AUDITORS’ INFORMATION SEARCH AND DOCUMENTATION: DOES
KNOWLEDGE OF THE CLIENT PREFERENCE OR PCAOB
ACCOUNTABILITY PRESSURE MATTER?

Renee M. Olvera, B.S., M.A.S.

Dissertation Prepared for the Degree of

DOCTOR OF PHILOSOPHY

UNIVERSITY OF NORTH TEXAS

May 2012

APPROVED:

Mary B. Curtis, Major Professor
Robert Pavur, Committee Member
Neil Wilner, Committee Member
Don Finn, Chair of the Department of Accounting
O. Finley Graves, Dean of the College of Business
James D. Meernik, Acting Dean of the Toulouse Graduate School
Auditors regularly make judgments regarding whether a client’s chosen accounting policy is appropriate and in accordance with generally accepted accounting Principles (GAAP). However, to form this judgment, auditors must either possess adequate topic-specific knowledge or must gain such knowledge through information search. This search is subject to numerous biases, including a bias toward confirmation of a client’s preference. It is important to further our understanding of bias in auditors’ information search to identify its causes and effects. Furthering our understanding is necessary to provide a basis for recommending and evaluating a potential debiaser, such as accountability.

The Public Company Accounting Oversight Board (PCAOB) annually inspects the audit files of selected engagements, which introduces a new form of accountability within the auditing profession. This new form of accountability has come at great cost, however, there is little empirical evidence regarding its effects on auditors’ processes. As such, it is important to understand whether the presence of accountability from the PCAOB is effective in modifying auditors’ search behaviors to diminish confirmation bias.

Using an online experiment, I manipulate client preference (unknown vs. known) and PCAOB accountability pressure (low vs. high) and measure search type (information –focus or decision-focus), search depth (shallow or deep) and documentation quality. I investigate whether auditors’ information search behaviors differ based on knowledge of client’s preference and in the presence of accountability from an expected PCAOB inspection. I also investigate whether
differences in auditors’ information search behaviors influence documentation quality, which is the outcome of greatest concern to the PCAOB.

I hypothesize and find a client preference effect on information search type such that auditors with knowledge of the client preference consider guidance associated with the client’s preference longer than those without knowledge of the client’s preference. Contrary to expectations, PCAOB accountability pressure does not influence information search depth. With respect to documentation quality, I find that auditors engaged in a more information-focused search have higher documentation quality. Further, as expected, auditors who initially engage in a decision-focus and deep search have higher documentation quality than those auditors who initially engaged in a decision-focused but shallow search.
TABLE OF CONTENTS

LIST OF TABLES ......................................................................................................................... vi

LIST OF ILLUSTRATIONS ........................................................................................................ vii

Chapters

1. INTRODUCTION ...................................................................................................1

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT ................. 8
   Information Search Type .................................................................9
   Influence of Knowledge of Client Preference on Auditors’ Information Search Type .................................................................9
   Influence of Auditors’ Information Search Type on Documentation Quality .................................................................15
   Information Search Depth ...............................................................17
   PCAOB Accountability Pressure ...................................................18
   Influence of Accountability Pressure on Auditors’ Information Search Depth .................................................................20
   Influence of Auditors’ Information Search Depth on Documentation Quality .................................................................22
   Interaction of Information Search Type and Depth on Auditors’ Documentation Quality .................................................................23

3. METHODOLOGY ................................................................................................26
   Research Design and Participants ...................................................26
   Experimental Instrument ...............................................................27
     Overview of Experimental Procedures ........................................27
     Task Development ..................................................................31
   Study Variables ........................................................................32
     Manipulated Variables .............................................................32
       Knowledge of Client Preference ..................................................32
       PCAOB Accountability Pressure ..................................................33
     Measured Variables .................................................................33
       Information Search Type ..........................................................33
Information Search Depth ..........................................................39
Documentation Quality .........................................................40
Testing Hypotheses ........................................................................43
Information Search Behaviors .....................................................43
Documentation Quality .............................................................44
Covariates ..................................................................................45
Validation and Pilot Testing ........................................................46

4. RESULTS .................................................................................................48
Participant Demographic Information ........................................48
Manipulation Checks .....................................................................49
Overview of Data Collected ..........................................................53
Graphical Examination of Information Search Data ..................53
Correlation Analysis ......................................................................58
Hypotheses Testing .........................................................................64
Information Search Behaviors ......................................................64
  Influence of Knowledge of Client Preference on
  Information Search Type .............................................................64
  Influence of Accountability Pressure on Search Depth ............70
Documentation Quality ...............................................................74
  Influence of Search Type on Documentation Quality .............74
  Influence of Search Depth on Documentation Quality ..........77
  Interaction of Search Type and Depth on Documentation
  Quality ...........................................................................................80
Supplemental Analyses ...............................................................84
Information Search Behaviors ......................................................85
  Information Search Type ..............................................................85
  Information Search Depth ..........................................................86
Documentation Quality ...............................................................86
  Direct Effects of Client Preference and PCAOB
  Accountability Pressure on Documentation Quality .............87
  Mediation Analysis .....................................................................87
  H4 Robustness Analysis ..............................................................88
5. CONCLUSION .........................................................................................................................96
   Discussion .............................................................................................................................96
   Contributions ......................................................................................................................101
   Limitations ..........................................................................................................................102
   Future Research ..................................................................................................................104

Appendices

A. ELECTRONIC DATABASE SCREEN SHOTS .................................................................106

B. EXPERIMENTAL TASK: SALES CONTRACT FACTS .............................................108

REFERENCES ............................................................................................................................110
<table>
<thead>
<tr>
<th>List of Tables</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Participant Demographic Information</td>
<td>49</td>
</tr>
<tr>
<td>2. Examination of Manipulation Checks</td>
<td>52</td>
</tr>
<tr>
<td>3. Pearson Correlations Between Study Variables</td>
<td>62</td>
</tr>
<tr>
<td>4. Test Results for H1</td>
<td>69</td>
</tr>
<tr>
<td>5. Test Results for H3</td>
<td>73</td>
</tr>
<tr>
<td>6. Test Results for H2</td>
<td>76</td>
</tr>
<tr>
<td>7. Test Results for H4</td>
<td>79</td>
</tr>
<tr>
<td>8. Test Results for H5</td>
<td>82</td>
</tr>
<tr>
<td>9. Means (Standard Deviations) of DV QUAL_SCORE by Median Split of RANK and DURATION</td>
<td>83</td>
</tr>
<tr>
<td>10. Supplemental Analyses</td>
<td>91</td>
</tr>
<tr>
<td>11. Supplemental Analyses – Two Apparent Outliers Removed from Analysis</td>
<td>93</td>
</tr>
<tr>
<td>12. Estimated Marginal Means of Dependent Variable QUAL_SCORE by Median Split of KNOW and DOC_TIME</td>
<td>95</td>
</tr>
</tbody>
</table>
## LIST OF ILLUSTRATIONS

<table>
<thead>
<tr>
<th>Illustrations</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Research Framework</td>
<td>8</td>
</tr>
<tr>
<td>2. Hypothesized Interaction of Information Search Type and Depth on Documentation Quality</td>
<td>23</td>
</tr>
<tr>
<td>3. Overview of Experiment</td>
<td>30</td>
</tr>
<tr>
<td>4. Categorization of Guidance Items</td>
<td>35</td>
</tr>
<tr>
<td>5. Information Search Type: Example of RANK Measure Calculation</td>
<td>37</td>
</tr>
<tr>
<td>6. Documentation Quality Coding Criteria</td>
<td>42</td>
</tr>
<tr>
<td>7. Panel A: Proportion of Time Spent by Category</td>
<td>55</td>
</tr>
<tr>
<td>Panel B: Time Spent Per Item Viewed Within Category</td>
<td>56</td>
</tr>
<tr>
<td>8. Graphical Examination of Information Search Depth by PCAOB Accountability Pressure Condition</td>
<td>57</td>
</tr>
<tr>
<td>9. Actual Interaction of Information Search Type and Depth on Documentation Quality</td>
<td>84</td>
</tr>
</tbody>
</table>
CHAPTER 1
INTRODUCTION

Auditors regularly make judgments regarding client’s accounting policies, which require them to evaluate whether the client’s chosen policy is appropriate and in accordance with generally accepted accounting principles (GAAP). However, to form this judgment auditors must either possess adequate topic-specific accounting knowledge or must be able to gain such knowledge by conducting information search, typically using an electronic database of accounting guidance.

Auditors’ search for information is subject to numerous biases. One such bias of interest is confirmation bias. Existing audit literature suggests auditors engage in confirmation biased judgments regarding a client’s use of a financial reporting policy in moderate engagement risk situations. Further, auditors engage in biased interpretations of accounting standards to permit clients to use aggressive financial reporting policies (Hackenbrack and Nelson 1996). Because client preference is unavoidable and auditors’ bias toward this preference can impact audit quality, it is important to further our understanding of auditors’ bias in information search and subsequent documentation in order to identify the causes and effects of the bias. In addition, expanding our understanding provides the basis for identifying solutions and recommending a potential debiaser, such as accountability.

In addition to searching for information and making judgments regarding the acceptability of client’s accounting policies, auditors must adequately document their judgments in the audit workpapers. Audit documentation is the primary means to support auditors’

---

1 For example, Pike (2009) examined auditors’ use of an anchoring and adjusting bias in a financial statement ratio analysis task. They find that when auditors exhibit an initial biased expectation they gather additional evidence to support this expectation. This finding supports a form of auditors’ confirmation bias in a quantitative task.
conclusions and it provides evidence of planning, performance, and supervision of an engagement team’s audit procedures. Auditors are accountable for their workpapers because these workpapers are reviewed by within the firm by engagement seniors, managers, partners and within-firm concurring reviewers. Some audit engagement teams are also subject to reviews by professionals outside their firm through either external peer reviews or Public Company Accounting Oversight Board (PCAOB) inspection (PCAOB 2010a). Anecdotal evidence suggests that professional services firms have responded to PCAOB inspection process by developing quality control reviews, which occur prior to the engagement team’s delivery of the audit report. Thus, auditors are subject to accountability from many sources. While some research addresses accountability, there is little empirical evidence regarding the effects of accountability from an expected PCAOB inspection on auditors’ processes. It is important to understand whether the presence of accountability from the PCAOB results in increased cognitive effort similar to normal working paper review and ultimately in modifications of auditors’ processes.

The purpose of my dissertation is two-fold. First, I develop an understanding of auditors’ bias in information search and examine whether accountability from the PCAOB increases auditors’ cognitive effort and results in differences in search behavior. Second, I examine the relationship between auditors’ information search behavior and documentation quality. To satisfy the goals of my dissertation, I use an online experiment requiring manager auditors to determine the appropriate accounting policy for a hypothetical client’s multiple-element sales contract. Participant auditors conduct a search through an electronic database simulating the Financial Accounting Standard Board (FASB) Codification. Following the search, they
document their processes, conclusions, and proposed audit procedures in a revenue recognition memo.

To fulfill my dissertation’s first purpose, I manipulate the independent variables of client preference (presence or absence of client’s accounting policy preference) and PCAOB accountability pressure (presence or absence of an expected PCAOB inspection) and examine whether each results in differences in auditors’ search type and depth. To fulfill my dissertation’s second purpose, I use the variables of search type and depth as independent variables and examine whether each variable and their interaction results in differences in documentation quality.

Results of my study suggest a client preference effect on information search type such that auditors with knowledge of the client preference engage in a more decision-focused information search. That is, these auditors spend more time per each guidance item associated with the client’s preference than auditors without knowledge of the client’s preference. In addition, results of my study differ from those of tax research. Specifically, I find no evidence that auditors with knowledge of the client’s preference spend more time examining guidance consistent with that preference. Differences between my findings and those relying on tax professionals’ tasks and search behaviors may be due to the underlying differences between audit and tax standards, client relationships and accounting tasks. Most importantly tax standards of conduct and ethics highlight tax professionals’ role as a client advocate (AICPA 2009); however PCAOB auditing standards require auditors to maintain independence form their clients and their preferences and avoid client advocacy (AICPA 1988). Therefore it is likely that auditors engage in search behavior to “rule out” client’s preferences.
I find no significant relationship between PCAOB accountability pressure and information search depth when I control for auditors’ relevant knowledge prior to search. This finding suggests that auditors may not experience PCAOB accountability pressure similarly to that of a normal working paper review. Unlike literature investigating accounting through the normal workpaper review process (i.e. Johnson and Kaplan 1991), I find no evidence that PCAOB accountability pressure increased auditors’ cognitive effort as evidenced by a deeper search. Further, I find that PCAOB accountability pressure does not influence auditors’ search type and therefore may not be an adequate mechanism to diminish confirmation bias in auditor’s search.

