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# An evaluation of root cause analysis use by internal auditors

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ABSTRACT

The objective of this study is to increase understanding of internal auditor use of root cause analysis (RCA). The IIA's Practice Advisory 2320–2: *Root Cause Analysis* (IIA 2011) states that RCA should be a core competency for internal auditors to provide insight and add value within organizations. However, little is known about internal auditor use of RCA in a profession where normative problem-solving theory and RCA frameworks potentially conflict with professional demands for independence and objectivity. We conduct in-depth interviews with 21 high-level internal auditors with RCA experience to understand use within the profession. The results suggest several overarching themes that have implications for policymakers, researchers, and practitioners. First, we find that internal auditors in practice believe that RCA is a very important tool within the profession. Second, although internal auditors generally claim to understand RCA, we find considerable variation in the ways they approach the construct and implement prescribed processes in practice. Finally, the results indicate that while RCA use is reasonably prevalent among internal auditors, knowledge constraints, resource limitations, and concern about independence and objectivity create considerable variation in terms of RCA approach, rigor, and efficacy within organizations.

## 1. Introduction

Internal auditors serve an evolving variety of assurance and consulting roles within organizations that require a diverse skillset to add value within organizations.[1] Policymakers have established internal auditor performance of root cause analysis (RCA) as a key skill within the profession. Wilson, Dell, and Anderson (1993) define RCA in a problem-solving context as a process of identifying the most basic reason for an undesirable condition or problem that, if corrected or eliminated, would have prevented it from existing or occurring. The Institute of Internal Auditor's (IIA) Practice Advisory 2320–2: *Root Cause Analysis* (IIA 2011) states that "a core competency necessary for delivering insights is the ability to identify the need for root cause analysis and, as appropriate, actually facilitate, review, and/or conduct a root cause(s) analysis" (para. 2). However, the literature provides evidence that internal auditors sometimes fail to fulfill expectations in the area. For example, Miller and Smith (2011) provide evidence of a gap between what is expected from internal auditors related to RCA use and what they actually provide. After an investigation of fraudulent sales practices at Wells Fargo, the board of directors concluded that internal auditors had access to information regarding sales practice problems, but

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[1] Roussy and Perron (2018) review the internal audit research literature and find "no consensus regarding the roles IA should play or even of its actual role in organizations", concluding that "The IIA has failed to offer a way out of this impasse, even compounding the problem by amending its standards to allow internal auditors to assume other responsibilities…according to the needs of the organization" (p. 359).

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"did not attempt to determine the root causes of unethical sales practices" (Wells Fargo 2017p. 91).

The objective of this study is to evaluate internal auditor use of RCA in the profession as called for by policymakers. This research is motivated in large part by the lack research on RCA use by internal auditors and the factors that affect their performance in the area given various and sometimes conflicting professional calls for independence, objectivity, professional skepticism, and due care. In an internal audit context, extant studies focus on internal audit quality (e.g., criteria and perceptions) and roles in organizational governance (Gramling, Maletta, Schneider, and Church 2004; Roussy and Perron 2018). For example, Barua, Rama, and Sharma (2010) discuss how internal auditors can assist audit committees by providing independent investigations and evaluation of accounting practices, processes, and controls. However, extant research provides little insight into internal audit practice. Roussy and Perron (2018) provide a structured literature review with 91 internal audit studies from 2005 to 2017 and find that "only 13 of these papers addressed internal audit practice and…scholars know very little about how internal auditors behave" (p. 373).

Although RCA has existed and been studied in various domains (e.g., manufacturing, healthcare) over the years, it is just starting to emerge in the auditing research literature as a critical component of audit quality (DeZoort, Doxey, and Pollard 2021; Trotman and Duncan 2018; Rose 2016; Miller and Smith 2011). The internal audit profession provides a unique environment for RCA benefits to manifest given internal auditors' multidimensional assurance and consulting roles. For example, the prescriptive literature (e.g., The IIA 2009, 2017, 2019; Deloitte 2016; Heath 2015) strongly emphasizes that internal auditors should maintain independence and pursue objectivity, professional skepticism, and expertise in their decision-making as they seek to add value within organizations.[2] RCA, by definition, is designed to be a problem-solving tool that promotes the questioning and critical thinking at the heart of professional skepticism and objectivity that is uniquely prescribed within the profession. However, RCA guidance for internal auditors (e.g., IIA 2011) also encourages extensive interaction with management during root cause identification and solution implementation that can blur roles and challenge professional calls for independence and objectivity.

We address our research objective using in-depth interviews with 21 senior-level internal auditors with experience using RCA in practice. Interviews with highly experienced professionals from a variety of companies, industries, and sectors provide an opportunity to gain meaningful, detailed insight into contextualized RCA use in a way that is difficult to obtain through surveys (Westermann, Cohen, and Trompeter 2019; Malsch and Salterio 2016). Dostal's (2015) review of problem-solving theory highlights that the ability and willingness to solve problems cannot be assumed and that "it is desirable to induce it with the help of appropriate resources" (p. 2801). RCA provides an approach to problem solving that can improve internal auditor ability and willingness to address key audit and business problems and reduce costly problem reoccurrence. We base our interview protocol in the problem-solving paradigm using a theory-based RCA model (Okes 2009) that develops distinct steps with both a diagnostic ("find it") phase and a solution ("fix it") phase.

Our findings reveal three overarching themes that extend understanding of internal auditor use of RCA and provide a basis for researchers, policymakers, and practitioners to pursue best practice use. First, we find strong evidence that internal auditors agree that RCA is a very important tool for internal auditors. Second, although internal auditors generally claim to understand RCA as a concept and audit tool, we find considerable variation in what internal auditors believe RCA is and how it is used within organizations. Finally, the results indicate that while RCA use is reasonably prevalent among internal auditors, knowledge gaps, resource constraints, and professional concerns about compliance with professional standards (e.g., independence, objectivity) create considerable variation in terms of RCA approach, rigor, and efficacy within organizations.

The study's results have a number of implications for policy, practice, and research. From policy and practice perspectives, we provide evidence about the types and extent of RCA use by internal auditors, as well as the specific domains and tasks in which internal auditors apply RCA. The results also provide insight into RCA best and worst practices that can be considered by policymakers and practitioners evaluating ways to improve RCA guidance and close the gap between executives' expectations and internal auditors' performance (Miller and Smith 2011).

In terms of public policy, the results suggest the need for further consideration of what RCA is and should be as a prescribed "core competency" for internal auditors. Specifically, this study provides initial empirical evidence of how RCA affects the fundamental purpose of internal auditing as "an independent, objective assurance and consulting activity designed to add value and improve an organization's operations" (IIA 2017). For example, the findings raise questions and concerns about how the potential benefits of internal auditor involvement in RCA (e.g., identifying, implementing, evaluating solutions) conflict with extant calls for internal auditor independence and separation from management decision making. Internal auditors can possess critical domain and task-specific expertise needed to diagnose and solve the root causes of problems, so questions remain about whether internal and external stakeholders' best interests are served by restricting internal auditor RCA to only include diagnostic work and not solution management.

From a research perspective, we provide initial empirical evidence about RCA use by internal auditors in an environment where they are charged by policymakers with developing RCA skills as a "core competency" while remaining independent and objective in accordance with professional standards. The research literature lacks study of how internal auditors use RCA, the relative costs and benefits of use, and the factors affecting RCA's impact on audit quality. Our results increase understanding in these areas, provide insights into varied RCA use in the field, and help motivate and guide new research in the area using problem-solving theory and related RCA models from other domains.

[2] The IIA's International Standards for the Professional Practice of Internal Auditing indicates in Section 1100, *Independence & Objectivity*, that the "internal audit activity must be independent, and internal auditors must be objective in performing their work" (IIA 2017). Professional guidance also states that internal auditors "should provide advice, challenge and support" management decision making rather than make management decisions themselves (IIA 2009, p. 6).

The remainder of the paper is organized as follows. The next section provides a background and overview of RCA use across disciplines. The third section describes the experienced internal auditor sample and semi-structured interview method. The fourth section provides the interview results. Finally, the fifth section concludes with a detailed discussion of the study's policy, research, and practice implications.

## 2. Background and research questions

### 2.1. RCA origins

RCA was originally developed as a formal process in quality management engineering. The founder of Toyota, Sakichi Toyoda, is generally credited with inventing RCA in the 1950 s with development of the "Five Whys" method. Over the years, RCA use has been a useful tool across a variety of industries (e.g., manufacturing, healthcare, aviation) and objectives (e.g., safety, production quality control, risk management).[3] For example, the Federal Aviation Administration brought RCA into the aviation industry in the 1970 s with its Aviation Safety Reporting System. RCA emerged in the healthcare industry in the late 1990 s to investigate the large number of violations of patient safety and hospitalization standards.

In a business context, RCA has emerged as an important part of enterprise risk management (ERM). For example, Narvaez (2012) describes RCA in ERM in the context of both reactive and proactive risk assessment processes, including identifying causes of past and future risk events, understanding those causes, and ultimately working with solutions to prevent future problems from occurring. The American Society of Healthcare Risk Management (2015) provides an "RCA Playbook" that describes an ERM-based approach to RCA focused on dealing with causal factors throughout various ERM domains (e.g., clinical/patient safety, legal/regulatory, human capital).

### 2.2. RCA in the audit profession

Although RCA has received limited attention in the audit profession, internal audit policymakers have taken the lead in promoting and supporting RCA use as a means to solve problems and add value within organizations.[4] As summarized in Fig. 1, The IIA's Practice Advisory 2320–2: *Root Cause Analysis* (IIA 2011) goes beyond recommending that internal auditors use RCA to analyze issues to formally state that internal auditors should consider RCA a core competency that includes the ability to identify when RCA is needed and the ability to actually "facilitate, review, and/or conduct" an RCA to deliver insights.[5] Specifically, the Advisory states that:

> Auditors whose reporting only recommends that management fix the issue – and not the underlying reason that caused the issue – are failing to add insights that improve the longer-term effectiveness and efficiency of business processes and thus, the overall governance, risk, and control environment. (IIA 2011, section 2).

