the controllers debriefed and updated the controller instructions as necessary. The authors and controllers communicated with each other over the course of the

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<sup>9</sup> We test for actor covariate effects following Piercey (2023). We use the model comparison approach to conduct a semi-omnibus F-test of no covariate-related effects and find no evidence of unexpected actor effects. This indicates that a model without covariate effects is appropriate for our hypothesis testing. In addition, we do not find any significant differences across conditions in perceptions of the controller's competence, trust, or forthcomingness (all p-values > 0.113 2-tailed). Together, these analyses provide evidence that our results are not driven by the characteristics or behavior of any one specific controller.

experiment whenever unanticipated behaviors arose. In each case, the author team would determine and communicate updated strategies for the three controllers to ensure consistency in subsequent interactions.

## **Experimental Procedures**

After introducing our study, auditors were invited to sign up for an appointment to participate later in the week. Next, each participant received a calendar invitation with a Qualtrics link to click at the beginning of their scheduled appointment.<sup>10</sup> Once they commence the study, they are told they are part of the team auditing ManuTech Incorporated, and they will meet with Bob Clark, ManuTech’s controller.<sup>11</sup> To enhance realism, we tell participants that “You have worked with Bob before and found that he is helpful, but is very busy and generally doesn’t have a lot of time to talk.” We also ask participants to ensure that their camera, microphone, and speakers are working.

Participants then read background information on the company. In all conditions, they are told that the company’s best-selling product is the S3000, an electronic component used primarily in medical devices. They are told that the S3000 involves cutting edge technology and, “like all high-tech products, the S3000 needs to be assessed periodically for obsolescence.” They are told that management has concluded there is no inventory obsolescence problem for the current year and that sales during the fiscal year under audit remained strong.

Participants then read an email from their audit manager asking them to speak with Bob Clark about the obsolescence assessment. This e-mail contains our red flag manipulation. Then, participants plan their interaction by listing at least three questions they can ask Bob Clark to

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<sup>10</sup> If they clicked the link early, the initial screen states that they should only commence the study if it is their scheduled time.

<sup>11</sup> The experimental materials are adapted from Saiewitz and Kida (2018).

determine if there is an inventory obsolescence issue. Here we manipulate whether participants are just asked to list questions or if we also provide them with the intervention prompt.<sup>12</sup> We also ask the participants to indicate the likelihood that the S3000 is obsolete prior to their interaction with Bob Clark. Participants in the *Red Flag* condition assess higher likelihood of obsolescence than the those in the *No Red Flag/No Prompt* and the *No Red Flag/Prompt* conditions (4.78 versus 3.68;  $t_{69} = 2.60, p = 0.006$ , and 4.78 versus 3.77;  $t_{69} = 2.49, p = 0.008$ , respectively, both one-tailed, untabulated), indicating a successful manipulation of heightened risk due to a red flag. In addition, there is no difference between the *No Red Flag/No Prompt* and the *No Red Flag/Prompt* conditions (3.68 versus 3.77;  $t_{69} = 0.21, p = 0.416$ , two-tailed, untabulated), consistent with our expectation that the prompt only changes questioning behavior and does not serve by itself to inappropriately heighten risk perceptions (i.e., it would be detrimental for the prompt to increase risk assessments in the absence of evidence that there is in fact heightened risk).

Participants then click a Zoom link embedded in Qualtrics to meet with Bob Clark, the controller. During the meeting, participants have a chance to ask any questions they deem necessary to investigate potential inventory obsolescence. After completing their interaction with the controller, they return to Qualtrics to document the results of their inquiry, and again assess the likelihood that the S3000 is obsolete. They are then given the opportunity to draft an email to their manager if they believe there is an obsolescence issue. After this, they respond to several post-experimental questions about their views of the controller, how they felt about the

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<sup>12</sup> We initially considered including a control condition where we do not ask the participants to document their planned questions. However, we determined during a separate pilot test of the front-end of the instrument (i.e., without interaction) that participants in such a control condition were independently making lists of questions to ask Bob Clark when they prepared for the interaction. As a result, we concluded that such control condition participants' preparation would be identical to participants in the unprompted question planning condition but we would lose the ability to analyze their planned questions. Accordingly, we chose to ask all participants to document their planned questions in Qualtrics.

interaction, how much training they have received in conducting client inquiries, a self-assessment of their skepticism, and demographic information. Finally, we ask if they have any additional comments and how hard they feel they worked on the study, and then we thank them for their participation.