With respect to the relationship between information search behaviors and documentation quality I find that auditors’ search type and depth influence documentation quality. Specifically, as auditors perform a more information-focused search their documentation quality increases suggesting that these auditors’ view items during search that influence the nature and extent of their documentation. Contrary to expectations, auditors engaged in a shallow search had higher documentation quality, which may suggest a trade-off of auditors’ efforts. Such a trade-off should suggest that auditors are aware of the limit to their productive time to adequately perform and document audit procedures, therefore they engage in a shallower search in order to expend more time and effort on documentation.

This trade-off is further evidenced by the interaction of search and depth. I find that search type and depth interact to influence documentation quality. When the search type is decision-focused the difference in documentation quality between shallow and deep search is small. However, when auditors’ search type is information-focused there is a large and significant difference in documentation quality between shallow and deep search depths.
Auditors who engage in an information-focus but shallow search have higher documentation quality than those who engage in an information-focus and deep search. These findings suggest that both the type and depth of search are important in determining documentation quality. Specifically, auditors who engage in a shallow search must seek a variety of information to achieve high documentation quality but when they engage in a deep search, the type of search is less relative to the quality of the outcome. Ultimately, to achieve the highest quality documentation, auditors should engage in an information-focused but shallow search.

My dissertation contributes to both accounting literature and practice. First, my study contributes to accounting literature examining client preference effects. Several studies identify client preference effects in auditors’ judgments regarding the use of client preferred accounting policies (i.e. Hackenbrack and Nelson 1996), however little is known about auditors’ processes as they consider these policies. My study examines auditors’ information search processes under biased and unbiased conditions and provides evidence that auditors consider the client preference as they search for information.

Second, my dissertation contributes to literature investigating accountability in audit processes. Several studies conclude that accountability, typically in the form of an internal or normal workpaper review process, increases auditors’ cognitive effort as evidenced by higher quality output (i.e. Koonce et al. 1995). My study contributes to this literature by examining auditors’ cognitive effort through their processes, specifically through search depth. Prior literature suggests that the type of accountability pressure influences variations in auditors’ performance (Brazel et al. 2004). My study provides a basis for future research investigating differences between PCAOB accountability pressure and other forms of accountability pressure found in auditing firms.
Third, my dissertation contributes to literature examining auditors’ information search behaviors. Specifically, I expand on tax and psychology research investigating the properties of individuals’ search behaviors and I also expand on early auditing research\(^2\) relying on verbal protocol methodologies.\(^3\) My dissertation is the first (to my knowledge) to examine the interaction of two search behaviors, type and depth, on auditors’ processes. The study’s results indicate that search type and depth jointly influence documentation quality and provide a basis for future research to consider both search type and depth when evaluating the relationship between search behavior and outcome measures.

Fourth, my dissertation contributes to literature investigating auditors’ documentation quality. Although documentation is paramount to audit practice, little is known about the factors contributing to high quality documentation. My study considers the influence of auditors’ processes on documentation quality and it provides evidence that differences in auditors’ process contribute to variation in documentation quality.

Lastly, my findings may be important to auditing firms as they refine their audit policies and procedures for public clients with a potential for PCAOB inspection. In addition, they may

\(^2\) Early auditing research investigated auditors’ search for information in primarily audit planning decisions (Kaplan and Reckers 1989), analytical procedures (Asare and Wright 2003) or going concern evaluations (Trotman and Sng 1989) which required auditors to conduct information searches of client-specific information. Although this early auditing literature provided insight into auditors’ information search behavior, it has not looked at auditors’ information search behaviors when a client’s preferred accounting method is known. Further, many early auditing studies utilized process tracing methodologies to identify auditors’ information search behaviors. Although this methodology provides evidence of auditors’ search behaviors it is subject to several limitations. For example, process tracing methodologies often result in a reduced sample size of between four and eleven auditors. Further, participants verbalize their decision processes and search strategies, which may ultimately alter their decision processes and verbalization is not realistic within and audit context.

\(^3\) Tax professionals’ also exhibit confirmation bias toward a client’s preferred position particularly during information search and subsequent judgment (Cloyd and Spilker 1999; Cloyd 1997), although the demand of different accounting tasks and client relationships suggests that this literature may not perfectly map to the audit context.
consider my results related to the relationship between search behavior and documentation as they develop training modules surrounding newly issued technical guidance.

The reminder of this dissertation is organized as follows: Chapter 2 provides a review of the client preference and accountability literature and offers hypotheses development for each stream of literature. Chapter 3 presents the research methodology. Chapter 4 discusses results of statistical analyses and chapter 5 provides concluding remarks, limitations and suggestions for future research.
CHAPTER 2
LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

This chapter provides a synthesis of accounting literature and hypotheses development for my dissertation. Figure 1 presents my research framework, which I have developed based on literature from psychology, organizational behavior, tax and audit. My research framework suggests that knowledge of the client preference and accountability pressure from the PCAOB influence auditors’ information search type and depth. Ultimately, auditors’ information search type and depth influence their documentation quality.

Audit documentation is the primary means to support auditors’ conclusions and it provides evidence of planning, performance, and supervision of an engagement teams’ audit procedures. Further, it provides a basis for an internal, peer or PCAOB quality review (PCAOB 2004).

The American Institute of Certified Public Accountants (AICPA) and the PCAOB have established audit documentation standards that require audit documentation provide enough
detail to allow an experienced auditor not previously connected with the engagement, to have a clear understanding of the nature, timing and extent of the audit procedures, the evidence obtained and the conclusions reached. The PCAOB does not explicitly state the requirements for quality audit documentation; instead they suggest that auditors exercise professional judgment to determine the nature and extent of their audit documentation (PCAOB 2004). The PCAOB does provide guidance for auditors to consider when evaluating engagement team documentation. They suggest that documentation should identify the risk of material misstatement associated with the audited assertion, the audit procedures, the extent of auditors’ professional judgment exercised, and the evidence obtained. Audit documentation should also include a clear conclusion (PCAOB 2004, paragraph 7).

I have organized by theoretical discussion into three sections. In the first section I address auditors’ type of information search. In this section, I provide a theoretical basis for my hypothesis regarding the effects of knowledge of the client’s preference on auditors’ information search type and I discuss the relation between information search type and documentation quality. In the second section, I discuss auditors’ information search depth. In this section, I develop my hypothesis regarding the influence of PCAOB accountability pressure on auditors’ information search depth and I discuss the relation between auditors’ search depth and documentation quality. In the final section, I discuss the interaction of auditors’ information search type and depth on documentation quality.

Information Search Type

Influence of Knowledge of Client Preference on Auditors’ Information Search Type

The majority of studies investigating client preference effects are motivated by the need for auditors to balance firm-based incentives and client-based incentives (Jenkins and Haynes
Auditors’ firm-based incentives motivate the auditor to manage engagement risk, reduce litigation risk, and conduct an audit in accordance with firm standards. Auditors’ client-based incentives motivate auditors to maintain client satisfaction and retention. Although auditors make various judgments during an audit, one judgment susceptible to this juxtaposition of incentives is auditors’ evaluation of client-preferred accounting policies. For example, in my study, auditor-participants evaluate a client’s sales contract for appropriate revenue recognition. In this context, auditors’ firm-based incentives motivate them to reduce the risk of inappropriate application of GAAP, which may lead to increased threat of litigation or attention from regulatory agencies. However, their client-based incentives encourage auditors to evaluate the client’s position within the context of retaining the client and therefore continuing to earn audit fees.

Acceptance of a client’s preferred accounting policy may be suitable when the policy is the most appropriate in accordance with GAAP. However, auditors may conclude that a client-preferred policy is the most acceptable by exploiting the vague language of accounting standards (Hackenbrack and Nelson 1996). Several accounting studies investigate whether auditors’ knowledge of the client’s preferred accounting policy influences their judgment regarding that policy’s acceptability under GAAP. These studies find that knowledge of the client’s preferred policy results in biased judgment in favor of that preference (Hackenbrack and Nelson 1996; Trompeter 1994; Salterio 1996).

The acceptance decision typically involves information search and it is this search process where bias may occur. For example, psychology and tax literature indicates that individuals engage in confirmation biased information search behaviors (Jonas et al. 2001; Kadous et al. 2008; Jonas et al. 2008). One factor influencing search behavior is whether the
focus is on the decision or the information presented (Jonas et al. 2001). When individuals focus on the decision, they engage in a decision-focused search and show a preference for supportive information, which results in confirmation biased search behavior (Jonas et al. 2008). Consistent with the theory of cognitive dissonance\(^4\), when individuals’ focus on a decision, they are more likely to seek supportive information and discredit or devalue contrary information (Festinger 1957). Conversely, when individuals focus on the information presented, they engage in an information-focused search and their intent is to seek a variety of information. During an information-focused search, individuals focus more on the information presented and less on the ultimate decision. Individuals engaged in this type of search compare, evaluate and integrate information before the decision is considered (Jonas et al. 2001).

Tax research suggests that tax professionals engage in a decision-focused, confirmation biased information search when they evaluate client’s preferred tax position (Cloyd and Spilker 1999; Cloyd 1995; Kadous et al. 2008). However, differences between tax and audit professionals in their standards, client relationships and accounting tasks suggest that this literature may not perfectly map to the audit context. First, tax standards of conduct and ethics issued by the AICPA highlight tax professionals’ role as a client advocate (AICPA 2009). However, auditing standards of the AICPA (as adopted by the PCAOB) require auditors to maintain independence from their clients and their preferences. Further, the AICPA explicitly states that client advocacy is a threat to independence (AICPA 1988). Second, tax professionals

\(^4\) Accounting literature asserts confirmation bias as the theory supporting auditors’ judgments and search behaviors consistent with their initial hypothesis (McMillan and White 1993) or hypothesis frame (Trotman and Sng 1989). Whereas in psychology, the theory of cognitive dissonance (Festinger 1957) explains some occurrences of confirmation biased information search. Cognitive dissonance states that individuals search for and place greater reliance on information in support of their previously made decision. Individuals discredit or devalue contrary evidence. Further, confirmation biased information search has been found both when auditors form their own initial hypothesis (Kida 1984; Jonas et al. 2001) and when they are provided with a hypothesis for consideration (Cloyd and Spilker 1999; Kadous et al. 2008).
engage in search and evaluation of tax law, precedents, and authoritative support for a client’s tax position. They provide assessments to clients of the level of authoritative support for the client’s tax position and communicate the likelihood a tax treatment will be sustained or refuted by the Internal Revenue Service based on its merits (Cloyd and Spilker 1999). In contrast, auditors engage in search and evaluation of accounting guidance to evaluate a client’s accounting policy in accordance with GAAP. Auditors report to the company audit committee or to a board of directors regarding whether the accounting method is appropriate in accordance with GAAP. Theoretically, auditors seek the “best” method, not the best support for the client-preferred method. Third, tax professionals prepare tax returns on behalf of their clients. The corollary of that for auditors would be the preparation of a client’s financial statements, and independent auditors are prohibited from this activity, especially on audit engagements performed in accordance with PCAOB auditing standards.

Research investigating information search in an audit context is mixed. Some studies find evidence of auditors’ decision-focused or confirmation biased type of information search (Peterson and Wong-On-Wing 2000; Turner 2001) whereas others find only partial support for the occurrence (Kida 1984; Trotman and Sng 1989; McMillan and White 1993). Turner (2001) asked auditor participants to perform a sequential search for evidence to assess the collectability of a client’s accounts receivable. She finds that auditors’ search type is influenced by reviewers’ preferences (credence vs. skepticism). Auditors in the credence condition were told that the reviewer was concerned with excessive examination of evidence contrary to client explanation whereas those in the skepticism condition were told that the reviewer was concerned with auditors’ acceptance of client-provided explanations without adequate justification. She finds
that auditors in the credence condition engaged in a confirmation biased search of evidence consistent with evidence provided by the client.

Peterson and Wong-On-Wing (2000) examine the type of information search auditors engage in when identifying the source of a possible profit margin misstatement. These auditors were asked to engage in a sequential-type information search. They were provided with fifteen envelopes with control tests written on the front. The contents of the envelope contained the control test results. Auditors were instructed that they must review the contents of the envelopes one at a time. The authors find that auditors engage in positive test strategy, which is when auditors first select evidence consistent with their hypothesized cause of the profit margin misstatement. This finding suggests that auditors engage in a confirmation biased search for information.