The Advisory further asserts that internal auditor use of RCA should promote the type of questioning mind and critical thinking that is at the heart of professional skepticism, helping to "ensure biases are minimized, assumptions are challenged, and evidence is fully evaluated" (section 3).[6]

The IIA (2011) also provides specific examples of RCA methods for internal auditors to consider, including Five Whys, Fishbone Diagrams, Failure Mode and Effects Analysis, Fault Tree Analysis, SIPOC (suppliers, inputs, processes, outputs, customers) diagrams, Flowcharting of process, system, and data flows, Critical to quality metrics, Pareto charts, and statistical correlations.[7] Recent research suggests that the type of RCA method used affects auditor judgment and decision-making. For example, DeZoort et al. (2021) find that external auditors using the Five Whys or Fishbone Diagram method are more likely to identify control-related root causes and judge a financial misstatement to be more material than auditors who are not using those structured methods. They also find that RCA effects on auditors' materiality judgments depend on the fit between the RCA method used and auditor cognitive style (i.e., sequential vs. global), suggesting the importance of considering the extent that varying RCA methods match the way individuals think and process

[3] Romano, Murino, Asta and Costagliola (2013) describes five primary RCA origins across multiple industries and sectors, including safety-based RCA, production-based RCA, process-based RCA, failure-based RCA, and systems-based RCA.

[4] In an external audit context, the PCAOB (2014) describes the need for RCA because many issues are recurring and "it is important for audit firms to take steps to gain a clearer understanding of the causes that underlie these deficiencies and then take appropriate remedial actions" (p. 3). Consistent with PCAOB concern, Cohen et al. (2020) interviewed audit partners and find they admit having difficulty identifying the root causes of control deficiencies. Despite these findings, professional guidance for external auditors does not mention RCA or provide support for its use during quality control reviews or fieldwork.

[5] The IIA Practice Advisory amends the profession's *International Standards for the Professional Practice of Internal Auditing* Standard 2320, *Analysis and Evaluation*, which states that "internal auditors must base conclusions and engagement results on appropriate analyses and evaluations" (IIA 2017).

[6] The IIA (2019) encourages internal auditors to use professional skepticism to evaluate whether information is sufficient and appropriate to provide a reasonable basis for conclusions and/or recommendations.

[7] The RCA literature (e.g., Anderson and Fagerhaug 2006; Foster, 2018; Robitaille 2004; SixSigma, 2017) provides detailed descriptions of specific RCA methods. The IIA (2011) recognizes that although simple RCA techniques are often useful, more elaborate methods are appropriate when the "time and potential action (i.e., costs) necessary to correct the root cause have the potential benefits to be justified by the level of risk and process optimization that can be achieved" (para. 8).

**IIA Practice Advisory 2320-2: *Root Cause Analysis* (IIA 2011)**

**Primary Related Standard**
**2320 – Analysis and Evaluation -** Internal auditors must base conclusions and engagement results on appropriate analyses and evaluations.

1. Root cause analysis is defined as the identification of why an issue occurred (versus only identifying or reporting on the issue itself). In this context, an issue is defined as a problem, error, instance of noncompliance, or missed opportunity.

2. Auditors whose reporting only recommends that management fix the issue — and not the underlying reason that caused the issue — are failing to add insights that improve the longer-term effectiveness and efficiency of business processes and thus, the overall governance, risk, and control environment. A core competency necessary for delivering insights is the ability to identify the need for root cause analysis and, as appropriate, actually facilitate, review, and/or conduct a root cause(s) analysis.

3. Internal audit can be the ideal group to analyze issues and identify the root cause(s) given their independence and objectivity. This perspective helps ensure biases are minimized, assumptions are challenged, and evidence is fully evaluated. Additionally, internal auditors - by working across various reporting chains and departments of an organization - may have developed a broad and deep understanding of the underlying issue(s) that may exceed that of any single member of management, which makes them best positioned to analyze the issue. In circumstances where the root cause of an issue is a result of actions or inaction of management, it is critical to use an objective party, such as internal audit, to investigate and report back to senior management.

4. Root cause analysis benefits the organization by identifying the underlying cause(s) of an issue. This approach provides a long-term perspective for the improvement of business processes. Without the performance of an effective root cause analysis and the appropriate remediation activities, an issue may have a higher probability to reoccur. Root cause analysis helps prevent additional rework and proactively addresses future recurrences of the issue(s). Root cause analysis may be considered in any number of situations, such as those involving a surprise risk event, process failure, asset damage or loss, production stoppage, safety incident, quality degradation, or customer dissatisfaction. It is important to recognize that there are often multiple related or unrelated causes of an issue.

5. The resources spent on root cause analysis should be commensurate with the impact of the issue or potential future issues and risks.

**Fig. 1.** Overview of IIA Guidance for RCA.

information.

Miller and Smith (2011) provide initial survey evidence that internal auditors often do not meet executives' expectations in terms of delivering RCA-based insights that lead to action plans that help management and the organization. However, despite professional guidance, training opportunities, and research suggesting RCA can improve business processes, little is known about the extent that internal auditors actually understand and use RCA in practice given their assurance and consulting objectives and need for independence and objectivity. Accordingly, our first research question asks:

RQ1: Do internal auditors understand and use RCA as prescribed?

### *2.3. RCA as a Problem-Solving tool*

RCA represents a specific class of problem-solving.[8] Newell and Simon (1972) provide an information processing perspective on problem-solving based on problem-space theory. This approach to problem-solving starts with an identification of the problem space, including a clear focus on both initial and goal state to define the boundaries of the space. After setting the problem space, the next step involves specifying intermediate states between the initial- and goal-state boundaries. Problem-solvers should then identify what

[8] Mayer (1990) describes problem solving as a system of cognitive processes that focus on transforming an initial problem state to a revised final state when a solution is not obvious.

needs to be done, developing a procedure involving a series of "moves" that leads problem-solvers from one state to the next within the problem space. This process also requires careful consideration of resources (e.g., expertise, time, access, materials) needed to make progress toward the goal state.

Traditional problem-solving models focus on a critical thinking process that includes problem identification, data collection and analysis, alternative solution exploration and analysis, solution selection, solution implementation, and evaluation of results. Voss and Wiley (2006) review the research literature related to reasoning, problem solving, and expertise and conclude that "strong" problem-solving methods impose structure and lead to specific solutions. They further highlight that expert problem solving typically occurs in two phases, including an initial problem representation phase that is an "analysis delineating the causes of the problem" and a second solution phase that "expresses how the problem should be solved and the justification of the solutions" (p. 578).

In an RCA context, Okes (2009) adopts a deductive information processing perspective in a problem-solving framework known as the DO IT$^2$ model.[9] This 10-step framework includes distinct diagnostic ("find it") and solution ("fix it") phases based on theories of problem structuring (Smith 1988), situational awareness (Banbury and Tremblay 2004; Endsley 1995), and expertise (Rose, McKay, Norman, and Rose 2012; Libby 1995; Libby and Luft 1993). Okes (2009) suggests that ineffective RCA often results from a lack of prescriptive guidance that can be overcome by using a theoretical model that describes the discrete mental activities required to complete the process.

In the diagnostic phase, the DO IT$^2$ model consists of a sequential series of steps that include defining the problem, understanding the process, identifying possible causes, collecting data, and analyzing data before determining the root cause.[10] After settling on a root cause, the model shifts to the solution phase that includes identifying possible solutions, selecting a solution, implementing the solution, evaluating effects, and institutionalizing the change. We evaluate the breadth and depth of RCA use by internal auditors using an adapted version of Okes (2009) RCA model that balances the diagnostic and solution phases of RCA around the central event of root cause identification (see Fig. 2). This model provides a detailed and relatively comprehensive framework for evaluating internal auditor use of RCA in practice.

The DO IT$^2$ model also provides a basis for considering the scope of internal auditor RCA and how it impacts their professional skepticism, independence, and need to avoid making management decisions. For example, although The IIA's definition of RCA does not explicitly discuss internal auditor involvement in the solutions phase, its professional guidance does suggest internal auditor involvement in both the diagnostic phase and the solutions phase of RCA. Specifically, The IIA's RCA Practice Advisory highlights solutions phase involvement when it discusses internal auditors providing "specific concrete observations and recommendations for process and control improvements" (IIA 2011, sec 6d). The Advisory also states that internal audit charters and reporting should clearly emphasize the need for management to assess internal auditors' RCA-based recommendations. We use the 10-step model as a guide to evaluate this role ambiguity and better understand the extent of internal auditor involvement in RCA. Asked formally:

RQ2: To what extent do internal auditors implement RCA as a problem-solving tool?

Finally, although the objective of any RCA should be to identify the root cause of a problem and then implement and evaluate a solution, little is known about internal auditors' experiences using RCA and their professional opinions about best and worst practices in the area. Memari (2018) describes numerous benefits of identifying and sharing best practices, including nurturing a learning culture, filling knowledge gaps, generating creative and innovative ideas, improving decision-making, boosting efficiency and competence, and encouraging a supportive community. Internal auditor approaches to RCA use likely vary a great deal in practice given the variety of RCA methods suggested in the literature and relative lack of detailed guidance for implementation and evaluation. Accordingly, our final research question focuses on specific RCA methods and techniques that internal auditors consider best and worst in a domain where judgment and decision-making quality is critical and process transparency is lacking. Such evaluation is particularly important given the need to consider whether the potential benefits of conducting RCA (e.g., solution implementation, process gains, sustainability) justify the use of critical scarce resources (e.g., people, time). Asked formally:

RQ3: What RCA best and worst practices do internal auditors identify based on their experiences?