### **Dependent Variables**

To measure auditors' question quality, we analyze auditors' planned questions and transcripts of their actual questions.<sup>13</sup> We code each question on several dimensions and then we use this coded information to create our dependent variables. Two coders (one author and one graduate student, both of whom were blind to experimental condition) independently coded each question planned and asked by auditor participants based on its specificity and framing. Cohen's Kappa, a measure of inter-rater reliability over and above that expected by random chance, ranges from 0.640 to 0.756 on all planned question coding, indicating good to excellent inter-rater reliability and ranges from 0.850 to 0.887 for all actual questions, indicating excellent inter-rater reliability (Banerjee, Capozzoli, McSweeney, and Sinha 1999). All coding differences were mutually resolved by the coders.

For each question we coded two separate aspects of specificity: inventory specificity and obsolescence specificity. We coded "inventory specificity" by coding whether the question was completely unrelated to inventory, related to inventory *in general* but not the S3000, or related *specifically* to the S3000. For questions related to inventory (including those specific to the S3000), we also coded "obsolescence specificity," by coding whether the question was completely unrelated to obsolescence (e.g., "Did you perform [an] inventory count, as of year-end?"), related to obsolescence in *general* (e.g., "Has the company established an inventory

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<sup>13</sup> Transcripts were automatically generated by Zoom. A graduate student who was blind to condition and the purpose of the study watched the recorded videos and made any necessary corrections to the transcripts.

reserve for any potential obsolete inventory?”), or related to a *specific* indicator of impairment (e.g., “Have there been any major changes in the industry or advancements in technology?”, “After the fiscal year end, have you guys seen any sort of dip in sales for the S3000?”). Based on our specificity coding, we created measures of the proportion of total questions asked by each participant that related specifically to the S3000 (“S3000 Proportion”) and the proportion that related to specific indicators of impairment (“Indicators of Obsolescence Proportion”).

For determining the extent to which auditors framed their questions in a negative-assumption manner, we coded each question based on whether it was framed with a negative-assumption, positive-assumption, or neutral. We coded a question as negative-assumption in nature if the question was phrased in a way that assumed that inventory may be obsolete (e.g., “Have you seen any shifts in the industry that may signal a shift away from using the S3000?”, “After the fiscal year end, have you guys seen any sort of dip in sales for the S3000?”, “What sort of competing products are you seeing in the space from other competitors in the industry?”). We coded a question as positive-assumption in nature if it appeared to make an assumption that an issue with obsolescence did *not* exist (e.g., “And do you think [the S3000 is] going to continue to do well?”, “I wanted to hear what you all do to determine that [the S3000 is] not obsolete,” “How are sales in the current year compared to the prior year? Roughly the same?”, “What makes the S3000 better than other products on the market?”). Finally, questions were coded as neutral if they were neither negative- nor positive-assumption (e.g., “is there anything that you think that I need to know regarding the S3000 and possible obsolescence”, “can you tell me what the current value is of the S3000?”, “how much is the inventory, your inventory balance

right now?”). Based on this coding, we created a measure of the proportion of total questions that were negative-assumption in nature (“Negative-assumption Proportion”).<sup>14</sup>

As noted above, we capture auditors’ planned and actual questions. The planned questions have the advantage of being recorded before auditors interact with the controller, thus they are not influenced by any characteristics of the controllers and allow for a cleaner test of theory. However, it is important to determine whether the effects of the manipulations persist through an actual interaction with the controllers, enhancing the externally generalizability of the results.

## IV. RESULTS

### **Tests of H1: Effect of Auditor Awareness of Client Risks on Question Quality**

H1a predicts that auditors will ask more questions that focus on the specific issue being investigated (determining whether the S3000 may be obsolete) when they are aware of a relevant client risk factor (i.e., a red flag) prior to the inquiry compared to when they are not. To test H1a, we compare our measures of specificity between the *No Red Flag/No Prompt* and the *Red Flag* conditions. We present descriptive statistics and statistical tests in Table 1 and present the results graphically in Figure 1. Consistent with our expectations, we find that the proportion of planned and actual questions focused specifically on the S3000 (S3000 Proportion) is significantly greater when auditors are aware of a red flag (the *Red Flag* condition) compared to when auditors are unaware of a red flag (the *No Red Flag/No Prompt* condition) (planned questions:

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<sup>14</sup> We use proportions as opposed to raw counts to control for variation in the total number of questions asked by each participant. Importantly, when conducting inquiries, auditors should consider both the need to ask a sufficient number of relevant questions and the need to respect the client’s time. Accordingly, it is not desirable for auditors to ask unnecessary questions that are off-topic and unlikely to elicit *relevant* information from the client. Further, responses to non-specific questions may draw attention away from responses to specific questions, thereby diluting auditors’ judgments (e.g., Hoffman and Patton 1997). By using proportions, we capture the extent to which auditors focused on higher-quality questions.