Kida (1984), Trotman and Sng (1989) and McMillan and White (1993) find partial evidence of auditors’ engaging in decision-focused search type. Kida (1984) and Trotman and Sng (1989) asked auditors to engage in a going-concern evaluation task. Both Kida (1984) and Trotman and Sng (1989) find limited support for confirmation biased search. In both studies, auditors were likely to examine failure cues regardless of whether they were in the failure or viable condition. One possible reason why these authors find weak support for confirmation bias is that they use a simultaneous-type information search task\(^5\).

---

\(^5\) Participants in a simultaneous information search choose the information they would like to review. The requested information is only provided to individuals after the selection phase is complete. These participants may not return to select additional information. Simultaneous information search tasks are not consistent with real-life decision scenarios because in reality decision-makers continue to request and review information until they are satisfied, and then form a decision. Further, simultaneous information search reduces and virtually eliminates confirmation bias in participants’ information search (Jonas et al. 2001). Conversely, sequential information search is more consistent with decision-making in the audit context because with this method a participant is able to request, review and evaluate information continuously until they form a decision (AICPA 1988).
McMillan and White (1993) also find weak support for auditors’ confirmation biased search type. They investigate whether auditors engage in a confirmation biased search after they formed an initial hypothesis regarding fluctuations in a client’s financial ratios. When the initial hypothesis predicts that an error caused the fluctuation, auditors engage in a biased search to confirm this hypothesis. However, auditors who initially hypothesize an environmental cause for the ratio fluctuation did not demonstrate a confirmation bias; instead they focus on a search for disconfirmatory evidence. That is, these subjects request evidence to “rule out” the ratio fluctuation as an error.

Literature in psychology and tax suggest that individuals typically engage in decision-focused search strategies resulting in confirmation biased searches. Audit literature confirms these findings in certain circumstances. Consistent with the studies described above, I assert that auditors who have knowledge of the client’s preferred accounting method adopt that method as their initial hypothesis (Kadous et al. 2008). These auditors should then begin their search by reviewing evidence consistent with the client’s preference. As they progress through their search, these auditors continue to seek supportive information and ignore or discredit evidence that refutes their initial hypothesis (Festinger 1957). A confirmation-biased pattern should arise due to the focus on their initial hypothesis that is consistent with the client’s preference. Conversely, auditors without knowledge of the client’s preference should adopt an information focus because they do not form an initial hypothesis. As they precede through their search, these auditors should attend to a variety of information. No pattern of search should arise due to auditors’ focus on gaining information to evaluate the facts presented. Extending the findings in audit (i.e. Peterson and Wong-On-Wing 2000; Turner 2001), psychology (i.e. Jonas et al. 2001)
and tax research (1999) to the audit context of evaluating a client’s preferred accounting policy, I hypothesize the following:

Hypothesis 1: Auditors with knowledge of client preference engage in a decision-focused information search whereas auditors without knowledge of the client preference engage in an information-focused search.

Influence of Information Search Type on Documentation Quality

Audit documentation provides evidence of planning, performance, and supervision of an engagement teams’ audit procedures and it is considered a factor contributing to “good professional judgment in public accounting” (Emby and Gibbins 1988, p. 287). Existing accounting research provides evidence that differences in the type of evidence reviewed (Koonce et al. 1995) and search adaptivity (Magro 2005) influence documentation.

Koonce et al. (1995) examine whether auditors’ anticipation of a workpaper review and evidence consistency (the degree to which evidence supported or refuted management’s explanations) influences auditors’ quantity and type of justifications. Participants performed planning analytical procedures, revise a budget and prepared a memo substantiating their budget changes. To measure quantity and type of justifications, the memos were coded to identify idea units, which were defined by the authors as “each mention of a case fact, thought, procedure to be performed, conclusion, and reason for conclusion” (Koonce et al. 1995 p 375). The authors measured justification quantity by counting the number of idea units within each memo. The authors measured justification type by categorizing each idea into one of three levels. The general category included statements reiterating the auditors’ judgments. Statements that focused on details regarding the case were grouped into the specific category. All other idea units were included in the middle category. Idea units in this category included statements where the participant identified a problem or requested additional information.
They find that auditors’ anticipation of a review resulted in a higher quantity of justifications; however there was no difference in justification type. With respect to evidence consistency, the authors find that the type of evidence auditors reviewed resulted in differences in their type of justifications. Auditors who viewed evidence inconsistent with management’s assertions were more likely to include documentation associated with problems or errors than those who only received confirming evidence.

Magro (2005) examines whether tax professionals’ institutional knowledge, decision context (planning or compliance) and search adaptivity\textsuperscript{6} influences their documentation quality. She asked tax professionals to complete a research assignment involving either the sale of a partnership interest or a distribution by an S-corporation to its shareholder. To identify participants’ information search adaptivity, she traced and recorded participants’ research steps through the use of the CCH ACCESS database, which is an electronic database of legal precedents and other authoritative tax guidance. Documentation quality was assessed based on two tax professionals coding the quality of each memo using a 101-point scale. She finds that tax professionals with a heightened ability to modify their search objective have higher documentation quality and that adaptivity mediated the relationship between knowledge and documentation quality.

Accounting professionals’ documentation is influenced by the type of evidence presented (Koonce et al. 1995). Extending this I posit that auditors’ documentation quality should differ based on whether they sought evidence using a decision-focused search or an information focus. As discussed previously, the PCAOB and the AICPA do not explicitly state the requirements for quality audit documentation, however they provide guidance indicating that documentation be of

\textsuperscript{6} Search adaptivity is defined as a tax professionals’ ability to modify their information search objective in response to a situation.
a nature and extent to allow another professional outside of the engagement team to gain an understanding of the procedures performed and conclusions reached. Differences in the type of information sought by auditors should influence the nature and extent of documentation and ultimately documentation quality.

Hypothesis 1 asserts that auditors who know their client preference engage in a decision-focused search. Auditors engaged in a decision-focused search should start their search consistent with the client’s preference and should then proceed through the search seeking guidance and facts in support of that policy. Building on Hypothesis 1, when auditors document their procedures and conclusions, they should highlight evidence supporting the client’s policy and downplay accounting guidance in opposition of that policy (Koonce et al. 1995). Further, because their focus is to substantiate a decision, they may use semantics to frame and justify their documented conclusion and possibly neglect important documentation requirements of the PCAOB in an effort to downplay conflicting authoritative guidance. Conversely, auditors engaged in an information-focused search should have explored a wider variety of guidance. When these auditors proceed to document their procedures and conclusions, they should highlight a broader range of guidance. As such, I expect differences in documentation quality based on auditors’ type of information search, such that auditors engaged in a more information focused search have higher documentation quality. This leads to my second hypothesis,

Hypothesis 2: Auditors engaged in a more information-focused search have higher documentation quality than those engaged in a more decision-focused search.

Information Search Depth

In this section I discuss accountability pressure and its potential influence on auditors’ information search depth. First, I provide an overview of the purpose of the Public Company Oversight Board (PCAOB) and I discuss their ability to exert accountability pressure on auditors.
Second, I discuss accounting literature investigating the role of accountability on auditors’ performance. Finally, I present my hypotheses regarding the influence of PCAOB accountability pressure on auditors’ information search depth and the influence of information search depth on documentation quality.

**PCAOB Accountability Pressure**

The purpose of the PCAOB is to “protect the interests of investors and further the public interest in the preparation of informative, accurate and independent audit reports” (PCAOB 2011). One way the PCAOB fulfills their mission is to conduct inspections of professional services firms and provide both confidential and public findings from these inspections. A component of a PCAOB inspection is the review workpapers selected from among the firm’s audit engagements, the purpose of which is to identify deficiencies in the conduct of the audit (PCAOB 2010a). Deficiencies can range from instances where the engagement team failed to comply with auditing standards to instances where the engagement team “failed to identify departures from U.S. GAAP or Securities and Exchange Commission disclosure requirements” (PCAOB 2010b, p.2).

Accountability pressure is the expectation that one must justify one’s judgments to others (Lerner and Tetlock 1999). Auditors experience accountability pressure from many sources. For example, they experience accountability toward engagement team members, concurring reviews, firm executives, client’s investors and audit committee, and the PCAOB. One source of accountability not yet addressed in the accounting literature is accountability to an outside third party, such as the PCAOB.

According to Gibbins and Newton (1994), there is a three-part process to the psychological mechanism behind accountability pressure: First, individuals must be aware of
such pressure; second, this awareness must lead individuals to seek approval or to avoid penalty; finally, they engage in a cognitive strategy to achieve their objective (Gibbins and Newton 1994).

Gibbins and Newton’s (1994) three-part process can be applied to accountability pressure induced by an expected PCAOB inspection. First, auditors are aware of accountability pressure from the PCAOB. For example, audit partners, senior managers and managers may perceive the threat of PCAOB inspection because of their previous experiences with a PCAOB review on audit engagements or because the audit engagement may be involved in ongoing litigation or other controversy (U.S. House of Representatives 2002). Audit seniors and staff are aware of this accountability pressure not only because higher-level auditors communicate their awareness but also because of public accounting firms’ quality control initiatives. These quality control initiatives allow senior and staff level auditors to be individually accountable for their audit procedures and conclusions. Second, auditors aware of a potential PCAOB inspection may engage in behavior to avoid potential penalties. For example, inappropriate application of GAAP may result in a restatement of financial statements and inappropriate application of auditing standards may result in documented deficiencies for the professional services firm. In addition, firms’ quality control initiatives can identify a workpaper preparer and assign individual penalties for inappropriate work performed. Finally, Gibbins and Newton (1994) suggest that individuals under accountability pressure engage in a cognitive strategy suited to achieve their objective. Similarly, auditors’ tailor their conduct of the audit to satisfy the objectives of professional regulations.
Influence of Accountability Pressure on Auditors’ Information Search Depth

Lerner and Tetlock (1999) indicate that individuals experiencing accountability pressure exert more cognitive effort than unaccountable individuals. This may be a result of awareness of personal consequences (Tetlock 1983). Psychology research suggests that accountability pressure motivates individuals to exert more cognitive effort (Tetlock 1983). Several accounting studies examine the influence of accountability pressure through the normal workpaper review on auditors’ performance (i.e. Johnson and Kaplan 1991; Brazel et al. 2004; Turner 2001; Koonce et al. 1995). For example, Johnson and Kaplan (1991) investigate the influence of accountability pressure on auditors’ evaluation of inventory obsolescence. They find that accountable auditors have higher self-insight than unaccountable auditors, which suggests that accountable auditors exhibited increased cognitive effort through self-monitoring activity.

Koonce et al. (1995) examine whether internal review accountability pressure and type of evidence influence auditors’ analytical procedure documentation. They find that accountable auditors document more total justifications than unaccountable auditors; however, the type of justifications (corroborating or inconsistent with management’s explanation) does not vary between the groups. Thus, accountable auditors engage in higher cognitive effort, however the increase in cognitive effort may not result in changes in their type of cognitive processing.

---

7 Auditing research typically investigates accountability pressure induced through the normal workpaper review process within engagement teams whereby a staff or senior auditors’ work is reviewed by a manager or partner within their firm. Brazel et al. (2004) and Bamber et al. (2011) examine accountability pressure derived from different types of workpaper reviews (i.e. electronic, face-to-face, online, or interview). Their findings suggest that because the type of review results in differing behavior by the auditors, it is possible that source of review could have different behavioral outcomes as well. Therefore, the study of PCAOB accountability pressure is important because this pressure may result in different behavioral outcomes than internal reviews engender.

8 To elicit accountability pressure associated with normal workpaper review these authors require audit participants to include their name and contact information on their experimental instrument. Participants’ responses are then subject to review by the researchers and/or superiors within their firm. Specifically, they state “your responses will be reviewed by the researchers in conjunction with staff at the national office...” (Johnson and Kaplan 1991 p. 102).
Several auditing studies examine properties of the reviewer (accountable source) to gain insight into how accountability pressures influence individuals’ decision processes and judgment (Turner 2001; Brazel et al. 2004). Turner (2001) is particularly relevant here. Turner (2001) examines the influence of the reviewers’ preferences (credence vs. skepticism) and the nature of the auditors’ response (belief vs. action) on auditors’ information search behavior. Her findings provide evidence that accountable auditors exhibit increased cognitive effort. Specifically, she finds that reviewer preferences do not influence the amount of time expended per evidence item reviewed; however reviewer preferences did influence the number of evidence items reviewed. Auditors facing reviewers with a credence preference (substantiate the client’s claim) engaged in lower depth of search than those who faced reviewers with no preference or a skeptical preference.