## 3. Method

### 3.1. Interviewees and protocol

We conducted semi-structured interviews in 2019 with a group of 21 highly experienced internal auditors representing 17 organizations in the U.S. with a history of using RCA in their IADs (Internal Audit Departments).[11] The results in Table 1 provide an

[9] Okes (2009) provides an overview of alternative RCA models and describes their limitations (e.g., limited focus on diagnosis, insufficient detail about discrete mental activities required) when motivating and explaining the DO IT$^2$ model. We use the DO IT$^2$ framework as a guide for interview protocol development because it provides the most detailed and comprehensive RCA model we found in the literature. Although The IIA's RCA Practice Advisory (2011) suggests internal auditor involvement in both the diagnostic and solution phases of RCA, it does not include a specific formal framework describing specific steps that internal auditors should consider.

[10] Although the model appears to be linear, Okes (2009) emphasizes that the diagnostic phase steps should be viewed as an iterative process where users continuously revisit and revise problem definition to manage focus and attention.

[11] Consistent with prior studies providing monetary incentive to encourage participation (e.g., Westermann et al. 2019; Brown et al. 2019), we told each interviewee that, with their consent, we would make a donation to an accounting scholarship for a student in need. Every interviewee consented to this donation prior to the interview.

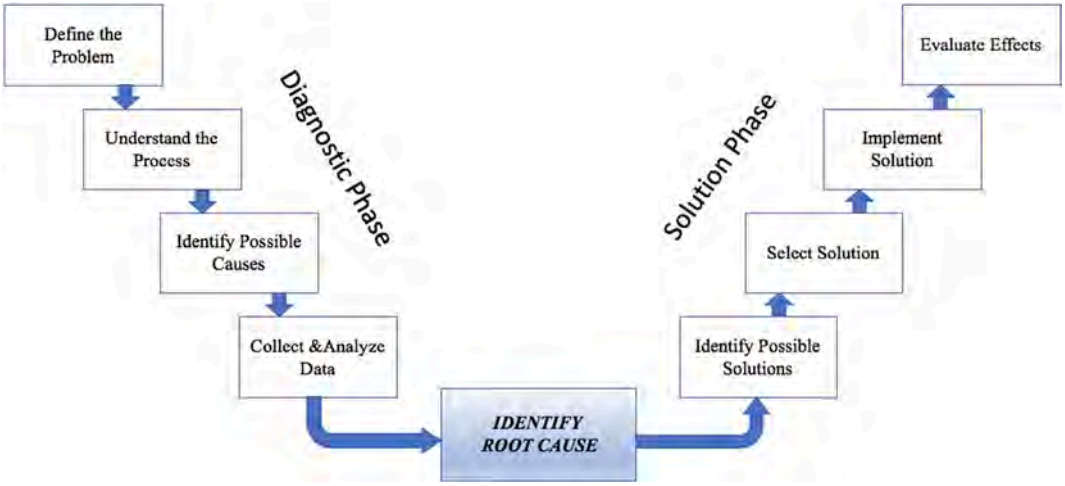


**Fig. 2.** RCA Problem-Solving Model*. * adapted from DO IT$^2$ Problem-Solving Model for RCA (Oakes 2009).

overview of the interviewees, who have extensive internal audit experience (mean = 16.3 years; S.D. = 8.7 years; range = 5–33 years) and represent a wide variety of domestic and multinational companies, industries, sectors, and IADs.[12] The total assets of the companies range from $500 million to $1.9 trillion with a mean of $217.8 billion. The IAD size range is 5–344 professionals, although the interviewees indicate they co-source work as needed to manage labor and expertise constraints. The interviewees also report that their departments' audits and RCA efforts focus primarily on financial reporting, operational, and compliance issues.

We developed a standardized interview guide to help ensure consistency in approach and coverage of themes (Trotman and Duncan 2018). The interview questions were designed to gain in-depth understanding of specific methods, domains, costs, and benefits associated with RCA use. The body of the interview protocol tracks the sequential elements of our adapted theoretical DO IT$^2$ model and includes open-ended, neutral questions to allow for "complete and consistent coverage in each interview of themes under study [while] minimizing researcher intrusion" (Lillis 1999, 84). We consulted with experienced internal auditors during protocol development to ensure question relevance, thoroughness, and understandability. We also conducted two trial interviews to assess protocol effectiveness and efficiency given the study's specific research objective.[13] Consistent with Pratt (2009), we provide the interview protocol in the Appendix.

Interviewees were identified using professional contacts from various sources, including The IIA, Boards of Advisors, and LinkedIn (Westermann et al. 2019; Trotman and Duncan 2018; Power and Gendron 2015; Tremblay and Gendron 2011). The interviews were conducted via online recorded videoconference or phone call and lasted an average of 33 min.[14] All of the interviewees consented to have their interviews recorded.

### 3.2. Analysis approach

We used an online transcription program to convert the audio recordings to text before analyzing response content. We provide and interpret select quotes by our interviewees to highlight specific findings and provide detailed insights (Westermann et al. 2019). Both researchers approved the specific quotes used in the paper. Further, we conducted deviant analysis and member checking to increase the trustworthiness of our findings. Specifically, Malsch and Salterio (2016) describe deviant (or negative case) analysis as "searching for, analyzing, and reporting on elements in the data that do not support, or appear to contradict, patterns of explanations that are emerging from data analysis" (p. 13). We provide specific contradictory quotes and interpretations as part of our analysis to provide tension and balance the presentation of the results. Member checking also involves assessing "data categories and/or analytic

[12] We invited 22 internal auditors to participate in the interviews. One invitee did not respond to our request, resulting in a response rate of 95 percent.

[13] During the trial interviews, we noted that the interviewees sometimes answered multiple protocol questions in their responses to a single question. To avoid unnecessary redundancy and wasting valuable time, we used discretion within the interviews and skipped forthcoming questions when they were addressed in earlier responses.

[14] Westermann et al. (2019) discuss criticism of phone interviews as less personal than in-person interviews and conclude that the frequent use of phone-based interviews in accounting studies (e.g., Cohen, Krishnomoorthy, and Wright 2017; Brown, Call, Clement, and Sharp 2015; Westermann, Bedard, and Earley 2015) reflects the fact that "phone interviews are a cost-effective means of collecting data among highly dispersed and 'in-demand' individuals" (p. 9).

**Table 1**
Interviewees (n = 21).

| Auditor # | Title | Gender | IA Experience (Yrs) | Industry | Entity Type* | Assets | IAD Size |
|---|---|---|---|---|---|---|---|
| 1. | CAE/VP IA | Male | 32 | Gaming | Public(D) | $25.5b | 75 |
| 2. | CAE | Female | 14 | Insurance | Public(D) | $943.4 m | 8 |
| 3. | CAE | Male | 28 | Banking | Public(D) | $125.3b | 140 |
| 4. | IA Executive | Male | 5 | Banking | Public(D) | $125.3b | 140 |
| 5. | Senior Lead Auditor | Male | 6 | Banking | Public(D) | $1.9 t | 75 |
| 6. | Global Manager for Compliance | Male | 12 | Pharmaceutical | Public(M)Mul | $157.3b | 100 |
| 7. | Global Finance Compliance Director | Male | 14 | Pharmaceutical | Public(M) | $157.3b | 100 |
| 8. | SVP-IA | Male | 12 | Real estate | Private(M) | $14.7b | 6 |
| 9. | IA Director | Female | 24 | Healthcare | NFP(D) | $500 m | 7 |
| 10. | CAE | Male | 13 | Service | Public(M) | $52.3b | 220 |
| 11. | Sr. Director – SEC Reporting | Male | 14 | Service | Public(D) | $8.3b | 40 |
| 12. | Sr. Managing Director – IA Group | Female | 33 | Insurance | Public(M) | $498.3b | 300 |
| 13. | Head of Professional Practices – IA | Female | 21 | Insurance | Public(M) | $498.3b | 300 |
| 14. | IA Senior Manager | Female | 8 | Insurance | Public(M) | $498.3b | 300 |
| 15. | IA Manager | Female | 5 | Manufacturing | Public(M) | $1.3b | 7 |
| 16. | IA Manager | Female | 17 | Mining | Private(M) | $820.1 m | 5 |
| 17. | Senior Audit Director | Male | 7 | Retail | Public(M) | $226.6b | 344 |
| 18. | Director | Female | 16 | Accounting | Private(D) | N/A | 25 |
| 19. | Director of Audit | Male | 26 | Education | Govt(D) | $9.6b | 15 |
| 20. | Director, Internal Audit | Male | 20 | Retail | Public(D) | $36.7b | 39 |
| 21. | Director, Internal Audit | Male | 14 | Healthcare | Public(M) | $19.4b | 21 |

* (M) = multinational; (D) = domestic.

categories" using the evaluations by the individuals from which the data were obtained (Malsch and Salterio 2016). We sent the interviewees a copy of their interview transcripts and a draft copy of the paper for review, comments, and suggestions.[15]

Finally, we carefully considered data saturation in the study using both the interviewees' responses and our theoretical RCA model. Malsch and Salterio (2016) define data saturation as the point when interviews no longer provide new insights into the research question.[16] For example, we designed our interview protocol to cover the items identified in our adapted RCA problem-solving model (see Fig. 2). After completing each interview, we reviewed the responses, compared them to prior interviews, and highlighted unique new responses to the summary of prior responses. After the 10th, 15th, and each subsequent interview, we examined the number of unique new responses we received for each question. After the 20th and 21st interviews, we found little to no new content and concluded we had reached data saturation.

## 4. Results

The interview results provide a basis for addressing our three primary research questions related to internal auditor use of RCA. Similar to Griffith, Hammersley, and Kadous (2015), we provide descriptive and theory-based analysis into internal auditors' RCA use by identifying and examining response patterns and recurring themes for further consideration by researchers, policymakers, and practitioners.

RQ1: Do internal auditors understand and use RCA as prescribed?