0.95 versus 0.71,  $t_{68} = 3.49$ ,  $p = 0.001$ ; actual questions: 0.89 versus 0.75,  $t_{69} = 1.85$ ,  $p = 0.034$ ).<sup>15</sup>

We also find the proportion of planned questions that focused on specific indicators of obsolescence is marginally greater in the *Red Flag* condition compared to the *No Red Flag/No Prompt* condition (0.87 versus 0.78,  $t_{68} = 1.44$ ,  $p = 0.076$ ), although the proportion of actual questions is not significantly different between the *Red Flag* condition and the *No Red Flag/No Prompt* condition (0.82 versus 0.76,  $t_{69} = 1.62$ ,  $p = 0.128$ ). These results for H1a indicate that auditors are significantly more focused on questions that are specific to the at-risk product when they have red flag information compared to when they do not, while we find only weak evidence that they are more focused on questions about specific impairment indicators in the presence versus absence of the red flag. Overall, these results provide support for H1a and suggest that it is important that auditors possess knowledge of relevant risks prior to conducting a client inquiry, as such knowledge increases the specificity of the questions they plan and ask.

H1b predicts that during client inquiry, auditors will ask more questions framed in a negative-assumption manner that assumes an issue with inventory impairment exists when they are aware of a relevant client risk factor prior to the inquiry compared to when they are not. To test H1b, we again compare the *No Red Flag/No Prompt* and the *Red Flag* conditions. We find that consistent with H1b, auditors planned and asked a higher proportion of questions framed in a negative-assumption manner in the *Red Flag* condition compared to the *No Red Flag/No Prompt* condition (planned: 0.32 versus 0.17,  $t_{68} = 1.99$ ,  $p = 0.026$ ; actual: 0.29 versus 0.19,  $t_{69} = 1.14$ ,  $p = 0.077$ ). Overall, these results largely support H1b and suggest that when auditors possess

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<sup>15</sup> All p-values are one-tailed based on directional predictions unless otherwise noted. Degrees of freedom vary for planned questions versus actual questions because, as noted in Table 1, two participants did not document planned questions and are only included in the actual questions, while one participant provided planned questions but asked no questions during their interactions (they only made statements).



knowledge of relevant risks prior to conducting a client inquiry, they are more inclined to phrase their questions in a negative-assumption manner that assumes an audit issue exists.

### **Tests of H2a: Effects of a Pre-Inquiry Intervention on Question Specificity**

H2a predicts that when auditors are not aware of relevant client risks prior to conducting an inquiry, receiving a prompt to consider facts and circumstances that would indicate an audit issue exists will lead auditors to ask more specific questions. Consistent with H2a, we find that the S3000 Proportion for planned and actual questions is significantly greater for auditors in the *No Red Flag/Prompt* condition compared to those in the *No Red Flag/No Prompt* condition (planned: 0.97 versus 0.71,  $t_{68} = 3.93$ ,  $p < 0.001$ ; actual: 0.91 versus 0.75,  $t_{69} = 2.30$ ,  $p = 0.013$ ). We also find that Indicators of Obsolescence Proportion for both planned and actual questions is greater for auditors in the *No Red Flag/Prompt* condition compared to those in the *No Red Flag/No Prompt* condition (planned: 0.86 versus 0.78,  $t_{68} = 1.38$ ,  $p = 0.087$ ; actual: 0.86 versus 0.76,  $t_{69} = 1.84$ ,  $p = 0.037$ ). Overall, the results for H2a suggest that our intervention significantly improves the specificity of auditors' questions.

### **Tests of H2b: Effects of a Pre-Inquiry Intervention on Negative-assumption Question Framing**

H2b predicts that when auditors are not aware of relevant client risks prior to conducting an inquiry, receiving a prompt to consider facts and circumstances that would indicate an audit issue exists will lead auditors to ask more questions framed in a negative-assumption manner that assumes an issue with inventory impairment exists. We find that the proportion of auditors' planned questions framed in a negative-assumption manner (Negative-Assumption Proportion) is marginally greater in the *No Red Flag/Prompt* condition compared to the *No Red Flag/No Prompt* condition (0.28 versus 0.17,  $t_{68} = 1.44$ ,  $p = 0.078$ ), but there is no difference for auditors' actual questions (0.21 versus 0.19,  $t_{69} = 0.29$ ,  $p = 0.390$ ). Overall, these results provide only

weak support for H2b. While auditors appear to *plan* to ask their questions in a negative-assumption manner, this framing does not persist to the *actual* questions they ask. It is possible that auditors may be hesitant to ask questions in a more assertive, negative-assumption manner if they do not possess information that suggests such an issue actually exists (i.e., if they are unaware of a red flag). Due to the importance of framing questions using a negative-assumption approach (e.g., Minson et al. 2018), we encourage future research to investigate additional interventions that may prompt auditors not only to plan, but also to ask questions in a negative-assumption manner, similar to auditors who are aware of a red flag.