Brazel et al. (2004) also examine accountability elicited from workpaper reviewers and provide evidence that the type of accountability pressure contributes to variations in auditors’ performance. Brazel et al. (2004) use a going concern evaluation task and examined differences in auditor performance between no review, face-to-face review and electronic workpaper review. They find that auditors expecting a face-to-face review are less efficient, less likely to be influenced by prior year workpapers and have higher quality judgments than auditors expecting an electronic workpaper review. Further, they find that auditors in the face-to-face review condition engaged in more mental effort than those in the no review condition.

The above discussion indicates that accountability influences auditors’ performance (Johnson and Kaplan 1991; Koonce et al. 1995; Brazel et al. 2004; Turner 2001) by motivating auditors to exert more cognitive effort (Tetlock 1983). Auditors expecting a PCAOB review anticipate that their audit procedures undergo scrutiny during a PCAOB investigation. They
recognize that one of the goals of the PCAOB inspection team is to identify areas where the engagement team failed to identify departures from GAAP. Therefore, consistent with Koonce et al. (1995) and Turner (2001), these auditors perceiving PCAOB accountability pressure should search for more evidence and spend more time engaged in search to substantiate their conclusions regarding the acceptability of a client’s accounting policy, together, these are labeled as a “deeper” search. This leads to Hypothesis 3.

Hypothesis 3: Auditors experiencing PCAOB accountability pressure engage in a deeper information search than auditors who do not experience PCAOB accountability pressure.

_Influence of Information Search Depth on Documentation Quality_

Auditors expecting a review provide more documentation than auditors who are not expecting a review (Koonce et al. 1995), which may be attributed to auditors’ increased effort in their endeavor to avoid penalties (Gibbins and Newton 1994). Hypothesis 3 posits that auditors expecting a PCAOB inspection should engage in deeper information search. Further, those expecting a PCAOB inspection are be aware of the inspection team’s potential use of their documentation as the primary source and should reflect the PCAOB’s documentation requirements in their working papers. Auditors engaged in a deep information search should have gathered more overall evidence, including evidence that both supports and contradicts a client’s preference, on the other hand, auditors engaged in a shallow search have less evidence available when they prepare their audit documentation and therefore they have a smaller set of evidence items to support their conclusions in their memo. Further, when auditors engage in a deeper search it provides evidence of increased effort, which may carry forward from their information search to documentation. Increased effort in documentation should translate into higher documentation quality. This leads to my fourth hypothesis:
Hypothesis 4: Information search depth is related to documentation quality, such that auditors engaged in a deeper search have higher documentation quality than those engaged in a shallow information search.

Interaction of Information Search Type and Depth on Documentation Quality

Finally, I propose that auditors’ information search type and depth interact to influence the quality of their documentation quality. I propose that auditors who engage in deep search can mitigate a decision-focused bias. As a result, when auditors are engaged in a decision-focused search there is greater difference in documentation quality between auditors engaged in a deep search and a shallow search. Conversely, when auditors are engaged in an information-focused search there is less difference in documentation quality between auditors engaged in a deep search and a shallow search. Figure 2 presents my proposed hypothesis.

![Figure 2](image)

I posit in Hypothesis 1 that auditors who know their client’s preference engage in a decision-focused search. Those engaged in a decision-focused search should initially seek evidence supporting that preference. Auditors who conduct both a biased and shallow should place more importance on supporting information and ignore or discredit information that contradicts the client’s preference (Festinger 1957) because their search focus is on that
preference. Therefore, the documentation of decision-focused auditors with shallow search depth closely follows the facts and supporting evidence presented by the client. However, when decision-focused auditors engage in a deep search due to the threat of a potential PCAOB inspection, they engage in a more effortful search to ‘rule out’ a potential error in the initial decision (McMillan and White 1993). As a result they should seek more guidance items and guidance items that are both consistent and inconsistent with the client’s preference. As such, these auditors’ documentation should reflect their consideration of evidence contrary to that proposed by the client. Further, because the auditors’ documentation may include a departure from the client’s preference, these auditors should include more information regarding the nature and extent of their procedures to justify their conclusions.

Conversely, auditors’ without knowledge of the client’s decision should engage in an information-focused search and therefore seek a wide variety of evidence before completing their search process. Auditors who conduct both an information-focused and shallow search should have gathered enough information to form and document a judgment. However, those who conduct both an information-focused and deep search may have gathered both a wide variety and a larger quantity of information from their search processes. Therefore, their documentation should reflect not only sufficient content to substantiate their judgment but also content reflective of their effortful search. For example, auditors engaged in an information-focused and deep search may incorporate evidence of their judgment process during the information search phase. Therefore, there I expect a smaller difference in the documentation quality of auditors’ engaged in a deep search and those engaged in a shallow search when their initial search type is information based. This leads to my fifth hypothesis, which is presented in Figure 2 and below.
Hypothesis 5: Information search type and depth interact, such that

A) when auditors initially engage in a decision-focus search there is greater difference in documentation quality between auditors engaged in a deep search and those engaged in a shallow search and

B) when auditors initially engage in an information-focused search there is less difference in documentation quality between auditors engaged in a deep search and those engaged in a shallow search.
CHAPTER 3
METHODOLOGY

This chapter describes the methodology used to test my hypotheses. I test my hypotheses through an experiment administered to experienced auditors. In the following sections, I discuss my research design, development of my experimental instrument, measurement and testing of hypotheses, and pilot test.

Research Design and Participants

I use a 2 x 2 between-subjects design to examine whether client preference and PCAOB accountability pressure influence auditors’ information search behaviors and whether auditors’ information search behavior influences auditors’ documentation. I manipulate the independent variables of knowledge of client preference (presence or absence of client’s accounting policy preference) and PCAOB accountability pressure (presence or absence of a threat of a PCAOB investigation). I measure three variables, information search type, information search depth, and documentation quality.

In this study, the information search variables are used as both dependent variables and independent variables. When I examine the determinants of information search behavior, search type and depth are dependent variables. Specifically, information search type is the dependent variable of interest in Hypothesis 1 and information search depth is the dependent variable of interest in Hypothesis 3. When I examine the determinants of documentation quality, search type and depth serve as independent variables. Specifically, information search type is the independent variable in Hypothesis 2, information search depth is the independent variable in Hypothesis 4 and both search type and depth as well as their interaction are the independent variables in Hypothesis 5.
Libby et al. (2002) indicate that researchers should consider the requirements of an experiment to determine the appropriate level of subject. Professional auditors are the ideal participants for my experiment for several reasons. First, professional auditors have been introduced to the various accountability sources within their public accounting firm as well as third-party accountability sources, since they should have experience with accountability pressure from the PCAOB. Second, professional auditors have engaged in tasks similar to that used in my study. For each audit engagement, auditors evaluate a client’s accounting policies in connection with their evaluation of the presentation financial statement assertion and revenue recognition is one area where there is extensive guidance. Third, professional auditors are familiar with preparing audit documentation, including a Revenue Recognition Memo as required by my task.

I recruit my subjects in two ways. First, I elicit participants during a mid-sized auditing firms’ national training session for managers. In addition, I utilize my contacts with professional services firms to seek voluntary auditor participants. These participants are asked to participate by a senior manager within their firm.

Experimental Instrument

*Overview of Experimental Procedures*

The data are gathered using an electronic experimental task controlled and administered via a password-protected website. The website was created using Qualtrics, WordPress, and Woopra software. Qualtrics is used to present assignment and background information and to collect participants’ responses to manipulation check, demographic questions, and dependent variables other than participants’ search pattern and depth. WordPress and Woopra are used to
construct the electronic database employed by participants during the information search phase of the study and to track participant search patterns and timing.

Upon entering the website, participants are asked to login using their provided unique username and password. Once they enter the website, they are provided general information, including the IRB informed consent notification and information regarding the study procedures. There are four phases to the study, which are outlined in Figure 3. During the first phase of the study, participants must respond to multiple-choice questions eliciting their knowledge of revenue recognition. They are also provided with an audit assignment memo, audit background, company background, and sales contract facts. The audit background serves as the manipulation of PCAOB accountability pressure. The sales contract facts contain the client preference manipulation. After reviewing the assignment and background information, participants proceed to the second phase of the study, “Information Search”.

The second phase, information search, requires participants to select authoritative guidance summarized from that issued by the Financial Accounting Standards Board (FASB), Securities Exchange Commission (SEC), and PCAOB as well as hypothetical competitors’ accounting policies. Participants are given twenty items to select. Of the twenty items, thirteen are authoritative guidance summarized from that issued by the FASB and are presented numerically, which is consistent with the FASB’s codification. I choose four categories of FASB guidance. (1) “605-10: Revenue Recognition – Overall”, which give an overall summary of revenue recognition criteria; (2) “605-25 Multiple-Element Arrangements”, which is guidance appropriate for the Sales Contract facts; (3) “605-35: Production-Type Contracts”, which is not directly applicable to the Sales Contract facts; and (4) “985-605: Software Revenue Recognition” which could be viewed as applicable to the Sales Contract facts and is the client’s preference.
Appendix A presents screen shots from the database. Prior to beginning the search, participants are instructed to take notes for use when they prepare their Revenue Recognition Memo. Participants may type their own notes or copy and paste text directly from the items provided during search to their notes page. Participants are informed that their notes are being saved and are provided during the conclusions phase. They are also informed that they cannot return to the information search page after they continue to the next phase. Participants are prohibited from continuing to Phase 3 for five minutes, however they must complete their search within 40 minutes. After 40 minutes, participants are automatically forwarded to the next phase.

The third phase, Conclusions, requires participants to prepare a Revenue Recognition memo to the audit files. Participants are instructed that the memo to the audit files should addresses the client’s revenue recognition issues and document their decision regarding the appropriate policy for the client’s new sales contract. They are further instructed that the memo should include their consideration of the appropriate audit approach. Following their memo writing, participants respond to questions eliciting their perception of the importance of each guidance item presented in the information search phase. They also respond to manipulation check questions for each of the independent variables in the study. During the fourth phase of the study, participants completed demographic and other study-related questions.
**Figure 3**
Overview of Experiment

| Login |

**Preliminary information**

1st Participants login using a provided unique user ID and password. They must review the IRB consent form and provide consent to continue to the study.

2nd Participants review outline of the study’s four phases.

**PHASE 1: BACKGROUND & ASSIGNMENT**

1st Participants answer multiple-choice questions assessing their knowledge of the FASB and SEC’s policies with respect to revenue recognition.

2nd Participants review the assignment memo, which instructs them to conduct a search to ultimately complete a Revenue Recognition Memo.

3rd Participants review Audit Background, which serves as the manipulation of PCAOB accountability pressure.

4th Participants review Company Background, which is consistent across conditions.

5th Participants review Sales Contract Facts, which serves as the manipulation of Client Preference.

**PHASE 2: INFORMATION SEARCH**

Participants are provided a database of authoritative guidance and other information, and instructed to review as many items as they deem necessary. Participants are told that they must remain on the search page for 5 minutes but that they are automatically advanced to the next phase of the study after 40 minutes. Participants are instructed to take notes for later use. Appendix A presents screen shots from the database.

**PHASE 3: CONCLUSIONS**

Participants write a Revenue Recognition memo to the audit files.

Participants respond to manipulation check questions.

**PHASE 4: QUESTIONNAIRE**

Participants provide responses to demographic and other study related questions.
Task Development

During this experiment, participants are asked to evaluate a hypothetical client’s revenue recognition policy related to a new sales contract. I chose revenue recognition evaluation for several reasons. First, there is extensive revenue recognition guidance issued by both the FASB and the SEC under several different topical headings. To reach my goal to elicit auditors’ information search pattern, I provide participants with a variety of guidance to review and select for further investigation. Second, evaluation of a client’s revenue recognition policies is a common audit task within public accounting firms. Through informal discussions with experienced auditors I was told that audit engagement teams are often required to complete a Revenue Recognition memo documenting client’s arrangement-specific revenue recognition issues, the engagement team conclusions regarding compliance of the client’s revenue recognition policies with the applicable GAAP literature, and a description of the engagement team’s audit approach. Third, in accounting research, several studies use evaluation of client’s accounting policies to examine issues related to auditors’ judgments (i.e. Jenkins and Haynes 2003; Hackenbrack and Nelson 1996). Given the importance of auditor judgments surrounding their evaluation and acceptance of client’s accounting policies, the task is appropriate for the objectives of this research.