The results for our first research question indicate considerable variation in familiarity and experience with RCA. Most of the interviewees claim a high level of familiarity and experience in the area, with comments like "RCA is something that's pretty ingrained conceptually in all of the work that we do" (Interviewee #17).[17] The interviewees also consistently agree that internal auditors are (and should be) responsible for conducting RCA within their organizations. Interviewee #1 provides a representative comment, noting that "internal auditors are responsible for determining root causes of problems…that is what we need to deliver to management." Further, Interviewee #5 states "If you don't understand the root cause of what's happening, all you're really doing is fixing a symptom.".

Despite finding that internal auditors generally claim to understand and use RCA, several interviewees admit to lacking familiarity and experience in the area. For example, Interviewee #16 candidly admits that even with 17 years of internal audit experience "I've

[15] Consistent with prior interview-based research (e.g., Clune, Hermanson, Tompkins, and Ye 2014), we edited some quotes used in the paper to remove extraneous terms, phrases, and sentences to clarify text and manage paper length. The edits are non-substantive, and the interviewees provided no clarifying comments after their reviews of the paper.

[16] Malsch and Salterio (2016) conclude that saturation in audit-based field research generally occurs between 15 and 30 interviews representing at least 10 companies.

[17] A number of qualitative studies (e.g., Dodgson, Agoglia, Bennett, and Cohen 2020; Westermann et al. 2015) use labels to characterize the prevalence of findings. We follow Westermann et al. (2015), who use "the terms 'most', 'many', and 'a majority of' when referring to a percentage of partner responses greater than 60 percent, 'about half' between 41 and 60 percent, 'some' between 21 and 40 percent, and 'few' for fewer than 20 percent'' (p. 870).

really never done anything formally defined as RCA." Follow-up discussions provide evidence that these interviewees link their unfamiliarity and inexperience with a lack of awareness of existing RCA training and guidance in the profession:

> I confess that RCA is not something I've been formally taught. When you reached out to me, I was very keen to get involved because I'd actually like to learn what exactly is out there. (Interviewee #21)
> If there are any training opportunities available, I would use them tomorrow if you pointed me in the right direction because it would give my auditors tools in terms of how to do it. (Interviewee #1)

A number of comments highlight the challenge of trying to conduct RCA with internal auditors that lack requisite expertise in the area. Follow-up discussion in the area reveals that auditor turnover is an obstacle to sustaining effective and efficient RCA within IADs. We find that while the interviewees want to conduct rigorous RCA to add value within their organizations, some are frustrated by auditor turnover effects. Interviewee #11 notes that "We are in a market where there is auditor turnover right and left…my number of go-to folks who have RCA ability is limited." Another interviewee provides a similar sentiment and adds concern about bringing external auditors in from public accounting:

> We have a lot of turnover and tend to bring in people from the outside…if they're coming from the Big Four and have been doing SOX work, RCA is very different for them and it takes time to get them up to speed. (Interviewee #20)

The interviewees also generally indicate that RCA use by internal auditors improves their professional skepticism as suggested by The IIA. Specifically, the results strongly suggest that RCA enhances internal auditor efforts to understand underlying issues and processes, gather evidence, consider alternatives, critically analyze evidence, and communicate with key stakeholders. Example comments include:

> If you're teaching someone that they need to be digging in and asking more questions and not accepting the first answer they get, then they have a duty to keep walking down the path to sure they get to the right answer. I would say that improves professional skepticism. (Interviewee #17)
> In terms of really thinking through the root cause itself, understanding the issue, and truly making sure that it makes sense…I see that improving professional skepticism. (Interviewee #18)

Interestingly, a few interviewees do not find that RCA improves professional skepticism. Follow-up discussions provide evidence that most of these interviewees interpret professional skepticism in different ways, consistent with Nolder and Kadous's (2018) dual conceptualization of skepticism as both a mindset and attitude. Some internal auditors distinguish professional skepticism from critical thinking and assessment of evidence, even though these processes are commonly considered formative dimensions of mindset skepticism (e.g., Nolder and Kadous 2018; Hurtt, Brown-Liburd, Earley, and Krishnamoorthy 2013; Nelson 2009). For example, Interviewee #4 considers RCA to be more about "critical thinking than professional skepticism…and critical thinking is one of the most importance competencies we look for.".

Evidence of RCA affecting skeptical attitudes emerges in the comments describing evaluative beliefs, feelings, and intentions. For example, the interviewees suggest that RCA increases concern about the risk of material misstatement in financial reporting, regulatory noncompliance, audit committee scrutiny, and the efficacy of management's plans to address root causes. Interviewee #17 provides an example of such attitude skepticism by considering management's action plan in RCA and asking "Do we think this (plan) will actually mitigate the risk or address the root cause? …We reject an action plan if we don't think it's sufficient." Prior research also suggests that attitude skepticism manifests in auditors' intentions to conduct additional tests (Glover, Prawitt, Schultz, and Zimbelman 2003), seek additional explanations (Bennett and Hatfield 2013), and increase sample sizes to gather sufficient appropriate evidence. Interviewee #7 provides evidence of such attitude skepticism when emphasizing that RCA prompts the simple, but critical question "Do I need to escalate this issue?".

A few interviewees do highlight the potential for RCA to actually impair professional skepticism. For example, Interviewee #1 warns that, while RCA should increase professional skepticism through the Q&A used to identify a root cause, "the process could actually reduce skepticism" among internal auditors after root cause identification. Another interviewee suggests that RCA can help prevent internal auditors from being too skeptical and overanalyzing issues:

> RCA can actually show that things are not as bad as they appear. There are many reasons why things are the way they are. The more you understand that the more you say, 'Oh, I understand how we got here.' RCA can help prevent auditor skepticism from going too far to assume everything's broken. (Interviewee #20)

Overall, the first research question results indicate general agreement that RCA is very relevant and important for internal auditors. However, we also find considerable variation in familiarity and experience with RCA. While some interviewees indicate that RCA is clearly ingrained in their work to manage problems within the organization, others admit that they lack knowledge and experience in the area. We also find interesting, varied perceptions about the impact of RCA use on internal auditor professional skepticism, with some interviewees indicating that RCA increases professional skepticism and others highlighting its potential to actually reduce internal auditor skepticism.

RQ2: To what extent do internal auditors implement RCA as a problem-solving tool?

We use the RCA problem-solving model in Fig. 2 as a guide for assessing internal auditor implementation of RCA in practice. The model provides a theory-based and relatively comprehensive framework for evaluating multistage RCA that includes both a diagnostic phase and a solution phase. We evaluate the interview results related to each model step in order given concern about the risks associated with skipped and poorly executed steps with RCA (Peerally, Carr, Waring, and Dixon-Woods 2017; Wilson 2014).

***Diagnostic "Find it" Phase.***

1- Define the problem.

The IIA's RCA Practice Advisory (2011) highlights that internal auditors need to consider identified issues both within and beyond the internal audit context to define the problem and evaluate whether the projected benefits of RCA justify the costs. Our findings generally indicate that internal auditors have the ability to define the problem in a way that justifies conducting RCA. For example, Interviewee #10 describes an IAD where internal auditors define problems and issues in an environment where "RCA is baked in." Similarly, another interviewee describes:

> Anytime that we identify an issue or problem, every one of our auditors is expected to challenge it, identify the root cause, and evaluate why there is no control to mitigate the risk or why this control broke. (Interviewee #5)

Most of the interviewees also indicate that their IAD controls the decision about when to use RCA. Interviewee #15 states simply that "once we've identified a real issue, we are the ones who decide to conduct RCA." Follow-up discussions reveal that internal auditor control over the RCA decision sometimes occurs because management lacks requisite expertise in the area. For example, Interviewee #20 indicates that "management is not familiar with RCA." Only a couple of interviewees describe management as being actively involved in authorizing and/or encouraging RCA. One Chief Audit Executive (CAE) describes working for an organization where management prompted internal audit to extend its duties to include RCA:

> What I heard when I came here is that my team was not doing RCA, but instead identifying issues and simply telling management to fix it. Top management said, and rightfully so, 'We need more from you. You repeatedly bring up the same issues and we would like to fix them, but we need your help'. (Interviewee #1)

When internal audit issues emerge, The IIA (2011) highlights that resources spent on RCA "should be commensurate with the impact of the issue or potential future issues and risks" (para. 5). The interview results indicate that RCA generally requires months to complete, prompting keen awareness of the need to consider whether problems are important enough to invest resources in a formal RCA. Example comments include:

> We use a Risk and Control Matrix. It helps drive the scope to be the right scope so that you're not just going off in a bunch of tangents. You've got to stay focused. (Interviewee #10)
>
> There is cost/benefit analysis. Because if you had one instance that was very immaterial, maybe you don't need to look into that, but you need to track it for aggregation purposes. (Interviewee #4)

Alternatively, two interviewees provide a different perspective that suggests less concern about the cost/time involved with performing RCA. Interviewee #5 acknowledges time and resource constraints but says "we're expected to find issues and identify the root cause for to management." Similarly, Interviewee #8 notes that RCA "takes a while to get into, so there is a cost. However, if you want to have findings that are really meaningful for the business, you have to make that investment.".

Ultimately, the results suggest that internal auditors generally initiate RCA, define the specific problem to investigate, and recognize that RCA costs (e.g., people, time) should be commensurate with the impact on current and future risks (Parker 2017). The results also indicate that internal auditors appreciate the benefits of exerting effort to identify root causes of issues that impact financial reporting, operational, and compliance quality (Miller and Smith 2011). Further, the interviewees generally report that management lacks RCA expertise and welcomes internal auditor help in the area to address problems within the organization. No clear connections emerge between company characteristics (e.g., type, size, IAD reporting lines) and management familiarity or involvement in this initial stage of RCA.

2- Understand relevant processes.

After defining the problem, Okes (2009) suggests that individuals involved in RCA should engage in divergent thinking to broaden their views of the issue and understand the range of processes that are both relevant and susceptible to failure. Endsley (2006) highlights that these efforts are critical in developing the high level of situation awareness needed for effective RCA. The IIA's Practice Advisory on RCA similarly notes that internal auditors should be "searching for situational awareness and trying to understand all the circumstances those executing the process faced that led them to make their decisions" (IIA 2011, section 7).