### **Additional Analysis: Extent of Question Quality Improvement for the Pre-Inquiry Intervention**

Recall that the objective of the intervention is to improve the quality of auditors' questions, so that they become more similar in quality to questions developed by auditors who *are* aware of a client risk factor prior to conducting an inquiry. As shown in Table 1, Panel B, we do not find any significant differences for any measure of planned or actual question quality between the intervention condition (*No Red Flag/Prompt*) and the Red flag condition (all two-tailed p-values > 0.234). This provides further support that the intervention significantly improves the specificity of auditors' planned and actual questions and the negative-assumption manner of their planned questions such that, even when auditors are *not* aware of a client risk prior to conducting an inquiry, the intervention leads them to ask questions in a manner similar to auditors who *are* aware of such a risk.

### **Supplemental Analysis**

To better understand why the results for H2b (negative-assumption manner) were supported for planned but not actual questions we conduct a supplemental analysis. Beginning

with questions that participants planned, we examine whether they asked those questions during their interaction with the controller. Participants planned 246 questions, 217 of which were subsequently asked during their interactions.

Of those questions actually asked, 146 were asked using the same assumption framing with which they were planned (i.e., planned negative-assumption question actually asked in a negative-assumption manner, or neutral questions actually asked in a neutral manner), and 71 questions were asked in a manner which differed from how they were planned.

For those questions that were asked in manner that differed from how they were planned, we examine whether the change in framing varied by experimental condition. In the *No Red Flag/No Prompt* condition there is no difference in the likelihood that a negative-assumption, positive-assumption, or neutral question was asked in a different manner than it was planned ( $X^2_2 = 2.152$ ,  $p = 0.341$ , untabulated). However, we do find differences in both the *Red Flag* ( $X^2_2 = 17.838$ ,  $p < 0.001$ ) and *No Red Flag/Prompt* ( $X^2_2 = 5.029$ ,  $p = 0.081$ ) conditions. Specifically, in the *Red Flag* condition, we find that participants are more likely to change positive-assumption questions than negative-assumption or neutral questions (both  $p < 0.05$ , untabulated). Descriptively, these positive-assumption questions are overwhelmingly changed to neutral as opposed to negative-assumption questions (8/10). This suggests that auditors who are aware of a risk factor change their question-framing to be more skeptical of the client. There is still room to improve further by changing to more negative-assumption questions, but auditors appear to be moving in a beneficial direction.

In the *No Red Flag/Prompt* condition we find that participants are more likely to change the framing of negative-assumption questions than neutral questions ( $p < 0.05$ , untabulated). Descriptively, these negative-assumption questions are more likely to be changed to a neutral

(versus positive-assumption) question (8/12). While these changes are not ideal, it is reassuring that auditors are not changing their questions to be entirely supportive of the client.

In summary, our analysis suggests that auditors in the *Red Flag* condition changed the framing of their questions to be more skeptical (e.g., changed questions they originally planned to ask in a positive-assumption manner to be more neutral). This suggests that auditors may feel more confident asking their questions in a more skeptical manner when they possess information prior to the inquiry that suggests an audit issue may exist (i.e., a red flag). Without such red flag information, auditors may feel less confident using a phrasing that may be perceived as challenging the client (e.g., negative-assumption), consistent with our finding that auditors in the *No Red Flag/Prompt* condition had planned to ask negative-assumption questions, but ultimately opted for neutral phrasing during the actual client inquiry.

#### **IV. CONCLUSION**

We examine auditor-client inquiries when auditors are aware of and, more importantly, when they are unaware of a risk factor indicative of a client issue. Further we design an easy to implement intervention to improve the quality of auditors' inquiries when they are unaware of potential audit issues. Consistent with our expectations, we find that auditors who are aware of a risk factor indicative of a client issue ask questions during client inquiry that are of higher quality (i.e., more specific and more likely to be framed in a negative-assumption manner) compared to auditors who are unaware of such a risk factor. This finding suggests that while auditors may be adept at gathering information about known risks, they are less effective at using inquiry to uncover "new" information that clients may be reticent to share. Importantly, we also find that auditors who received our intervention, in which we prompt auditors to consider potential facts

and circumstances that would signal an obsolescence issue, asked questions that were significantly more focused on the specific product in question and more focused on specific indicators of impairment compared to auditors who did not receive the prompt. Although the auditors who received the intervention were not aware of the risk factor related to a competitor's product signaling an obsolescence issue, they asked questions "as if" they had this knowledge, as we find a similar level of question specificity between auditors receiving the intervention and those who received the risk factor information.