I adapted my revenue recognition evaluation task from a case provided by a mid-sized public accounting firm and used by Olvera and Curtis (2012). I made slight modifications to the existing case (See Appendix B for the experimental task: sales contract facts) by reducing the number of facts outlined in the sales contract. I include only those facts necessary for participants to determine the appropriate revenue recognition policy.
Study Variables

Recall that I have two primary goals of this study. First, to gain an understanding of auditors’ information search behaviors and second to examine differences in auditors’ documentation quality based on their information search behavior. To satisfy the first goal, I manipulate two independent variables and I measure two information search behavior variables. I manipulate the independent variables of knowledge of client preference (presence or absence of client’s accounting policy) and PCAOB accountability pressure (high or low threat of a PCAOB investigation). Auditor participants were randomly assigned to one of the four experimental conditions by the website. My dependent variables are measured variables of information search behavior: information search type (information-focus or decision-focus) and information search depth (shallow search or deep search). These variables are used to examine Hypotheses 1 and 3.

To satisfy the second goal, examination of the relationship between information search behavior and documentation quality, I use information search type (information-focus or decision-focus) and depth (shallow search or deep search) variables as independent variables. My dependent variable is a measured variable identifying documentation quality. Below I discuss each variable in depth.

Manipulated Variables

Knowledge of Client Preference

I manipulate participant auditors’ knowledge of the client preference using the hypothetical client’s new sales contract facts. Auditors in the presence of the client’s accounting policy condition are told that XYZ management has reviewed the contract and applicable accounting guidance and has decided to account for the sales in accordance with ASC 985-605-
“Software Revenue Recognition”, since they believe that no Vendor Specific Objective Evidence exists for all elements. Therefore, the company will recognize the revenue when all elements of the arrangement have been delivered. Auditors in the absence of the client accounting policy condition are instructed that XYZ management has reviewed the contract but has not communicated its preferred revenue recognition policy.

PCAOB Accountability Pressure

I manipulate PCAOB accountability pressure using the audit background. In the presence of the threat of a PCAOB investigation condition participant auditors are told that the engagement team partner has indicated to the engagement team that the PCAOB is extremely likely to perform an inspection of your workpapers after your completion of the 2010 audit. They are further instructed that their judgments, processes, and documentation will be subject to extreme scrutiny and results reported to the firm’s human resources. Participant auditors in the PCAOB accountability pressure absent condition were told that the engagement team partner has indicated to the team that the PCAOB is unlikely to perform an inspection of the workpapers after your completion of the 2010 audit. They are further instructed that their workpapers will not be subject to a review by the PCAOB inspectors.

Measured Variables

Information Search Type

Recall that in this study, I use the measured variable, information search type, as both an independent and dependent variable. First, information search type is the dependent variable when I examine whether knowledge of the client’s preference influences auditors’ search type. Second, information search type is the independent variable when I examine whether differences in search type influence auditors’ documentation quality.
Specifically, I am interested in whether auditors engage in an information-focused or decision-focused search type. As discussed previously, when individuals engage in a decision-focused search they show a preference for supportive information during the process of information seeking. When individuals engage in an information-focused search their intent is to seek a variety of information. During an information-focused search, individuals focus more on the information presented and less on the ultimate decision. I use three measures to identify auditors’ information search type. The first measure emphasizes the order of items viewed during auditors’ search while the other two measures emphasize aspects of time. I consider both relative and absolute time spent reviewing items associated with the client’s accounting policy. Below, I provide a discussion of each measure of information search type.

My first measure, rank pattern-of-search (hereafter referred to as RANK), is based on a measure developed by Turner (2001). I calculate RANK as follows: First, I categorize each evidence item as either consistent with the client’s preference or not consistent with the client’s preference. An expert auditor has previously reviewed these categorizations and confirmed that each item is either consistent with or not consistent with the client’s preferred accounting policy in the case materials. Figure 4 presents each guidance item and its categorization of consistency with the client’s preference.
<table>
<thead>
<tr>
<th>Guidance Item</th>
<th>Consistent or Not Consistent with the Client’s Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Company Information</strong></td>
<td></td>
</tr>
<tr>
<td>Company Background</td>
<td>Not consistent</td>
</tr>
<tr>
<td>Sales Contract Facts</td>
<td>Not consistent</td>
</tr>
<tr>
<td><strong>Revenue Overall</strong></td>
<td></td>
</tr>
<tr>
<td>605-10: Revenue Recognition – Overall</td>
<td>Not consistent</td>
</tr>
<tr>
<td><strong>Multiple-Element</strong></td>
<td></td>
</tr>
<tr>
<td>605-25-15: Multiple-Element Arrangements Scope &amp; Scope Limitations</td>
<td>Not consistent</td>
</tr>
<tr>
<td>605-25-25: Multiple-Element Arrangements Recognition</td>
<td>Not consistent</td>
</tr>
<tr>
<td>605-25-30: Multiple-Element Arrangements Initial Measurement</td>
<td>Not consistent</td>
</tr>
<tr>
<td>605-25-55: Multiple-Element Arrangements Examples &amp; Implementation Guidance</td>
<td>Not consistent</td>
</tr>
<tr>
<td><strong>Production-Type Contracts</strong></td>
<td></td>
</tr>
<tr>
<td>605-35-15: Production-Type Contracts Scope &amp; Scope Limitations</td>
<td>Not consistent</td>
</tr>
<tr>
<td>605-35-25: Production-Type Contracts Recognition</td>
<td>Not consistent</td>
</tr>
<tr>
<td>605-35-25: Production-Type Contracts Initial Measurement</td>
<td>Not consistent</td>
</tr>
<tr>
<td>605-35-55: Production-Type Contracts Examples &amp; Implementation Guidance</td>
<td>Not consistent</td>
</tr>
<tr>
<td><strong>Software</strong></td>
<td></td>
</tr>
<tr>
<td>985-605-15: Software Scope and Scope Limitations</td>
<td>Consistent</td>
</tr>
<tr>
<td>985-605-25: Software Recognition</td>
<td>Consistent</td>
</tr>
<tr>
<td>985-605-25: Software Initial Measurement</td>
<td>Consistent</td>
</tr>
<tr>
<td>985-605-55: Software Examples &amp; Implementation Guidance</td>
<td>Consistent</td>
</tr>
<tr>
<td><strong>Other Information</strong></td>
<td></td>
</tr>
<tr>
<td>PCAOB AS No. 3 Audit Documentation</td>
<td>Not consistent</td>
</tr>
<tr>
<td>SAB Topic 13 – Revenue Recognition</td>
<td>Not consistent</td>
</tr>
<tr>
<td><strong>Competitors’ Accounting Policies</strong></td>
<td></td>
</tr>
<tr>
<td>Apple, Inc</td>
<td>Not consistent</td>
</tr>
<tr>
<td>Microsoft Corporation</td>
<td>Not consistent</td>
</tr>
<tr>
<td>Wizzard Software Corporation</td>
<td>Not consistent</td>
</tr>
</tbody>
</table>
Second, for each participant, I rank each evidence item in the order viewed. As there are twenty items available, the highest rank of twenty is assigned to the evidence item selected first, nineteen is assigned to the evidence item selected second, and so forth. Third, I sum the rank of each item coded as consistent with the client’s preference rank and divide by the sum of the ranks of all of the evidence items examined. The values for this variable range from 0 (information-focused search) to 1 (decision-focused search) and a lower value indicates a more information-focused search. Information-focused search has a lower value because the numerator is low indicating that the participants viewed items consistent with the client’s preference after they viewed inconsistent items. Ultimately this suggests that they placed lower emphasis on the consistent items. Figure 5 depicts examples of the method to calculate RANK. Panel A depicts a search pattern that is decision-focused and therefore consistent with the client’s preference and Panel B depicts a search pattern that is information-focused and therefore not consistent with the client’s preference.

The RANK measure is an appropriate measure of auditors’ information search type for two reasons. First, this measure has been validated in prior research (Turner 2001). Second, the RANK measure jointly considers whether the evidence items viewed were consistent or not consistent with the client’s preference and the order in which participants selected and viewed the evidence item. This joint consideration allows me to consider both the magnitude and the direction of the auditors’ search.

My second measure of auditors’ information search type examines the relative amount of time auditors spend reviewing items consistent with the client’s preference. This measure, ratio of time spent viewing items consistent with the client’s preference to total items viewed (hereafter referred to as CONSIST), is based on that of the time measure used in tax research
### Figure 5
Information Search Type: Example of RANK measure calculation

#### Panel A: Example of decision-focused information search pattern

<table>
<thead>
<tr>
<th># of items sought</th>
<th>Items Sought</th>
<th>Categorization</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>985-605-15: Software Scope and Scope Limitations</td>
<td>Consistent</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>985-605-25: Software Recognition</td>
<td>Consistent</td>
<td>19</td>
</tr>
<tr>
<td>3</td>
<td>985-605-25: Software Initial Measurement</td>
<td>Consistent</td>
<td>18</td>
</tr>
<tr>
<td>4</td>
<td>985-605-55: Software Examples &amp; Implementation</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Guidance</td>
<td>Consistent</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>SAB Topic 13</td>
<td>Not Consistent</td>
<td>16</td>
</tr>
<tr>
<td>6</td>
<td>Apple, Inc</td>
<td>Not Consistent</td>
<td>15</td>
</tr>
</tbody>
</table>

Total: 105
Total consistent ranks: 74
RANK value assigned to pattern of search variable: 0.7048

#### Panel B: Example of information-focused search pattern

<table>
<thead>
<tr>
<th># of items sought</th>
<th>Items Sought</th>
<th>Categorization</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>605-10: Revenue Recognition – Overall</td>
<td>Not consistent</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>605-25-15: Multiple-Element Arrangements Scope &amp;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scope Limitations</td>
<td>Not consistent</td>
<td>19</td>
</tr>
<tr>
<td>2</td>
<td>605-25-25: Multiple-Element Arrangements</td>
<td>Not consistent</td>
<td>18</td>
</tr>
<tr>
<td>3</td>
<td>Recognition</td>
<td>Not consistent</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
<td>985-605-15: Software Scope and scope Limitations</td>
<td>Consistent</td>
<td>16</td>
</tr>
<tr>
<td>5</td>
<td>985-605-25:Software Initial Measurement</td>
<td>Consistent</td>
<td>15</td>
</tr>
<tr>
<td>6</td>
<td>PCAOB AS No 3 Audit Documentation</td>
<td>Not Consistent</td>
<td>14</td>
</tr>
<tr>
<td>7</td>
<td>Microsoft Corporation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total: 119
Total consistent ranks: 33
RANK value assigned to pattern of search variable: 0.2773
(i.e. Cloyd and Spilker 1999; Kadous et al. 2008). I calculate CONSIST as the amount of time spent reviewing evidence items that are consistent with the client’s preference minus the amount of time spent reviewing evidence items that are not consistent with the client’s preference divided by the total amount of time engaged in search. A positive value indicates a decision-focus search where the auditor spent more time examining evidence items consistent with the client’s preference. A negative value indicates an information-focus where the auditor spent more time examining evidence items not consistent with the client’s preference.\(^{10}\)

This measure is an appropriate measure of auditors’ information search type for two reasons. First, this measure was adapted from a similar measure used in existing research (i.e. Cloyd and Spilker 1999). Second, the CONSIST measure allows me to consider the relative amount of time auditors’ spent reviewing items consistent and inconsistent with the client’s preference.

My third measure of auditors’ information search type considers the absolute amount of time auditors’ spent reviewing items consistent with the client’s preference. This measure, time spent per software item viewed (hereafter referred to as TPSI), captures the extent to which the auditor considers the client’s preference during search. I calculate the TPSI variable as the amount of time (in milliseconds) spent reviewing software revenue recognition guidance divided by the total number of software revenue recognition items reviewed. A higher value indicates more time spent per item within the client’s preferred guidance and therefore suggests a decision-focused search. A lower value indicates less time spent per item within the client’s preference.