The interviewees provide clear evidence that they appreciate the importance of understanding related business processes when conducting RCA. Example comments include:

> Understanding the underlying business processes is essential in RCA and the only way to really drive value in our organization. (Interviewee #10)
>
> When we identify an issue, we need to step back and really dive into the processes that underlie the root cause. It's something that we're expected to do on any issue that we identify. We should explain exactly why it's an issue, how it fits into the process, and then what we consider to be the root cause. (Interviewee #5)

Several interviewees extend this sentiment to highlight the risk of failing to adequately comprehend relevant processes prior to searching for a root cause and considering solutions. For example, Interviewee #18 commented that "If you don't have a good understanding of relevant processes, you may not accurately diagnose the problem. And then, your recommendations may not be appropriate." Another interviewee discusses the different RCA tools used to understand business processes:

> Sometimes we use Five Whys. Sometimes it's more of a diagram that we brainstormed as a fishbone, maybe to diagram as to what are the failures. And we use data to do a Pareto Chart. Or we use a Scatter to identify the outlying ones. So, there are lots of tools, but it's ultimately part of that scientific process to really understand the problem. (Interviewee #10)

When performing a Five Whys analysis concerning terminated employees' continued access to company systems, Interviewee #1 discusses the importance of including all internal stakeholders in RCA so they all have a deeper understanding of business processes. In this particular RCA, the IAD learned that multiple departments were affected by the problem, yet the separate departments did not have a clear understanding of how their actions impacted other departments within the company:

> When multiple groups are involved, they all need to be sitting at the table. It would be ineffective if you didn't have all the right parties sitting down going through the RCA. You've got to have every piece of the pie sitting at the table, so they hear the other sides of the issue and acknowledge what steps need to be taken within their purview. (Interviewee #1)

Overall, we find that the interviewees clearly appreciate the importance of obtaining a thorough understanding of business processes in RCA. These efforts not only help internal auditors identify root causes, but also lay the groundwork for extending RCA to pursue value-added insights and solutions.

3- Identify possible causes.

After obtaining an in-depth understanding of the processes underlying the problem, RCA transitions to a deductive effort to identify possible problem causes. This stage of RCA again emphasizes divergent thinking and proposal of multiple possibilities, prioritizing free-flowing, creative thought prior to focusing on data analysis and root cause identification. We find evidence that internal auditors use this prescribed approach in practice. For example, Interviewee #18 describes an RCA approach where "it's effective for our team to get together in a conference room and talk through things live to begin to think about potential root causes." In terms of specific RCA methods used, the results clearly indicate relatively mixed and ad hoc approaches to identifying root causes. The Five Whys method is the structured method mentioned most often, with comments including:

> We've taken classes and gone through structured approaches like the Five Whys and Fishbone analysis…the Five Whys is the technique most used. (Interviewee #17)
>
> We periodically provide issue-writing training for our auditors and talk through the Five Whys method. Keep going further, keep trying to find why this is happening? Is there something else behind it and keep asking that question. (Interviewee #14)

Beyond the Five Whys method, a number of interviewees report focal use of brainstorming in RCA, with many of the comments describing a relatively unstructured, ad hoc process. For example, Interviewee #3 stated "I call a group of people together, look at all the data, and we simply brainstorm to find a root cause." Alternatively, one CAE describes a more structured, formal RCA approach that involves brainstorming and complementary methods:

> We brainstorm initially, use the Five Whys approach, and do a Fishbone diagram to understand what all the possibilities are and then tie back into what was the root cause or causes that created the deficiency. Why are we having this problem? Oh, I have a people issue. OK. And this environment is not working. OK. And this process is failing…so you start laying it all out as to where are the failure points. You start to categorize stuff and then get a better understanding of what we're seeing. (Interviewee #10)

Several interviewees discussed the use of flowcharting to help understand processes related to the problem domain when conducting RCA. For example, Interviewee #9 emphasized that flowcharting of processes in RCA "is essential in providing a picture of what was going on to really find where the root cause is." Similarly, Interviewee #19 suggests that detailed flowcharting forces RCA stakeholders to "really sit down and take the time to understand things with the people who are in the operational areas.".

The results also provide evidence that some internal auditors are unsure about how to proceed in this stage of RCA. Some interviewees express desire for help when trying to identify possible root causes, with comments including:

> There's no real structure here. I don't know if you can be overly prescriptive about how to go about finding possible root causes. I think it would be helpful to have a more structured approach. (Interviewee #8)
>
> I've never seen anything structured to help us identify possible root causes. I would love to see something if anybody has it available. If you've seen anything in some of the interviews that you've done, I'd be really curious to see it. No one that I've worked with has seen anything formal in this area. (Interviewee #18)

A number of internal auditors also comment about the implications of failing to properly deduce possible causes. Specifically, several responses highlight concern about the risk of creating unnecessary conflicts within the organization and expending valuable resources on solutions that do not address real root causes. One CAE from the insurance industry describes such concern:

> If you don't drill down enough in RCA, it can cause friction with management. For instance, we had an employee gain improper IT access. On the surface, it appeared that the IT department gave someone access when they shouldn't have. And when you issue a finding like that, it causes problems when the IT department knows they granted the employee access because HR sent them the wrong request form. (Interviewee #2)

In summary, a couple of key themes emerge when evaluating internal auditor efforts to identify possible causes within RCA. First, we find considerable variation in the structured and unstructured methods that internal auditors use to identify root causes. Although some internal auditors use rigorous RCA methods, others use relatively unstructured, ad hoc approaches that have the potential to undermine judgment and decision quality (DeZoort et al. 2021). The diversity of approaches used in this stage of RCA raise important

questions about their relative efficacy and the factors that affect method efficacy. Second, the results provide evidence of a knowledge gap among some internal auditors who are unaware of structured RCA method alternatives and support resources within the profession. This finding suggests the need to promote and increase the accessibility of RCA training opportunities within and outside of the internal audit profession.

4- Collect and analyze data.

After identifying possible causes, the data collection and analysis stage of RCA shifts individuals toward convergent thinking that focuses on identifying the root cause of the problem. Specifically, data collection and analysis provide evidence of the specific cause and effect relationship that helps pinpoint the problem's root cause. The IIA's (2017) Performance Standard 2320, *Analysis and Evaluation*, requires internal auditors to "base conclusions and engagement results on appropriate analyses and evaluations." The interview results suggest a great deal of variation in the ways internal auditors collect and analyze data during RCA. For example, some of our interviewees describe formal, sophisticated processes in the area. Interviewee #10 notes "We have a fairly formal process that includes 20 different analytic tools to choose from. Measure, measure, measure, and then deliver the results after measuring." Another auditor provides additional insight:

> We log all items that are potentially noteworthy. Then we go through and ask which of those data points are potentially interrelated. Some we throw away and say it's just a one-off data point that doesn't relate to any other data point. We narrow the list and ask which of those data points relate to each other and what is the root cause. (Interviewee #3)

Although most of the interviews suggest some level of rigor in data collection and analysis, a few comments provide evidence of problems in this stage of RCA. For example, a couple of interviewees describe relatively ad hoc and inconsistent approaches to data collection and analysis. Further, several internal auditors describe specific concerns about evidence documentation in this area. The IIA's (2017) Performance Standard 2330, *Documenting Information*, states that "internal auditors must document sufficient, reliable, and useful information to support the engagement results and conclusions." However, when discussing documentation during data collection and analysis, Interviewee #1 states simply that "I hope it's been documented." Similarly, Interviewee #17 adds that "we have times where we do not do a good job of documenting RCA." In contrast, one CAE in the banking industry described the benefit of good RCA documentation when discussing an example involving problems with a new information system. Although the IAD's initial RCA led to reduced system failures and the belief that remaining issues were attributable to employees' unfamiliarity with a new system:

> A couple of years later, we came across a severe finding and we realized there were still a whole lot of issues in the system that had not been resolved. We had stopped doing RCA because we thought we understood what the problems were. The new finding caused us to go back and look at all the previous findings and start doing RCA again. It made me realize that you can get burned if you get lulled to sleep and stop conducting RCA. (Interviewee #3)

Overall, we find substantial variation in internal auditor approaches to data collection and analysis in RCA. Although variation in this stage certainly does not mean a given approach is necessarily inappropriate or in violation of professional standards, some of the interviewees describe very informal, ad hoc, and incomplete processes that they recognize lack rigor and create risk. These shortcomings within certain organizations seem to reflect a lack of understanding about RCA in general and the importance of rigorous data collection and analysis within RCA. They also seem to appear within organizations where the IAD has greater resource constraints related to personnel, training, and time.

5- Identify the Root Cause(s).