Our study provides important contributions to auditing research and practice. While prior research looks at how auditors respond to risks in planning audit procedures, we provide evidence that auditors alter their inquiry strategies in response to risk. We investigate how auditors specifically structure their questions, as well as how to improve this process with an easy to implement intervention. Of concern, we find that auditors use lower quality questions when unaware of a risk unless prompted to consider potential risks in advance. This is important since inquiry is often a primary method of obtaining information about audit risks. Psychology research suggests that lower question quality makes it less likely that an individual will reveal information that is detrimental to their goals (e.g., Minson et al. 2018). Accordingly, if auditors ask questions in a manner that is less likely to elicit risk factors from clients, then there will be downstream effects on whether auditors will appropriately plan further audit procedures. When prompted to consider potential risks in advance, auditors conduct inquiries similar to when they are already aware of the risk, thus maintaining higher audit quality.

Like all experimental research, our study is subject to limitations. Although we enhance external generalizability through investigating not only auditors' planned questions but also the actual questions they ask in a live interaction with an actor playing the role of a controller,

features of our setting could influence participants' behavior, including the age and gender of the actors – all three actors are older males, consistent with the social mismatch literature (e.g., Bennett and Hatfield 2013) – as well as the Zoom inquiry setting compared to in-person inquiry. For the latter limitation, research suggests that many interactions between auditors and clients remain remote in the post-COVID environment (e.g., Hasson, Bagley, and Eller 2023). Issues of gender and age present areas for future research. Further, while using experienced accountants playing the role of the corporate controllers allows us to carefully control the actors' behavior, and thereby, test our theory regarding auditor behavior, it is possible that different responses from the controllers could also have impacted auditor behavior (e.g., aggressiveness, distraction). We encourage future research to further investigate how client behavior might influence auditor inquiry strategies.

Our study presents many avenues for future research. As noted earlier, we find that although prompted auditors plan to use higher quality negative-assumption question framing, their plan does not persist during actual interactions. This could be due to concerns about framing questions in an “accusatory” manner when engaged in an actual interaction with clients. Future research could investigate the circumstances under which this hesitance occurs (e.g., does this only occur when a social mismatch is present?) and ways to reduce this hesitation. Further, while we provide initial evidence on how auditors ask questions, there is only limited evidence on how clients react to auditor questions (e.g., MacKenzie and Agoglia 2023; Saiewitz and Kida 2018). We encourage future research to specifically investigate how clients respond to audit inquiry strategies. Because auditor-client inquiry is pervasive in the audit process and represents a key method auditors use to identify risks, it is important for research to identify inquiry-related pitfalls and continue to investigate ways to improve the inquiry process.

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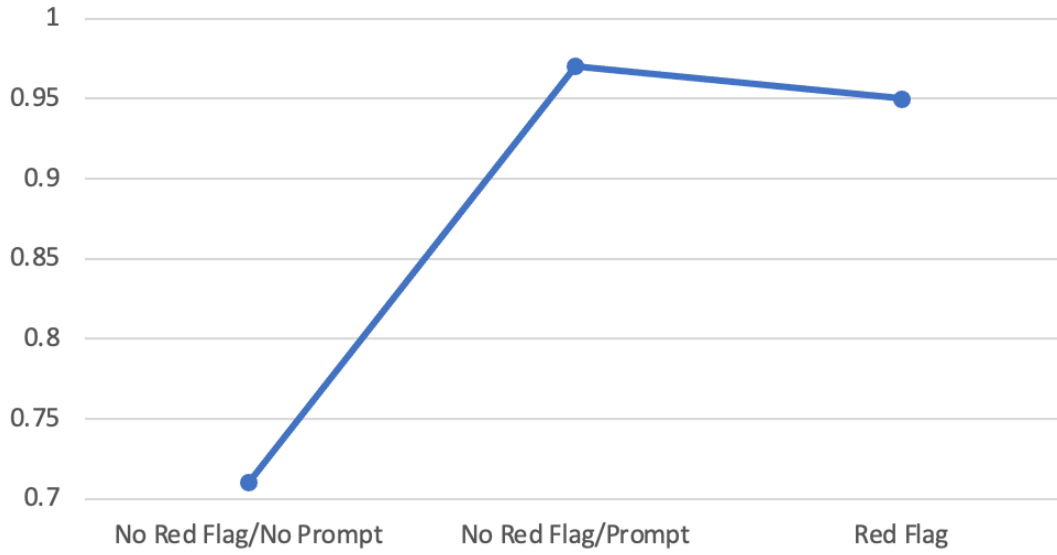