---

\(^{10}\) Although the CONSIST measure described above is calculated in the same manner as that used in prior literature (i.e. Cloyd and Spilker 1999 and Kadous et al. 2008) I also calculated the measure in the same manner as the RANK measure. The modified CONSIST measure is calculated as the amount time spent on items consistent with the client’s preference divided by the total amount of time engaged in search. I performed statistical analyses using the modified CONSIST measure and there are no differences in the reported results.
preferred guidance and therefore suggests an information-focused search. This measure is an appropriate measure of auditors’ information search type because it considers the absolute amount of time auditors spent considering guidance within the client’s preference. Items that the individual selected and spent more time on suggest that the individual viewed the content of the evidence item and considered its content. Items that the individual selected and spent little time on suggest these evidence items were used to a lesser extent in the individual’s search process and are given less weight in determining the auditors’ search type.

Information Search Depth

Recall that in this study, I use the measured variable, information search depth, as both an independent and dependent variable. Search depth is the dependent variable when I examine whether PCAOB accountability pressure influences search type. Search depth is the independent variable when I examine whether differences in search depth influence auditors’ documentation quality.

Specifically, I am interested in whether auditors engaged in a deep or a shallow search. To operationalize search depth, I use two measures. My first measure of search depth is the total amount of time engaged in search (DURATION). The DURATION measure is the total number of seconds auditors’ spent engaged in seeking evidence items. This is an appropriate measure of search depth for two reasons. First, it is consistent with that used in tax research investigating professionals’ information search behaviors (Cloyd 1995, 1997). Second, it provides information regarding the duration of auditors’ search activities. And it takes into account the possibility that auditors may choose to select the same evidence items multiple times.

My second measure of auditors’ search depth is the number of evidence items viewed (ITEMS). This measure and the number of evidence items examined (excluding repeats) are
consistent with the “amount of information searched” measure used by Turner (2001). Auditors were not instructed to view a specified number of items or to engage in search for a specified amount of time, therefore the ITEMS and DURATION measures capture the intensity of the search in which the auditor engaged.

Documentation Quality

In this study I examine whether auditors’ information search type and depth influence documentation quality. To measure documentation quality, I developed a QUAL_SCORE, measure as follows. Each memo is coded to identify key elements deemed necessary for audit documentation by the PCAOB or by firm guidance\(^{11}\). QUAL_SCORE is the summation of the total point value from each of eight categories, which are presented along with their point values in Figure 6. Each category is assigned two points and assigned as follows: Zero points are awarded if the participant failed to adequate address the category’s content, one point was awarded for partial consideration of the category’s content and two points were awarded for total consideration of the category’s content. Ultimately, QUAL_SCORE ranges from 0 to 16 where 0 indicates the lowest possible quality and 16 indicates the highest possible quality. A doctoral student with five years of public accounting experience and I coded each Revenue Recognition Memo using a coding rubric containing eight categories. I calculated interrater reliability for each of the eight categories using Cohen’s Kappa. The average Cohen’s Kappa across all categories was 0.30 indicating a fair level of interrater reliability (Landis and Koch 1977). Interrater reliability for each of the categories is presented in Figure 6. To address differences

\(^{11}\) I obtained and reviewed revenue recognition memo instructions and guidance template from the professional services firm who provided manager subjects. I extracted two requirements independent of those outlined by the PCAOB for inclusion in the documentation score measure. These two requirements are “incorporation of authoritative guidance” and “discussion of relevant revenue recognition issues”.

40
between raters scoring, a senior manager employed by the auditing firm providing the manager participants reconciled differences in the initial coding, which are used in statistical analyses.
<table>
<thead>
<tr>
<th>QUAL SCORE Coding Criteria</th>
<th>Cohen's Kappa</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the memo adequately identify its purpose? (2 pts)</td>
<td>0.800</td>
</tr>
<tr>
<td>2. Does the memo include a discussion of the relevant revenue recognition issues under consideration? (2 pts)</td>
<td>0.574</td>
</tr>
<tr>
<td>3. Does the memo include a summarization of the sales contract facts provided by the scenario? (2pts for both sales contract facts and company background 1 pt for sales contract facts or company background)</td>
<td>0.464</td>
</tr>
<tr>
<td>4. Does the memo incorporate authoritative guidance and does the memo include a discussion of how the cited guidance relates to the sales contract facts under review? (2 pts if the memo includes both authoritative guidance and a discussion 1pt if the memo includes authoritative guidance but does not provide an adequate link to sales contract facts or company background)</td>
<td>0.649</td>
</tr>
<tr>
<td>5. Does the memo provide a conclusion regarding the appropriate methodology to record the revenue associated with the sales contract facts and company background in the scenario? (2pts if the memo included timing of revenue recognition or a mathematical computation of the amount of revenue to be recognized in the period 1 pt if only included general description of appropriate methodology.)</td>
<td>0.540</td>
</tr>
<tr>
<td>6. Does the memo include a discussion of the appropriate audit procedures necessary for the sales contract? (2pts)</td>
<td>0.806</td>
</tr>
<tr>
<td>7. Is the memo complete? (2 pts for fully complete discussion of background, guidance, conclusion and audit procedures and 1 pt for partial or incomplete discussion of the aforementioned items)</td>
<td>0.693</td>
</tr>
<tr>
<td>8. Does the language of the memo suggest that that the author considered &quot;Software Revenue Recognition&quot; guidance? (2pts)</td>
<td>0.700</td>
</tr>
</tbody>
</table>
Testing Hypotheses

In this section, I provide a detailed discussion of the methods I use to test each hypothesis. I perform hypotheses testing consistent with my research framework, which is presented in Figure 1. Recall that Hypothesis 1 and Hypothesis 3 examines auditors’ information search behaviors and hypotheses two, four and five examine the relationship between auditors’ information search behaviors and documentation quality. First, I discuss the statistical tests I use to examine information search behaviors (Hypotheses 1 and 3). Second I discuss the statistical tests I use to examine documentation quality (Hypotheses 2, 4, and 5). Finally, I discuss covariates considered in statistical analysis.

Information Search Behaviors

In this section, I discuss the method I use to statistically examine Hypothesis 1 and Hypothesis 3, which examine the relation between client preference and information search type and PCAOB accountability pressure and information search depth respectively.

Hypothesis 1 posits that auditors with knowledge of the client’s preferred accounting policy engage in a decision-focused search whereas auditors without knowledge of the client preference engage in an information-focused search. I operationalized the auditors’ information search type in three ways. First, I examine their pattern of search using an order measure that identifies the magnitude and direction of search (RANK). Second, I examine the relative time they spend examining evidence items consistent with the client’s preference (CONSIST). Finally, I consider the absolute amount of time spent per item consistent with the client’s preference (TPSI). To test Hypothesis 1, I use MANOVA\textsuperscript{12} to compare the dependent measures

\textsuperscript{12} Literature was reviewed to identify possible covariates in the relationship between client preference and information search type. As theory did not indicate any necessary covariates in this relationship I review correlations among the study variables to determine if a covariate in necessary in the hypothesis testing.
between subjects in the client preference conditions (unknown vs. known). I expect that auditors in the known client preference condition to engage in a more decision-focused search type than auditors in the unknown client preference condition.

Hypothesis 3 examines the influence of PCAOB accountability pressure on auditors’ information search depth. Specifically, Hypothesis 3 states that auditors experiencing PCAOB accountability pressure engage in a deeper information search than those who do not experience PCAOB accountability pressure. I operationalized depth of information search using two measures. I examine the amount to time engaged in search (DURATION) and the number of evidence items examined (ITEMS). Using MANCOVA, I examine the two measures of information search depth as dependent variables while controlling for the effects of participants’ relevant knowledge. I expect that auditors experiencing PCAOB accountability pressure spend more time and view more evidence items than those who do not experience PCAOB accountability pressure.

Documentation Quality

In this section, I discuss the methods I use to statistically examine Hypothesis 2, 4 and 5, which examine the relation between information search behavior and documentation quality.

Recall that Hypothesis 2, indicates a relationship between information search type and documentation quality such that auditors engaged in a more information-focused search have higher documentation quality. To test this hypothesis, I perform regression analysis using each measure of search type (RANK, CONSIST, and TPSI) on QUAL_SCORE. I examine the one-tailed p-value for each regression. A significant p-value allows me to reject the null hypothesis and indicates that there is a relationship between information search type and documentation quality.
Hypothesis 4 predicts that auditors who engage in a deeper search have higher documentation quality than auditors who engage in shallow search. To evaluate this hypothesis, I perform regression analysis on each measure of search depth (DURATION and ITEMS) on QUAL_SCORE. Further, I examine the beta coefficient to determine the direction of the relationship between search depth and documentation quality. I expect a positive significant relationship such that as the search depth increases documentation quality also increases.

Finally, Hypothesis 5 examines the interactive effects of search type and depth on documentation quality. I posit that there is greater difference in documentation quality between auditors engaged in a deeper search compared to a shallow search when their initial search is more decision-focused, and less difference in documentation quality between auditors engaged in a deeper search compared to a shallow search when they initially engaged in a more information-focused search. Specifically, I suggest that auditors engaged in a more deep and information-focused search have the highest documentation quality and those engaged in a shallow and decision-focused search have the lowest quality. To determine the interactive relationship between search type and depth on documentation quality I perform several regression analyses. I regress each measure of information search type (RANK, CONSIST, TPSI) and each measure of search depth (DURATION and ITEMS) and their interaction on QUAL_SCORE. I evaluate a one-tailed p-value and determine the direction of the interaction by examining the cell means generated by performing a median split on information search type and depth variables.

Covariates

During hypothesis testing I consider covariates that may influence the relationship between my independent and dependent variables. I consider covariates of age, gender, and experience related variables, such as the number of months of experience, industry expertise, and
experience associated with preparing a revenue recognition memo, through a correlation analysis. Demographic variables that are significantly correlated with variables of interest are included in statistical testing.

I also consider participants’ prior knowledge of revenue recognition (KNOWLEDGE). Professionals’ prior but relevant knowledge influences search behavior (Cloyd 1995). Auditors with higher general knowledge of revenue recognition guidance may engage in shallower search strategies than those that have lower general knowledge. As such, I include this variable as a covariate in my hypothesis testing. I elicit auditors’ general revenue recognition knowledge by asking participants to respond to three multiple-choice questions. I calculate KNOWLEDGE as the number of correct answers to the multiple-choice questions.

Validation and Pilot Testing

I pilot test the experimental instrument twice. I first pilot test involved students enrolled in a graduate auditing course. The primary goal of this pilot test is to ensure that the website used to collect participant responses and search patterns was properly operating and recorded necessary data. The first pilot test is administered to 35 students (14 male and 21 female) with a mean age of 26.6 years. The results of this pilot test indicate that the website was operating appropriately. Further, the data provides some evidence of the hypothesized relationships. However, these participants have no professional auditing experience; therefore to gain insight into my manipulations of client preference and PCAOB accountability pressure I conduct a second pilot test.

I made no significant changes to the experimental instrument subsequent to the first pilot study. The second pilot study is conducted using 10 experienced auditors from a mid-sized professional services firm (8 males and 2 female) with a mean age of 29.1 years. Auditors range
from staff member with eight months of experience to senior manager with twenty-seven years of experience. I note that five auditors were classified as staff auditors and three auditors were classified as managers. The mean experience level is 5.11 years.

The purpose of this pilot is to determine whether the manipulations of client preference and PCAOB accountability pressure are appropriate. Based on initial data provided, 9 participants responded to the manipulation check questions correctly. The participant who failed to correctly respond to the manipulation check question inappropriately indicated that the PCAOB is likely to inspect the client in the current year. Due to the size of the second pilot test, no statistical testing is reported; however I note that the mean values associated with the manipulation check for PCAOB accountability pressure are in the expected direction for the usable subjects. No substantive modifications are made to the experimental instrument subsequent to the professional pilot test.

The next chapter presents the results of my dissertation experiment.
CHAPTER 4
RESULTS

This chapter presents the results of my dissertation experiment. First, I describe the participant demographic information. Second I discuss an examination of manipulation checks for the manipulated independent variables of client preference (unknown vs. known) and PCAOB accountability pressure (low vs. high). Third, I provide an overview of the data collected, which includes a description of information search data and the correlation analysis of the variables of interest. Fourth, I discuss hypotheses tests and evaluate whether the data supports the hypothesized predictions. Finally, I provide a discussion of supplemental analyses.