The midpoint of the RCA problem-solving model focuses on root cause identification as a prelude to transitioning users to the solutions phase of the process. One interviewee describes a specific Five Whys analysis example used to identify the root cause of an embezzlement:

1. Why were we the victim of an embezzlement? A bad actor among management.
2. Why was the bad actor able to embezzle? Internal controls were non-existent and/or insufficient.
3. Why were internal control non-existent and/or insufficient? Poor leadership that failed to follow policy.
4. Why did leadership not follow policy? There was no independent check on performance.
5. Why was there no independent check on performance? The internal audit staff is only two full-time employees among 4,000 employees. (Interviewee #9)

In the end, this RCA led to increased internal audit staff, who initiated independent verifications of cash, installation of cameras over cash registers, software upgrades for cash registers, and an independent cash reconciliation process for new leadership. Another interviewee describes how RCA was used to evaluate why his IAD was consistently exceeding established time budgets:

> We went through the Five Whys and ultimately found that because of increased turnover within our department, many of our auditors were not fully trained in all the RCA tools in our toolkit. The team developed training to help our people use the tools

> more effectively and we quickly saw great results. We are more timely getting things done. We've cut the number of days down. (Interviewee #10)

Interestingly, the RCA literature includes conflicting opinions about the need to identify a single root cause. Parker (2017) discusses concern about the "myth of the single root cause" and contends that prevalent RCA methods such as the Five Whys technique could lead internal auditors to believe that only one root cause exists.[18] Similarly, The IIA (2011) states, "It is important to recognize that there are often multiple related or unrelated causes of an issue" (section 4). We asked interviewees their thoughts about whether problems have a single root cause or multiple root causes. Some responses indicate clear support for the need to identify a single root cause:

> I argue that there is a single root cause. There might be several things that come together but usually there's one domino that starts the rest of the ones to fall… At the end of the day, I believe it should be one and one alone out there. (Interviewee #21)
> I don't think I've ever had an issue that had multiple root causes. I've always tended to drill down to one. There are always multiple symptoms to a root cause. In my mind, if you're finding more than one root cause, you really have to ask yourself: 'Am I still finding symptoms or am I finding that root cause?' (Interviewee #5)

In contrast, we also find that some internal auditors believe it is both possible and common to have multiple root causes. These comments tend to identify organizational and problem complexity as drivers for recognizing more than one root cause. For example:

> Because our company is so incredibly complex, I would be hard pressed to find any issue that we found that you could boil down to a single root cause. I know that if you're walking down this ladder of 'why' you're doing all of these things, you're trying to get to that silver bullet, but it's just hardly ever the case for us. It's usually multi-cause. (Interviewee #17)

Several internal auditors provide a more nuanced perspective on the issue, suggesting that the number of root causes to a problem is situation dependent. For example, one CAE states:

> We see both single and multiple root causes. I would tell you in a complex environment, when we're looking at what we believe to be a high-risk issue, it's usually multiple causes. There's not one simple thing. (Interviewee #10)

Ultimately, differences of opinion exist about whether a problem has a single root cause. Although further research and thought is needed in this area, it is important to recognize and assess the risk of Type 1 judgment errors (i.e., concluding there is a single root cause when there are multiple root causes) and Type 2 judgment errors (i.e., concluding that no single root cause exists when one actually does) due to incomplete and/or ineffective application of the RCA problem-solving model. For example, Type 2 errors could occur when an internal auditor does not adequately understand underlying processes and prematurely concludes that multiple root causes exist to a problem when, in fact, an underlying causal factor exists.

***Solution "Fix it" Phase.***

After root cause identification, the DO IT$^2$ model describes the importance of extending RCA to identify, implement, and follow-up on solutions. Internal auditors are uniquely qualified and positioned to add insights that improve business processes (IIA 2011), particularly when RCA reveals a problem that extends across multiple areas. Understanding the broader reach of the problem and its root cause can help the IAD facilitate management implementation of more effective and efficient solutions throughout the organization.

The IIA's International Professional Practices Framework (IPPF) Standard 2410, *Criteria for Communicating*, also provides that internal auditor communications must go beyond engagement objectives and scope to also include "applicable conclusions, recommendations, and action plans" (sec 2410.A1). However, professional standards for independence and objectivity proscribe internal auditors from extending their involvement to make management decisions and evaluate specific areas and operations where they had previous responsibility (IIA 2017, 2009). We evaluate the extent that internal auditors move beyond identifying root causes to actually working with management and other key stakeholders in the solution phase of RCA.

& 7- Identify possible solutions and select solution.

The first step in the solution phase involves identifying possible solutions and then settling on a best course of action to address the underlying problem. Internal auditors have the expertise (i.e., knowledge, ability, experience) to help ensure diligent consideration of possible solutions within RCA. Interestingly, despite professional constraints related to independence, The IIA's RCA Practice Advisory (2011) highlights that internal auditors' independence and objectivity position them to best "ensure biases are minimized, assumptions are challenged, and evidence is fully evaluated" within RCA (section 3).

Our interviews suggest that internal auditors recognize their critical role in the solutions phase of RCA, consistent with professional standards. For example, one interviewee notes that:

> Management loves the fact that we stay engaged and work with them after finding a root cause. As opposed to a group that came in, told them they have a problem, and then moved on without helping with the solution, we stay involved and help bandage things… management sees that as a value add. (Interviewee #10)

However, while the interviewees generally indicate that management recognizes their ability to add value by bridging gaps

[18] Parker (2017) also suggested that the Five Whys method also increases the risk that auditors will believe that they have permanently solved the problem if they find the true single root cause.

between departments and helping identify solutions to solve the problem, a number of comments explicitly recognize the need to maintain independence and leave solution decisions to management:

> We make recommendations in audit reports. We get explicit, saying, 'We recommend management do point one, two and three.' Now, the fix? That's driven by management…they have to design the controls. A lot of that's due to independence issues. (Interviewee #7)
>
> Management will ask for our advice and expertise, but we really try to maintain our independence as best we can and let management own the issue, problem, and solution. We might facilitate meetings…we work a lot as a facilitator to break down silos and get departments thinking beyond their department walls and bring everyone together and solve the problem. (Interviewee #9)

Beyond professional demands for independence, some of the interviewees provide alternative explanations for their limited role in solution identification and selection. For example, one interviewee describes the link between IAD resource constraints and participation in this solution phase of RCA:

> With the limitation of resources that we have here, I'm more inclined just to kick it over to the auditee and say "Here's what we know. You guys come up with a solution." I don't spend a whole lot of time working towards a solution. (Interviewee #16)

In contrast, some internal auditors emphasize the importance of supporting and even prompting management to lead and accept ownership of solutions while maintaining lines of authority within organizations. Prior research (e.g., Ashford and Detert 2015; Ashford and Dutton 1993; Dutton, Ashford, O'Neill, and Lawrence 2001) highlights the potential for such "issue selling" to help focus management attention on critical issues and motivate action.[19] One Senior VP of Internal Audit provides an example of this perspective:

> We have a discussion with management…but let the solution come from them. We actually provide solution information in a way that it looks like it does come from them. Ultimately, you get better buy in that way. You get their ownership of the issue and their commitment to solve it. (Interviewee #8)

The importance of such collaboration in this RCA stage is magnified given concern about the tendency for decision makers to rush coming up with a solution and then implementing it quickly without evaluating critical risks and alternatives (Okes 2009). Interviewee #10 describes such a setting where his internal audit team proposed a solution during RCA and an internal audit "team member questioned, 'Where is the data to support that?' We went back and got more data, made a bar chart and then proceeded.".

In summary, the results provide evidence of varying levels of internal auditor involvement in selecting solutions for implementation. Although some internal auditors remain actively involved in this phase of RCA, others emphasize the need for a relatively passive advisory approach given concerns about independence, resource limitations, and a desire to let management lead. Professional standards certainly provide a basis for establishing a clear line of demarcation between helping in the effort to identify potential solutions in RCA and actually selecting a solution. The former seems to be a natural extension of the diagnostic phase that leverages internal auditor expertise, while the latter appears to create the risk of overextending internal audit work to make management decisions.

8- Implement solution.

As with solution selection, internal auditors are often well positioned to implement solutions within RCA. However, Okes (2009) highlights that solution implementation within RCA is sometimes performed by different individuals than those involved in identifying the root cause in the diagnostic phase. For example, solution implementation in some settings (e.g., computer programming, marketing) might require individuals who possess specific domain and task-specific expertise that internal auditors lack. Our interview results again suggest that internal auditors generally assume a relatively passive role in solution implementation given management's leadership role and professional demands for independence, objectivity, and separation from management decision making. For example:

> We give our two-cents worth, but as far as implementing the solution or owning a process or control, that wouldn't align with our professional objectives. No, we do not own that. (Interviewee #5)

Despite finding strong consensus about the importance of internal auditors not implementing solutions in RCA, we do find limited evidence of an opposing perspective where internal audit is (and should be) actively involved in solution implementation:

> I have a different philosophy than some of my peers. When we invest so much in a particular area to first identify the issue, we have a lot of value to bring to the table. We also have the ability to leverage action that others don't have. As a result, we are active in the solution side, meaning one of my audit team members would possibly stay on and be a part of a quality action team that works a solution. I believe we can still be very objective and independent reporting up to the board and to executive management. (Interviewee #10)

This CAE argues that such a hands-on approach is both acceptable and effective because the IAD has a dual reporting relationship (functional reporting to audit committee and administrative reporting to management) that helps maintains auditor independence and

[19] Dutton et al. (2001) describe issue selling as "the process by which individuals affect others' attention to and understanding of the events, developments, and trends that have implications for organizational performance." (p. 716).

objectivity. Ultimately, this minority viewpoint deserves closer scrutiny because solution implementation can require extensive resources and specific expertise that might not be available with the IAD.

9- Evaluate effects.

The final stage of RCA focuses on follow-up and evaluation of the solution(s) implemented. Despite evidence of restricted involvement in previous steps of the solution phase given concerns about independence and objectivity, the interviewees describe strong and consistent interest in critical evaluation of solutions to make sure things are working as intended. Interviewee #10 emphasizes that "we certainly track the issue and come back in to validate that the root cause has been corrected." Another auditor provides a similar sentiment that recognizes the potential effects of employee turnover:

> You can do RCA all day, but if you have change and turnover in the department where the problem is, don't expect that what you implemented to still be going six months from now unless you as an internal auditor say, 'We did this RCA a few months back with the previous manager and I want to talk to you about it'. (Interviewee #9)

A number of comments focus on the importance of following up to help ensure the related business unit is taking full ownership of solution implementation. Several internal auditors extend this perspective by describing the importance of getting real buy-in from both management and the board/audit committee when managing the risk of reoccurrence. For example:

> The problem was a lack of buy-in from the department head who did not feel the issue was important and let the solution drop. However, my board and CEO have always said 'Tell us if somebody's not doing something and we assure you they will start doing it'. I hate to exercise that power, so I always go back to the department head and say, 'The CEO and the board want to know if this hasn't been done and I don't want to have to report that. What can we do today to get this fixed?'. Things happen after that. (Interviewee #7)

Ultimately, although the level of follow-up testing varies among interviewees due to resource and access constraints, there is strong consensus about the importance of returning to test and evaluate the effects of the changes that management put in place. Involvement in this final evaluative stage of RCA is wholly consistent with the internal auditor's assurance role in governance. Further, we find that failure to evaluate solution efficacy greatly increases the risk of problem reoccurrence.