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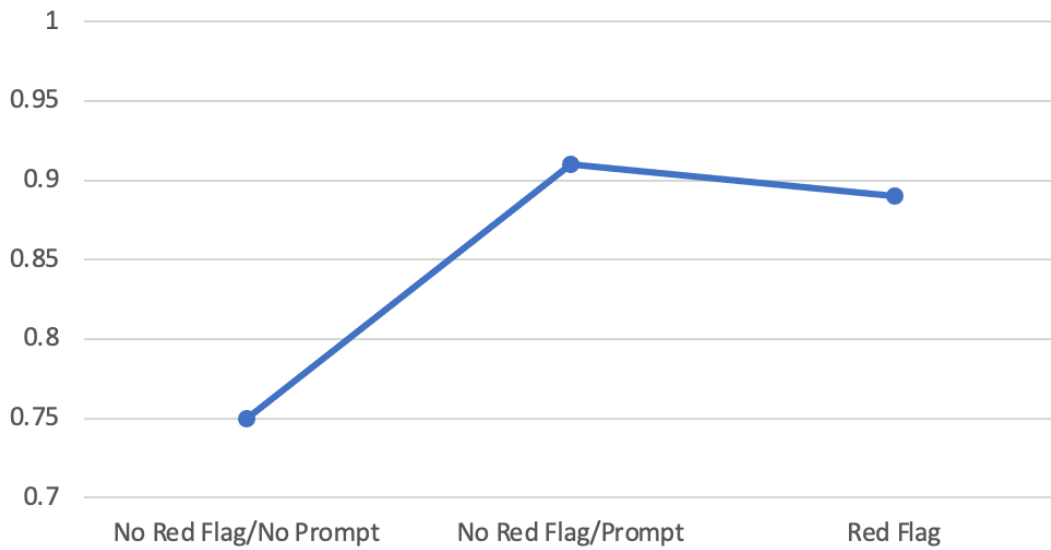
**FIGURE 1**  
**Results of Coded Variables for Auditors' Planned and Actual Questions**

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**Panel A: *Planned S3000 Proportion***