Participant Demographic Information

The participants in the study are experienced professional auditors employed at a mid-sized professional services firm. The experiment was administered to 44 auditors at the beginning of “Complex Revenue Recognition” module of the firm’s national training. Although the initial subject pool was 44 subjects, two auditors experienced technology issues and were unable to complete the experiment. One auditor failed to complete the documentation phase of the experiment; therefore the partial response was ignored in data analysis. Additionally, I assigned usernames to each participant in order to match the participant’s information search behavior to their revenue recognition memos and demographic information. Four auditors failed to provide the assigned username during phase 2 of the experiment. As the experimental instructions explicitly stated that the participants were required to provide their username during phase 2 of the experiment, I eliminate those four participants who failed to fully comply with the experimental instructions. Elimination of the above these observations resulted in 37 usable responses. In addition, I include the responses from three managers who participated in my
above mentioned professional pilot test. As a result, I conduct my analysis using 40 manager participant responses.  

Table 1 presents the descriptive statistics for the 40 usable manager participant responses. Of the usable responses 23 were male and 14 female. The mean age was 32.25 (SD = 4.49), with a range of 28 to 52. Participants have mean experience of 93.41 (SD = 38.56) months, with a range of 36 to 264 months. All participants were classified as managers by the firm.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Participants Demographic Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Number</td>
</tr>
<tr>
<td>Male</td>
<td>26</td>
</tr>
<tr>
<td>Female</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>28</td>
<td>59</td>
<td>32.86</td>
</tr>
<tr>
<td>Experience (in months)</td>
<td>36</td>
<td>264</td>
<td>92.65</td>
</tr>
</tbody>
</table>

Manipulation Checks

To assess the validity of the data obtained from professional participants, the experimental instrument contained manipulation checks for both of my independent variables. In this section, I discuss validation of the data.

The experimental instrument contained two manipulations: Client Preference (present or absent) and PCAOB accountability pressure (high or low). Manipulation check questions were presented during Phase 4: Questionnaire. The manipulation check question for client preference required the participant to indicate whether the client preference was unknown or known in the

---

13 I include only the audit managers from the pilot study because audit staff do not have the same level of expertise associated with evaluating client accounting policies and writing revenue recognition memos.
given scenario. I note that 34 (85.00%) of participants passed the client preference manipulation check question, the remaining 6 (15.00%) of participants failed the client preference manipulation check. Table 2 Panel A shows the number (percentage) of participants who passed the manipulation check by client preference condition.  

There are two manipulation check questions for PCAOB accountability pressure. The first manipulation check is categorical requiring participants to respond to the following question: “With respect to this scenario, what is the likelihood that the PCAOB will review the XYZ Company audit engagement after the completion of the 20X0 audit?” I note that 34 (85.00%) of participants passed the PCAOB manipulation check question, the remaining 6 (15.00%) of the participants failed the categorical PCAOB manipulation check question. Table 2 Panel B shows the number (percentage) of participants who passed the manipulation check by PCAOB Accountability Pressure condition. The second PCAOB Accountability Pressure manipulation check question is scale based and requires participants to respond to the following question: “With respect to this scenario, to what extent were you consciously aware that your work will be reviewed by the PCAOB?” Participants’ respond to this question using a 7-point Likert scale where 1 = None and 7 = Extremely. Results of the PCAOB accountability manipulation check are reported in Table 1 Panel B and support the effectiveness of the PCAOB accountability manipulation. Participants in the low PCAOB accountability pressure condition reported

---

14 I report hypotheses testing using all usable data, however I also consider hypotheses testing by excluding those participants that failed to respond correctly to the manipulation check questions. With respect to the client preference manipulation check, I perform the analysis of H1 excluding the six auditor participants failing to respond correctly to the client preference manipulation check (n = 34). The results are consistent with those reported. With respect to the PCAOB accountability manipulation check, I perform the analysis of H3 excluding the six auditor participants failing to respond correctly to the PCAOB accountability pressure manipulation check (n=34). The results are consistent with those reported.

15 Only one participant failed both the client preference and the categorical PCAOB accountability pressure manipulation check questions.
significantly lower awareness that their work would be reviewed by the PCAOB (mean = 3.94) than those in the high PCAOB accountability pressure (mean = 5.64) condition (t(38) = 3.281, p < 0.000).
Table 2
Examination of Manipulation Checks

Panel A: Client Preference

<table>
<thead>
<tr>
<th>Categorical Manipulation Check</th>
<th>Client preference</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unknown (n = 22)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number responded correctly</td>
<td></td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Percentage responded correctly</td>
<td></td>
<td>90.91%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Known (n = 18)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number responded correctly</td>
<td></td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Percentage responded correctly</td>
<td></td>
<td>77.78%</td>
<td></td>
</tr>
</tbody>
</table>

Panel B: PCAOB Accountability Pressure

<table>
<thead>
<tr>
<th>Categorical Manipulation Check</th>
<th>PCAOB Accountability Pressure</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low (n = 18)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number responded correctly</td>
<td></td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Percentage responded correctly</td>
<td></td>
<td>66.67%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High (n = 22)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number responded correctly</td>
<td></td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Percentage responded correctly</td>
<td></td>
<td>100.00%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scale Manipulation Check</th>
<th>PCAOB Accountability Pressure</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (n = 18)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (standard deviation)a</td>
<td>3.94 (2.04)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High (n = 22)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>df</td>
<td>38</td>
<td>38</td>
<td>3.281</td>
</tr>
<tr>
<td>t-statistic</td>
<td></td>
<td></td>
<td>0.00</td>
</tr>
<tr>
<td>Two-tailed p-value</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(a\) A higher mean score indicates more awareness that work performed could be reviewed by the PCAOB
Overview of Data Collected

In this section, I provide an overview of the information search data collected and I discuss the correlation analysis, which I perform to obtain preliminary results about the directionality of the hypothesized relationships between the study variables.

*Graphical Examination of Information Search Data*

During the second phase of the experimental instrument, I collect data associated with participants’ information search behavior. Specifically, I examine participants’ information search type (decision-focused or information-focused) and depth (deep or shallow). A decision-focused search type is characterized by participants’ preference toward supportive information and is consistent with a confirmation-biased search. An information-focused search type is characterized by participants’ preference toward seeking a variety of information. Participants engaged in an information-focused search show no preference for supportive or detracting information. Deep information searches occur when participants spend more time or examine more items whereas a shallow search occurs when participants spend less time or examine fewer items.

To gain an overall understanding of the participants search behavior, I graphically examined the following for the client preference conditions: (1) The proportion of time participants spent viewing items within each evidence category and (2) Time spent per item viewed by category. Figure 7 Panel A presents a pie-chart depicting the proportion of time spent reviewing items by category. Panel B presents a pie-chart depicting the mean amount of time expended per item within each category. Review of the pie-charts in Figure 7 Panel A and B suggests that knowledge of the client’s preference results in differences in auditors’ information search behavior. For example, auditors in the known client preference condition spent a greater
percentage of time examining company-specific and competitor information than auditors in the unknown client preference condition. However auditors in the known condition spent less time reviewing software revenue recognition and multiple-element arrangements’ guidance than auditors in the unknown condition. Recall that the client preference was communicated to participants in the Sales Contract Facts, which is classified as Company Information. Further, review of Panel B, mean amount of time spent per item viewed within category, reveals that participants in the client preference unknown condition spent less time per item in the software revenue recognition category (0.0120 seconds) than those in the client preference known condition (0.0268 seconds).
Figure 7 Panel A

Proportion of Time Spent by Category

Client Preference Unknown

- Competitors' Accounting Policies: 9%
- Topical Menus: 9%
- Software: 22%
- Multiple-Element: 29%
- Company Information: 19%
- Overall Revenue: 3%
- Production-Type Contracts: 7%
- Other Information: 2%

Client Preference Known

- Competitors' Accounting Policies: 11%
- Production-Type Contracts: 5%
- Overall Revenue: 4%
- Company Information: 27%
- Multiple-Element: 24%
- Software: 17%
- Topical Menus: 7%
- Other Information: 5%
Figure 7 Panel B
Time Spent Per Item Viewed Within Category

Client Preference Unknown

- Software, 0.0120
- Multiple-Element, 0.0147
- Company Information, 0.0172
- Overall Revenue, 0.0167
- Production-Type Contracts, 0.0336
- Competitors' Accounting Policies, 0.0252

Client Preference Known

- Software, 0.0268
- Multiple-Element, 0.0177
- Overall Revenue, 0.0263
- Production-Type Contracts, 0.0263
- Company Information, 0.0172
- Other Information, 0.0226
- Competitors' Accounting Policies, 0.0263
- Overall Revenue, 0.0141
- Compar Information, 0.0128
To gain an understanding of participants’ information search depth, I graphically examined the number of items viewed and the amount of time spent engaged in search for each of my experimental conditions. Figure 8 presents my graphical analysis, which reveals that participants in the Low PCAOB accountability pressure condition spent more time (774.94 seconds) and reviewed more items (10.28 items) than those in the High PCAOB accountability pressure condition (749.60 seconds and 9.42 items respectively). This suggests that participants in the low PCAOB Accountability Pressure condition engaged in a deeper search than those in the high PCAOB Accountability Pressure condition. This is contrary to the hypothesized relationship. I further explore this relationship in the correlation analysis and hypotheses testing section.

Figure 8
Graphical examination of Information Search Depth by PCAOB Accountability Pressure Condition

PCAOB Accountability Conditions
Prior to examining each hypothesis, I first perform correlation analysis on the independent, dependent, and covariate variables obtained from the experimental instrument. The correlation analysis, which is presented in Table 3, is to provide an initial feel for how the variables of interest correspond to the theoretical predictions of each hypothesis.

Client preference is significantly correlated with one measure of information search type, TPSI, which is consistent with H1 and suggests a relationship between knowledge of the client preference and search type such that auditors with knowledge of the client preference spend more time per software revenue recognition item viewed during search. Client preference is positively correlated with the RANK measure of search type, however the correlation is not significant at $p = .10$. Client preference is negatively correlated with the CONSIST measure of search type; however this correlation is also insignificant. I further explore these relationships in the subsequent hypotheses testing section. I also note that client preference is significantly correlated with participant gender, however as gender is not significantly correlated with any of my dependent measures of interest this correlation should not impact my statistical results.

Contrary to H3, PCAOB accountability pressure is not significantly correlated with either measure of search depth, DURATION or ITEMS. Review of the correlation table reveals that PCAOB accountability pressure is not significantly correlated with any of the study variables. I further examine the relationship between PCAOB accountability pressure and search depth in the subsequent hypotheses testing section.

With respect to measures of information search type, review of the correlation table reveals that RANK is positively and significantly correlated with CONSIST, and TPSI. I expect these measures to be significantly correlated as they are conceptually capturing different aspects
of the information search type construct. Further, the information search type measures are not significantly correlated with measures of information search depth (DURATION or ITEMS), which suggests that RANK, CONSIST, and TPSI capture different aspects of auditors’ information search behavior than DURATION and ITEMS. RANK and CONSIST are negatively and significantly correlated with CONF, which is a self-reported measure of participants’ confidence in their conclusion regarding the appropriate accounting policy for the sales contract, which suggests that less confident auditors engage in a more decision-focused search and more confident auditors engage in an information-focused search. I also note that CONF is positively and significantly correlated with QUAL_SCORE, which suggests that as auditors’ confidence increases so does their documentation quality. As such, I include CONF as a covariate in statistical examination of the relationship between information search type and documentation quality (H2).

With respect to measures of information search depth, DURATION and ITEMS are positively and significantly correlated. I expect these measures to be significantly correlated as they are conceptually capturing different aspects of the same information search depth construct. Further DURATION and ITEMS are negatively correlated with KNOWLEDGE, which is consistent with prior literature and suggests that individuals with higher relevant knowledge spend less time and review fewer items than those with lower relevant knowledge (Cloyd 1995). As such, I include KNOWLEDGE as a covariate in my statistical analysis of H3. I note CONF is negatively and significantly correlated with DURATION, which suggests that auditors less confident in their conclusion engage in a deeper search\textsuperscript{16}. Review of the correlation table reveals a negative significant correlation between DURATION and ITEMS and DOC_TIME, which

\textsuperscript{16} Despite the fact that CONF is significantly correlated with DURATION it does not change statistical results of H3.
suggests that auditors with a greater search depth spend less time engaged in documentation. I explore the relationship between search depth and documentation quality in the discussion of H4 in the subsequent hypotheses testing section. I further consider the relationship between search depth and documentation quality while controlling for documentation time in subsequent analyses. Finally, there is a negative significant correlation between DURATION and ENOUGH, which is a dichotomous variable where 1 = participants indicated they had enough time to complete the task and 0 otherwise. As such, I include ENOUGH as a variable of interested in supplemental analyses of H4.