RQ3: What RCA best and worst practices do internal auditors identify based on their experiences?

The last set of questions asked the interviewees to reflect on their RCA experiences to discuss perceived best and worst practices that can inform and guide policymakers, practitioners, and researchers. The use of open-ended questions in this stage provides interviewees with the freedom to reflect on earlier comments and prior experiences to highlight anything they perceive as important in achieving RCA success and/or avoid RCA failure. We focus on both best and worst RCA practices to encourage cognition and reflection, recognizing that worst practices are not simply and necessarily the opposite of best practices (Haque 2010; Woodside, Xia, Crotts, and Clement 2016).

The "best practice" comments highlight a variety of issues that the interviewees consider keys to success in RCA. For example, a number of responses describe the importance of discussing and explaining specific RCA results in a team setting where colleagues can provide questions and challenges. Specific comments include:

> You get so much more out of getting the audit team together to talk and connect dots than you do if everybody has their heads down writing findings at their desk. Honestly, RCA helps us communicate much better because you have to explain things and have people challenge you with questions. You get to a much better point of view on what you found and what you want to present to the business. (Interviewee #17)
>
> After finishing Five Whys analysis, I really like to have someone else come in and challenge it. They almost always can say, 'Well, that doesn't really make sense. Can you go back another step? Or how about this?' (Interviewee #5)

Several other interviewees add that this critical, analytical communication process really helps increase understanding of critical business processes in a way that helps RCA and benefits future audit and consulting activities.

We also find that a number of best practice comments focus on the importance of working directly with management to establish support for internal auditor use of RCA to add value within the organization. The IIA (2011) warns that management may be reluctant to support internal auditor use of RCA because of concerns about resource demands. Our interviewees recognize this risk and emphasize the need to use persuasive communication with management:

> It is critical to have buy-in and a tone at the top that everything the auditors do with RCA really provides value. Some see that value better than others, but it's important to have that dialogue and challenge management. (Interviewee #12)
>
> I actually use RCA as a tool to gain credibility with management because you may find opportunities that management isn't aware of. I think it helps build relationships and credibility. (Interviewee #13)

Further, the best practice comments reiterate the importance of careful cost-benefit analysis prior to initiating RCA. These comments are consistent with The IIA's (2011) guidance that internal auditors should recognize that certain RCA techniques require resources (e.g., time, personnel, technology, data analysis) that may not be justified. Interviewee #16 describes this concern by highlighting the "need to focus on high-risk issues" because resources constraints mean "we can't do RCA on every single finding." Another interviewee expands on this sentiment by citing the Pareto principle as a specific rule-of-thumb approach used in practice to justify the resources used to conduct RCA:

You can go down many rabbit holes with RCA. It's worthwhile to consider the 80/20 rule when evaluating consequences and causes. You ask, 'have we hit a big risk…what does this really mean?' If you address that, it goes a long way to adding value before you start diving in and spending a huge amount of time going further into things. (Interviewee #8)

**Table 2**
Key Takeaways.

| *Key Takeaways* | *Future Research Questions* |
|---|---|
| **RQ1: Do internal auditors understand and use RCA as prescribed?** | |
| RCA requires resources that should be commensurate with the risks involved. However, resource constraints (e.g., lack of internal audit staff, expertise, and management buy-in) can undermine internal auditor efforts to conduct RCA. | How do internal auditors and management evaluate RCA costs and benefits?<br>How do internal auditors manage resource constraints when conducting RCA? |
| Internal auditors use a wide variety of structured and unstructured RCA methods. Some auditors are unaware of structured RCA methods recommended in professional guidance. | Which structured RCA methods are most (least) effective in internal audit practice? |
| Internal auditors generally agree that RCA is a very important tool within the profession, but there is considerable variation in familiarity with: 1. RCA, 2. professional guidance in the area, and 3. training opportunities. | What mix of RCA knowledge, ability, and experience constitutes "core competency" as defined by professional guidance? |
| Internal auditors strongly believe that RCA facilitates a deeper understanding of business processes and related risks. | Does RCA-prompted understanding of business processes impact and benefit other internal audit areas and overall internal audit quality? |
| Internal auditors generally believe that RCA increases *attitude* and *mindset* skepticism, including:-risk of material misstatement assessments (attitude)-concern about regulatory noncompliance (attitude)-assessments of management JDM quality (attitude)-efforts to understand problems and processes (mindset)-critical evaluation of alternative problems/issues (mindset) | Do different RCA methods affect professional skepticism in different ways?<br>Are there settings where RCA impairs professional skepticism?<br>Does RCA use by internal auditors affect external audits of financial statements and internal control over financial reporting? |
| **RQ2: To what extent do internal auditors implement RCA as a problem-solving tool?** | |
| Obtaining a thorough understanding of business processes is critical during the diagnostic phase of RCA. | To what extent does RCA-based efforts to understand business processes help IAs conducting other internal audit and consulting work? |
| Data collection and analysis within RCA varies a great deal, with some internal auditors unsure about RCA documentation. | To what extent do traditional data collection and analysis methods for internal auditors work in RCA? What modifications (if any) are needed? |
| Internal auditors have conflicting opinions about whether RCA should target identification of a single root cause or multiple root causes. | What controls should be in place to manage the risk of misdiagnosing the number and nature of root causes? |
| Internal auditor involvement in the solutions phase of RCA varies a great deal, with some internal auditors indicating:<br>-that RCA ends when a root cause is identified.<br>-they recognize their ability to add value in the solutions phase.<br>-concern about solutions phase work given professional responsibilities and resource constraints. | How involved can internal auditors be in the solution phase of RCA without assuming management responsibilities and violating professional standards for independence and objectivity?Are internal and external stakeholders' best interests served when internal auditors avoid (or limit) involvement in the solutions phase?<br>Are there settings where internal auditors should be actively involved in solution implementation despite concerns about maintaining independence and role separation?<br>To what extent can RCA help internal auditors improve communication, facilitate change, and add value across various administrative and functional business areas. |
| **RQ3: What RCA best and worst practices do internal auditors identify based on their experiences?** | |
| RCA processes and results should be discussed in a group setting where findings and potential solutions can be challenged. | Do group brainstorming best practices provide an appropriate template for developing RCA-based group discussions?<br>Should audit committees provide specific oversight of RCA conducted by internal auditors? |
| Internal auditors should work directly and constructively with management to build support for their RCA efforts to improve internal audit and business quality. | What factors increase (decrease) the quality of internal auditor-management communication during RCA?<br>What management red flags should internal auditors consider and manage when conducting RCA? |
| IADs need to commit to investing in RCA skill development and maintenance to maximize RCA efficacy.<br>-Internal auditor turnover is a substantial obstacle when developing and sustaining RCA processes.<br>-Internal auditors need adequate resources and support from management and the audit committee to provide initial and continuing RCA education. | What RCA training methods are most effective and efficient for IAs?<br>How can internal auditors mitigate turnover effects on RCA effectiveness and efficiency?<br>What are the risks associated with modifying comprehensive and theory-based RCA models in internal audit settings to accommodate professional constraints?<br>What tradeoffs should internal auditors consider when evaluating the use of structured vs. unstructured RCA methods? |
| Internal auditors need to carefully consider projected costs and benefits prior to engaging in RCA. | What specific processes do internal auditors use to conduct cost-benefit analysis for RCA?<br>Are cost-benefit analysis results shared with other stakeholders to explain/justify use decisions?<br>What are the cost-benefit considerations for internal auditors who need the help of outside specialists to conduct RCA? |

Finally, several best practice responses relate to ensuring that internal auditors develop and maintain adequate expertise to conduct RCA and clearly understand and communicate its importance to obtain management's support. These comments are consistent with The IIA's (2011) statement that, "auditors may not have all the skill sets necessary to conduct the specific RCA under consideration… Chief Audit Executives should validate that the experience and expertise of their staff are sufficient to perform the work" (para. 5). The interview responses provide evidence of such concern:

> Think the best practice is to have good 5, 10, 15, 20-year auditors that have the mindsets and skillsets to conduct RCA. (Interviewee #1)
> In my recruiting, I've got to see auditors that have the ability to interact with people very well, network, build relationships, and establish credibility. I've got to make sure they have the fundamentals to understand how we go about documenting things and how important RCA is. (Interviewee #10)

The "worst practice" comments highlight several unique concerns that internal auditors should consider when conducting RCA. For example, a number of interviewees describe settings where internal auditors have focused on the wrong issues and/or asked the wrong questions. The IIA's (2011) RCA guidance states that "a true root cause analysis will seek to understand why good people make bad or inadequate decisions" (para. 7). A Senior Lead Auditor from the banking industry provides an example comment:

> A worst practice we've seen is when auditors ask about the 'how' instead of the 'why'. When that happens, you're just identifying symptoms in what I call "end of the nose thinking." (Interviewee #5)

The comments further highlight concern about internal auditors overestimating their expertise and simply failing to exercise due professional care when conducting RCA. In a setting where internal auditors should be working to gain situational awareness and an understanding of circumstances (IIA 2011), some responses provide insight into problems that can occur:

> A worst practice is to assume that you are the subject matter expert. If you just stop at middle management and really don't talk to people that are hands on, that's a pitfall that you can fall into. (Interviewee #19)
> My big concern is that people forget to follow up. If you don't follow up, you're going to have a problem again, and then what was the purpose of the RCA? (Interviewee #9)

Several interviewees indicate that failing to perform RCA when needed perpetuates existing problems. Failure to understand the full scope of the problem and/or inadequate resources are often reasons that prevent IADs from conducting a proper RCA:

> We were so caught up in the issues in one area of our business, we never considered how it impacted the other part of our business. We got the issues fixed in the primary area, but because we did not do RCA, it was a surprise several months later that the same issue was occurring in the other part of our business. (Interviewee #9)
> We have some leased retail space. We get concerned our lessees are not paying us in accordance with the lease terms…it's not uncommon. Common sense would tell us there should be some type of RCA applied to that so we can identify what controls or processes need to be implemented so this does not continue to be a repetitive issue. (Interviewee #1)

Ultimately, the responses about best and worst RCA practices highlight the importance of improving communication within the internal audit group and developing stronger relationships with management. Establishing credibility with management and working together using candid, fact-based communication clearly helps internal auditors understand critical processes, identify root causes, and support solution implementation. The comments also emphasize the importance of developing and maintaining a team of internal auditors with requisite knowledge, ability, and experience to manage challenging RCA processes over extended periods of time.