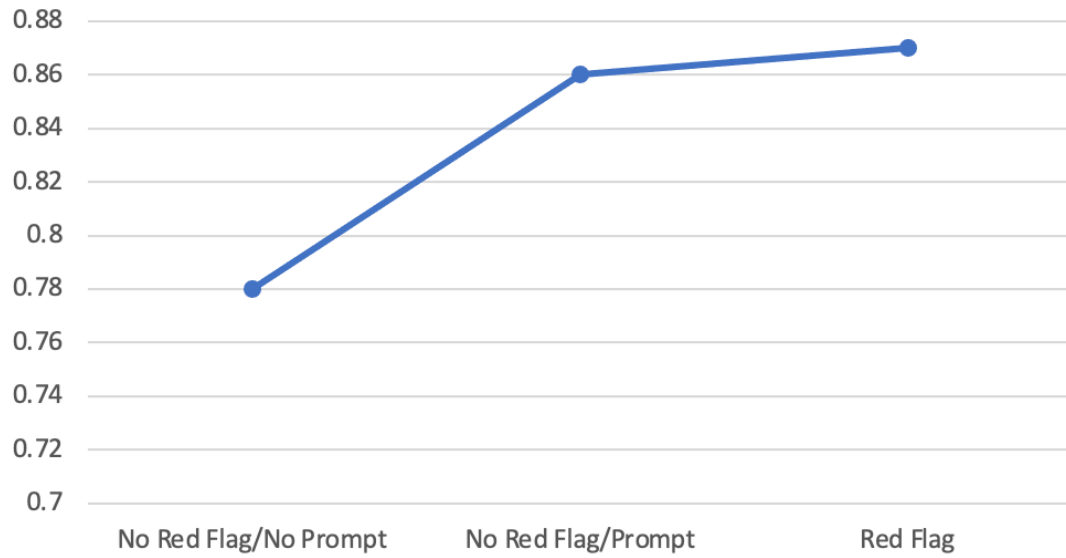


**Panel B: *Actual S3000 Proportion***

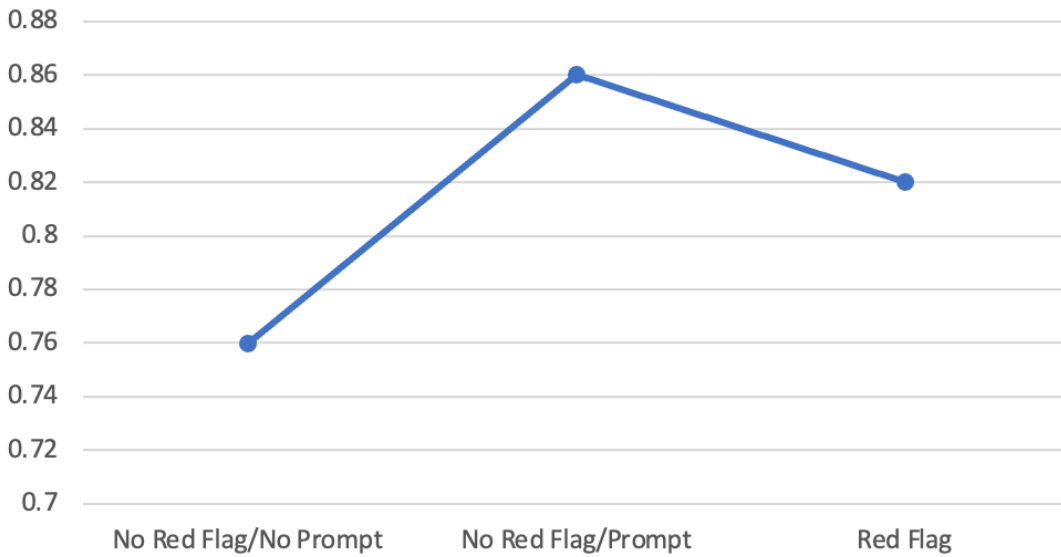


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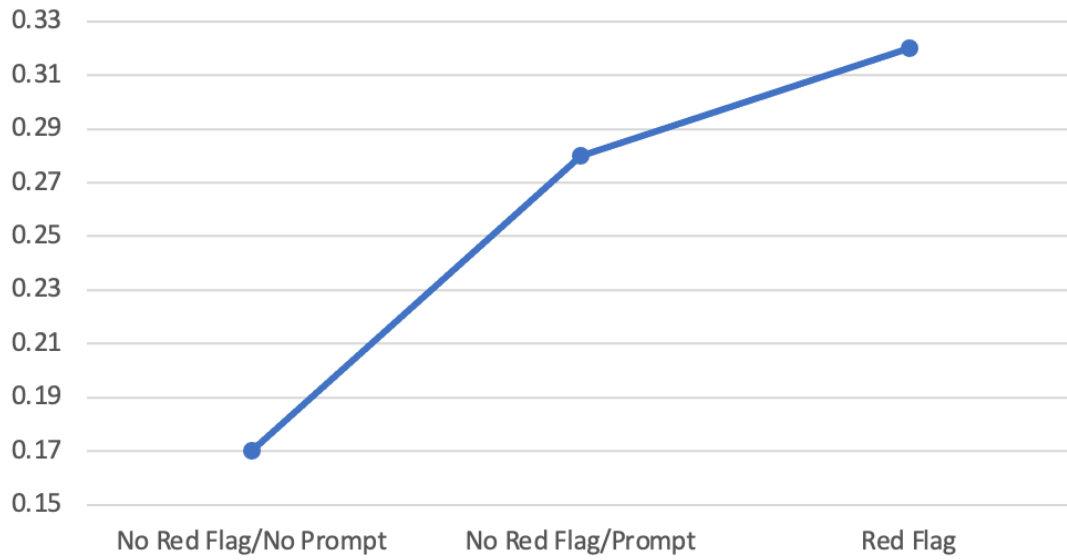
**Panel C: *Planned Indicators of Obsolescence Proportion***



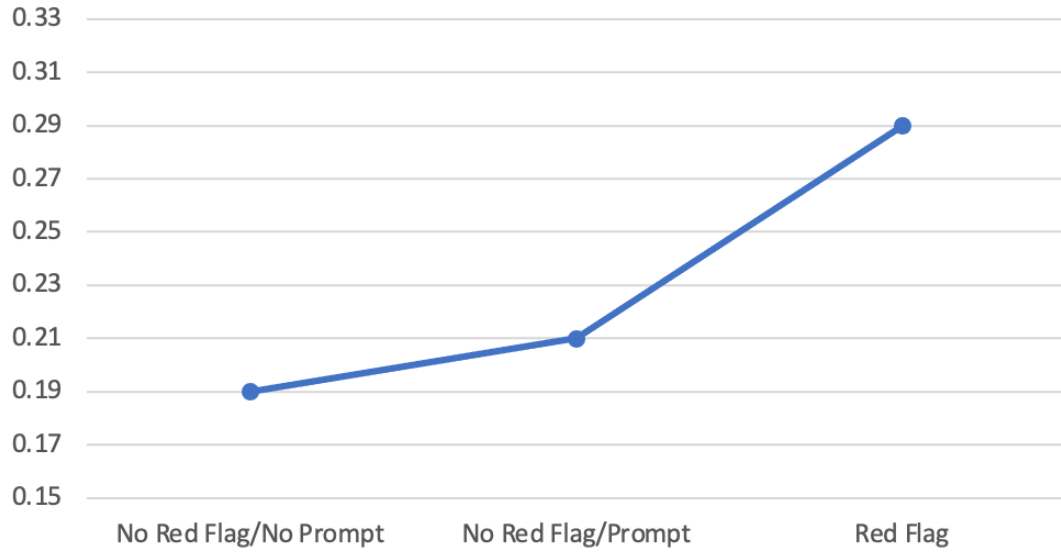
**Panel D: *Actual Indicators of Obsolescence Proportion***