## 5. Discussion and conclusion

The IIA prioritizes RCA for internal auditors as a core competency that should help them add insight and value within organizations. Although policymakers prescribe the importance of RCA in the profession, the literature lacks evidence about internal auditor use of RCA in an environment with professional (e.g., independence, objectivity) and practical (e.g., time, expertise, access) constraints. We use in-depth interviews with highly experienced internal auditors to provide initial evidence about RCA use within the profession.

Table 2 provides a summary of key takeaways and specific questions for future research. Several primary themes deserve careful and continued consideration. First, we find strong agreement that RCA is an important tool for internal auditors working to solve problems and add value within their organizations. Reported keys to RCA success include obtaining a thorough understanding of business processes and having frequent group discussions to challenge findings and potential solutions. However, the interviewees also emphasize that internal auditors should carefully consider resource constraints and prioritize RCA efforts in high-risk areas where it can have the greatest impact. Second, although the interviewees generally claim to understand RCA, we find evidence of a substantial knowledge gap between what they think RCA is and what it actually is given prescriptive and practice guidance in the area. For example, some interviewees view RCA simply as a general mindset and lack awareness of professional guidance, training opportunities, and rigorous methods available to them and their colleagues. Finally, although internal auditor use of RCA appears to be reasonably prevalent, the knowledge gap, resource constraints, turnover issues, and professional concerns about independence create considerable variation RCA approach, rigor, and efficacy. Although some internal audit leaders clearly manage sophisticated RCA systems that triangulate methods and include rigorous data collection, analysis, and documentation procedures, others readily admit they lack the resources and expertise to perform RCA as called for by policymakers.

Overall, the results raise important public policy questions about internal auditor use of RCA and its potential to contribute to and conflict with basic purpose of internal auditing as "an independent, objective assurance and consulting activity designed to add value and improve an organization's operations" (IIA 2017). Although professional guidance prescribes RCA as a core competency for internal auditors, we find evidence of conflict between internal audit RCA use and prescribed professional responsibilities related to independence, objectivity, and professional skepticism. For example, The IIA (2011) currently defines RCA simply as "the identification of why an issue occurred", which focuses on diagnosis only and not solution identification, implementation, and monitoring. However, The IIA's guidance also alludes to internal auditor responsibility and involvement in the solutions phase of RCA. Our interviewees note this role ambiguity and role conflict, noting that RCA's potential to improve overall governance and the quality of financial reporting, operations, and compliance is compromised to the extent that internal auditors are (or feel) limited in their ability to contribute in the solutions phase of the analysis. The importance of this concern is magnified given that internal auditors are well positioned to identify root causes that impact multiple areas (e.g., departments, divisions, units) and facilitate change that benefits those areas and the entire organization. Ultimately, more guidance is needed to clarify what specific mix of internal auditor involvement in diagnostic and solutions RCA best serves stakeholders and the public interest.

From a research perspective, the results provide initial empirical evidence about RCA use by internal auditors charged with developing RCA skills as a core competency. Roussy and Perron (2018) review the internal audit research literature and call for more study of internal audit practice and how it relates to changing professional standards. Despite professional guidance from The IIA and a long history of business use, little is known about how internal auditors use RCA, the relative costs and benefits of use, and the factors affecting RCA's impact on internal audit and business quality. Our study increases understanding in these areas, provides initial insights into RCA use, and helps motivate and guide new research in the area.

For example, the results highlight a potential conflict for internal auditors conducting RCA and attempting to comply with professional demands for independence and objectivity. Future studies should evaluate the nature and extent of this conflict and whether internal auditors can remain actively involved in all phases of RCA while maintaining required relationships and mindsets. Further, a surprising number of internal auditors do not agree that RCA improves professional skepticism, despite the fact that RCA is designed to be a skepticism-enhancing process. Follow-up discussions and analysis suggest that this finding reflects differing perceptions among internal auditors about what professional skepticism actually is, consistent with prior literature suggesting confusion with the construct (e.g., Nolder and Kadous 2018; Nelson 2009). However, future research should evaluate the potential for internal auditor RCA to actually impair professional skepticism.

In terms of theory, our adapted use of Oakes (2009) DO IT$^2$ Problem-Solving Model for RCA provides a framework for policymakers, practitioners, and researchers to consider when evaluating RCA use and efficacy given organizational needs and internal auditors' professional constraints. Future research should continue to develop RCA problem-solving theory to provide a basis for stakeholders to evaluate the nature and extent of their RCA efforts in a unique professional domain. For example, our results suggest that further development of the model in an internal audit context should carefully consider critical and pervasive issues related to motivation, expertise, independence, and resource availability that impact each step of the model and process.

When considering study implications and future research opportunities, it is important to recognize the risk of response bias (e.g., demand effects, social desirability effects, lack of candor) in the interviews. For example, interviewees might have systematically altered their responses to provide what they perceive to be "right" answer based on perceived researcher goals and/or professional guidance. However, consistent with prior interview-based studies (e.g., Clune, Hermanson, Tompkins, and Ye 2014; Hermanson, Tompkins, Veliyath, and Ye 2012; Beasley, Carcello, Hermanson, and Neal 2009), we believe risk in this area is low given the use of highly experienced internal audit leaders in a confidential interview setting. The nature of the interview sessions and responses suggest the interviewees were comfortable, forthcoming, and candid in their responses, including specific and varied discussion of personal and group failures, limitations, and frustrations related to RCA use.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Data availability

No data was used for the research described in the article.

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## Appendix A

Interview Protocol

**Purpose of the study (to be shared with interviewees)**

*"Thank you so much for agreeing to talk with us as we study internal auditor use of root cause analysis (RCA). Although The IIA has a Practice Advisory that calls RCA a "core competency" for internal auditors, little is known about its use in practice.*

*Please know that your responses and identity will be held in* ***strict confidence****. As indicated on the Consent Form, we will not identify you or your specific organization in any way. However, your confidential participation is critical to the success of this project and development of RCA practices that can benefit the entire profession. We believe the results of this study will help internal auditors and the profession better understand RCA, RCA's cost and benefits, and best practices recommendations when implementing RCA.".*

**Professional background**

1. How do you describe your job responsibilities?
2. What professional certifications do you have?
3. How long have you worked as an internal auditor?
4. How long have you worked as an internal auditor in your current organization?

**Internal audit department (IAD) overview**

1. Is your IAD fully in-house or co-sourced to some extent?
   a. How many in-house internal auditors do you have in your IAD?
2. Who does your IAD report to administratively and functionally?
3. How would you describe your IAD's mix of audit and consulting work (%)?
4. How would you describe your IAD's audit mix (e.g., % financial, % compliance, % operational)?

**Professional RCA guidance**

1. How much do you know about RCA?
2. How familiar are you with The IIA's Practice Advisory in the area?
3. Can The IIA improve RCA guidance for internal auditors? If yes, please describe how.

**RCA history in organization**

1. Does your department or organization have a formal policy related to RCA use? If yes, please describe.
2. Are employees trained in the use of RCA?
3. In what areas (e.g., financial/operational/compliance) is RCA used?
4. Are cost/benefit issues considered when deciding whether to initiate an RCA?
5. When did your IAD last conduct a formal RCA?

**RCA process**

*Diagnostic ("find it") phase*

1. Who decides when there's a specific problem worthy of scrutiny via formal RCA? Can you describe an example? (1)
2. To what extent is there an effort to understand the processes underlying the problem? (2)
3. What specific RCA method(s) do you use in your organization? (3)
4. When conducting RCA, how is evidence collected and documented? (4&5)
5. There is an interesting ongoing debate in the literature about whether problems have a single root cause or multiple root causes. What are your thoughts? Do you try to identify a single root cause or do you accept multiple root causes? (5)

**Solution ("fix it") phase**

1. To what extent does RCA affect your ability to:
   a. identify *possible* solutions to problems (6)
   b. recommend *specific* solution(s) to be implemented (7)
2. When it comes to implementing solutions resulting from RCA, is internal audit consistently a part of the process? (8)
3. Is there a formal process to evaluate the effect(s) of implemented solutions? (9)
4. Do you see identified root causes that later re-occur? If so, was an incorrect solution implemented or was the solution poorly implemented? (9&10)
5. Is there a process for maintaining the improvements and related knowledge gained by using RCA? How well do you do in this area? (10)

### Attitudes about RCA

1. How would you describe your *internal auditors'* attitudes toward use of RCA?
   a. Do you believe RCA use impacts professional skepticism?
2. How would you describe *management's* attitude toward internal audit's use of RCA? CEO and or CFO interested and/or involved?
3. How would you describe your *audit committee's (or board's)* attitude toward RCA use?
4. How do you assess the future of RCA use in your organization?

### Best and worst practices

1. What "best practice" recommendations do you think are most important for internal auditors considering RCA use?
2. Can you identify any "worst practice" pitfalls related to RCA use?

3. What is the biggest mistake you see made when using RCA?
4. What advice would you give another IAD that is considering using RCA for the first time?

**Is there anything else about RCA use that you think we should know, but didn't ask about?

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