**Panel E: *Planned Negative-Assumption Proportion***



**Panel F: *Actual Negative-assumption proportion***



See notes to Table 1 for variable definitions.

**TABLE 1**

**Results of Coded Auditor Questions <sup>a</sup>**

**Panel A: Descriptive Statistics: Mean, (standard deviation), [sample size] <sup>b</sup>**

	<i>No Red Flag/No Prompt A</i>	<i>No Red Flag/ Prompt B</i>	<i>Red Flag <sup>c</sup> C</i>	<i>Overall</i>
<b>Specificity</b>				
<i>Planned S3000 proportion</i>	0.71 (0.37) [22]	0.97 (0.13) [25]	0.95 (0.11) [22]	0.88 (0.26) [69]
<i>Actual S3000 Proportion</i>	0.75 (0.30) [22]	0.91 (0.19) [25]	0.89 (0.24) [23]	0.85 (0.25) [70]
<i>Planned Indicators of Obsolescence Proportion</i>	0.78 (0.24) [22]	0.86 (0.20) [25]	0.87 (0.18) [22]	0.84 (0.21) [69]
<i>Actual Indicators of Obsolescence Proportion</i>	0.76 (0.22) [22]	0.86 (0.17) [25]	0.82 (0.17) [23]	0.81 (0.19) [70]
<b>Negative-assumption Framing</b>				
<i>Planned Negative- assumption Proportion</i>	0.17 (0.23) [22]	0.28 (0.25) [25]	0.32 (0.29) [22]	0.26 (0.26) [69]
<i>Actual Negative- assumption Proportion</i>	0.19 (0.19) [22]	0.21 (0.22) [25]	0.29 (0.22) [23]	0.23 (0.22) [70]

**Panel B: Simple Contrasts (Hypotheses tests)**

	<i>No Red Flag/No Prompt vs Red Flag (A vs C)</i>			<i>No Red Flag: No Prompt vs Prompt (A vs B)</i>			<i>No Red Flag/ Prompt vs Red Flag (B vs C)</i>		
	<i>t</i>	<i>df</i>	<i>p-value</i> <sup>d</sup>	<i>t</i>	<i>df</i>	<i>p-value</i> <sup>d</sup>	<i>t</i>	<i>df</i>	<i>p-value</i>
Specificity									
<i>Planned S3000 Proportion</i>	3.47	68	0.001	3.93	68	<0.001	0.34	68	0.731
<i>Actual S3000 Proportion</i>	1.85	69	0.034	2.30	69	0.013	0.40	69	0.692
<i>Planned Indicators of     Obsolescence Proportion</i>	1.44	68	0.076	1.38	68	0.087	0.11	68	0.906
<i>Actual Indicators of     Obsolescence Proportion</i>	1.14	69	0.128	1.84	69	0.037	0.65	69	0.519
Negative-assumption framing									
<i>Planned Negative-     assumption proportion</i>	1.99	68	0.026	1.44	68	0.078	0.61	68	0.686
<i>Actual Negative-     assumption Proportion</i>	1.44	69	0.077	0.29	69	0.390	1.21	69	0.234

<sup>a</sup> The dependent variables are defined as follows:

*S3000 Proportion*: Proportion of questions specific to the S3000 (the product at risk of obsolescence) compared to total questions asked.

*Indicators of Obsolescence Proportion*: Proportion of questions about specific obsolescence indicators compared to total questions asked.

*Negative-assumption Proportion*: Proportion of negative-assumption framed questions compared to total questions.

<sup>b</sup> Two participants did not document any planned questions. Therefore, there are only 69 total observations for the planned question coded variables. One participant did not ask any actual questions, they only made statements. Therefore, there are only 70 total observations for the actual question coded variables. This individual is included in our analyses of planned questions.

<sup>c</sup> The *Red Flag* condition includes participants who were given the additional prompt and who were not. There are no significant differences between *Red Flag Prompt* and *No Prompt* on these variables, all p-values > 0.10.

<sup>d</sup> One-tailed p-value based on directional predictions.