The measure of documentation quality, QUAL_SCORE, is negatively and significantly correlated with RANK, CONSIST, and TSPI, which suggests a relationship between information search type and documentation quality and is consistent with H2. I further explore this relationship in the hypotheses testing section presented later. In addition, DURATION and ITEMS have a negative correlation with QUAL_SCORE, which suggests that as auditors engage in a deeper search their documentation quality diminishes. This is contrary to H4. CONF is also positively and significantly correlated with QUAL_SCORE, which suggests that auditors with higher confidence in their conclusion have higher documentation quality. As such, I include CONF as a covariate in statistical analyses of documentation quality. Review of the correlation table also reveals that DOC_TIME is positively correlated with QUAL_SCORE, which suggests that more time spent documenting is associated with the quality of documentation. As such, I include DOC_TIME in supplemental analyses for H4.

Several demographic variables are included in the correlation analysis and a significant correlation exists between AGE and EXP_MON. This relation is reasonable as older participants
are likely to have more experience than younger ones. ITEMS, but not significantly correlated
with measures of documentation quality.
<table>
<thead>
<tr>
<th></th>
<th>PC</th>
<th>PCAOB</th>
<th>RANK</th>
<th>CONSIST</th>
<th>TPSI</th>
<th>DURATION</th>
<th>ITEMS</th>
<th>DOC SCORE</th>
<th>DOC TIME</th>
<th>KNO W</th>
<th>CON F</th>
<th>GEN</th>
<th>AGE</th>
<th>EXP MONs</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCAOB</td>
<td>0.293</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RANK</td>
<td>0.102</td>
<td>0.073</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONSIST</td>
<td>-0.143</td>
<td>0.077</td>
<td>0.633**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPSI</td>
<td>0.396*</td>
<td>0.024</td>
<td>0.389*</td>
<td>-0.087</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DURATION</td>
<td>-0.088</td>
<td>-0.096</td>
<td>0.005</td>
<td>0.049</td>
<td>-0.283</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITEMS</td>
<td>0.131</td>
<td>-0.172</td>
<td>0.009</td>
<td>0.108</td>
<td>0.218</td>
<td>0.524**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QUAL SCORE</td>
<td>-0.117</td>
<td>0.083</td>
<td>-0.418**</td>
<td>-0.365*</td>
<td>-0.321*</td>
<td>-0.266&quot;</td>
<td>-0.376**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOC TIME</td>
<td>-0.134</td>
<td>0.000</td>
<td>0.034</td>
<td>0.027</td>
<td>-0.170</td>
<td>-0.458**</td>
<td>-0.450**</td>
<td>0.297&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KNOW</td>
<td>0.167</td>
<td>0.197</td>
<td>0.071</td>
<td>-0.067</td>
<td>0.153</td>
<td>-0.268&quot;</td>
<td>-0.232</td>
<td>-0.034</td>
<td>0.118</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONF</td>
<td>0.013</td>
<td>0.081</td>
<td>-0.451**</td>
<td>-0.364*</td>
<td>-0.083</td>
<td>-0.421*</td>
<td>-0.285</td>
<td>0.428*</td>
<td>0.190</td>
<td>0.378*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEN</td>
<td>-0.348*</td>
<td>0.242</td>
<td>-0.091</td>
<td>0.101</td>
<td>-0.247</td>
<td>0.165</td>
<td>0.070</td>
<td>-0.155</td>
<td>-0.067</td>
<td>0.016</td>
<td>0.218</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGE</td>
<td>-0.029</td>
<td>-0.099</td>
<td>-0.136</td>
<td>-0.181</td>
<td>0.212</td>
<td>-0.162</td>
<td>-0.020</td>
<td>0.030</td>
<td>0.124</td>
<td>-0.065</td>
<td>0.157</td>
<td>-0.175</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXP MONs</td>
<td>0.034</td>
<td>-0.209</td>
<td>-0.158</td>
<td>-0.177</td>
<td>-0.028</td>
<td>0.004</td>
<td>0.048</td>
<td>0.023</td>
<td>0.044</td>
<td>0.103</td>
<td>0.265</td>
<td>-0.087</td>
<td>0.359*</td>
<td></td>
</tr>
<tr>
<td>ENOUGH</td>
<td>0.247</td>
<td>0.257</td>
<td>0.017</td>
<td>0.023</td>
<td>0.114</td>
<td>-0.318*</td>
<td>-0.243</td>
<td>-0.129</td>
<td>-0.015</td>
<td>0.068</td>
<td>0.253</td>
<td>-0.173</td>
<td>0.215</td>
<td>0.091</td>
</tr>
</tbody>
</table>

** indicates significant at 0.01 (two-tailed)
* indicates significant at 0.05 (two-tailed)
# indicates significant at 0.10 (two-tailed)
Legend:

CP: Client Preference (0 = unknown client preference and 1 = known client preference)
PCAOB: PCAOB Accountability Pressure (0 = Low PCAOB Accountability Pressure and 1 = High PCAOB Accountability Pressure)
RANK: Information Search Type (0 = information-focused search and 1 = decision focused search)
CONSIST: Information Search Type (Where -1 indicates information-focused search and a + 1 indicates decision-focused search)
TPSI: Information Search Depth (A higher value indicates more time spent per software revenue item viewed during search)
DURATION: Information Search Depth (A higher value indicates more seconds spent engaged in search)
ITEMS: Information Search Depth (A higher value indicates more items viewed during search)
QUAL_SCORE: Documentation Quality score (A higher value indicates higher quality)
DOC_TIME: Number of seconds spent writing Revenue Recognition Memo
KNOW: Knowledge of Revenue Guidance Score (A higher value indicates higher knowledge of revenue recognition guidance)
CONF: Auditors' self-reported confidence in their conclusion regarding the appropriate accounting method for the sales contract (A higher value indicates higher confidence in their conclusion).
GEN: Gender of participant (0 = male and 1 = female)
AGE: Age of participant
EXP_MO: Number of months of experience in public accounting
ENOUGH: (dichotomous variable where 1 = participant indicated they had enough time to complete the task and 0 otherwise)
Hypotheses Testing

In this section, I provide a detailed discussion of hypothesis testing. I perform hypotheses testing consistent with my research framework, which is presented in Figure 1. I organize my statistical discussion based on the dependent variables of interest. First, I discuss the statistical analyses for Hypothesis 1 and Hypothesis 3 investigating auditors’ information search behaviors and I offer interpretations of the results. Recall that Hypothesis 1 examines the influence of client preference on search type. Hypothesis 3 examines the influence of PCAOB accountability pressure on search depth.

Second, I discuss the statistical analyses for Hypotheses 2, 4 and 5 investigating the relationship between information search behavior and documentation quality. I also offer interpretations of the results. Recall that Hypothesis 2 examines whether search type influences documentation quality. Hypothesis 4 examines whether search depth influences documentation quality. Finally, Hypothesis 5 examines the joint effects of search type and depth on documentation quality.

Information Search Behaviors

Influence of Knowledge of Client Preference on Information Search Type

Hypothesis 1 examines the relationship between auditors’ knowledge of the client’s preferred accounting policy and their information search type. Recall that Hypothesis 1 states:

**H1:** Auditors with knowledge of the client preference engage in a decision-focused information search whereas auditors without knowledge of the client preference engage in an information-focused search.

I manipulate the independent variable of CP (client preference) as unknown vs. known and I operationalize the dependent variable, auditors’ information search type, using three measures: RANK, CONSIST, and TPSI. Recall that the RANK measure emphasizes the order and
magnitude of search the search type, the CONSIST measure emphasizes the difference in the
amount of time spent examining evidence items consistent versus inconsistent with the client’s
preference, and the TPSI measure emphasizes the extent of participants’ consideration of the
client’s preference during their search.

To test Hypothesis 1, I perform MANOVA\(^{17}\) to compare the dependent measures of
RANK, CONSIST, and TPSI between subjects in the client preference conditions (unknown vs.
known). Results of the MANOVA\(^{18}\), which are presented in Table 4 Panel A, indicate a
significant multivariate main effect for information search type (Pillai’s Trace = .170, F (3, 36) =
2.45, p = .040). Given the significance of the overall test, I examine the univariate main effects
of each dependent measure and the cell means, which are presented in Table 4 Panel B.

Review of univariate main effects indicates no significant main effect for RANK or
CONSIST measures of participants’ information search type, however there is a significant main
effect for TPSI. Review of cell means indicate participants in the known client preference
condition spent more time per software revenue item viewed than those in the unknown client
preference condition. As such, H1 is partially supported.

\(^{17}\) Review of existing literature did not reveal covariates in the relationship between client preference and
information search type, however review of the correlation table indicates a significant correlation between gender
and client preference. Therefore, I conduct the analysis while controlling for gender. Results are directionally
consistent and statistically significant at p = 0.10 when I control for gender. Review of the correlation table also
indicates a significant correlation between information search type (RANK and CONSIST) and confidence (CONF).
When the analysis is performed while controlling for confidence the results are consistent with those presented.

\(^{18}\) In connection with MANOVA, I perform Levene’s Test for equality of variances for each dependent variable.
Levene’s test statistics for RANK, CONSIST, DURATION, and ITEMS were insignificant at p <0.05, indicating
equal variances between treatment groups. Levene’s test stastic for TPSI was insignificant at p <0.01. Lindman
(1974) suggests that the F-statistic is robust against violations of this assumption when there are small variances
between the number of observations in each treatment group. As such, no adjustments are necessary for a violated
assumption. I also performed a Box M test for homogeneity of variances and covariances. Results of the Box M
test were insignificant at p <0.01. For H1, I ensure appropriate consideration of the assumption for homogeneity of
variances, I use the Pillai’s trace F-statistic to evaluate the overall MANOVA model as the Pillai’s trace F-statistic is
most robust to violations of the homogeneity of variance and covariance assumptions (Finch 2005).
With respect to the statistical result for the RANK measure, recall that this measure of search type is based on the measure developed by Turner (2001) and emphasizes the magnitude and order of the search. Items viewed at the beginning of the search are given a higher ranking suggesting that these items are of greater importance to the searcher. Review of the RANK cell means in Table 4 Panel B indicates that auditors aware of the client preference performed a slightly more decision-focused search than those unaware of that preference. However, contrary to the conclusions reached by Turner (2001), the difference is not significant suggesting that these auditors did not favor software revenue recognition\(^{19}\) at the beginning of their search.

Differences between my findings and those of Turner (2001) may be due to the source of the preference. Turner (2001) finds that auditors engaged in a biased search toward the reviewer’s preference, whereas this study examines the client’s preference. Confirming a reviewer’s preference imposes less personal risk than confirming a client’s preference. Failure to conform to a reviewer’s preference may result in a loss of personal reputation, which although detrimental to the individual, may be considered less harmful than loss of the firm’s reputation, which could result if an auditor confirmed an incorrect client preference. As such, it is possible that the source of the preference results in distinctive search behaviors.

With respect to the CONSIST measure, recall that this measure emphasizes the amount of time that auditors spent reviewing software revenue recognition (consistent with client preference) items compared to inconsistent items and is based on measures used in tax literature (i.e. Cloyd and Spilker 1999; Kadous et al. 2008). Review of the CONSIST cell means in Table 4 Panel B indicates that auditors with knowledge of the client preference did not spend more

---

\(^{19}\) The client preference stated in the experimental case is to account for the sales contract in accordance with ASC 985-605-25 “Software Revenue Recognition” and has determined that no Vendor Specific Objective Evidence exists for all elements. Therefore XYZ Company will recognize the revenue when all elements of the arrangement have been delivered.
time reviewing software items than auditors without knowledge of the preference.

Differences between my findings and the conclusions based on tax literature may be due to the underlying differences between audit and tax standards, client relationships and accounting tasks. Most importantly, tax standards of conduct and ethics issued by the AICPA highlight tax professionals’ role as a client advocate (AICPA 2009). However PCAOB auditing standards require auditors to maintain independence from their clients and their preferences and avoid client advocacy (AICPA 1988). Therefore it is likely that auditors in the current study spent only a small portion of their search time viewing software revenue recognition (the client’s preferred guidance) in an effort to rule-out that preference. During the remaining period of time, auditors in the current study sought guidance to determine the appropriate method of accounting for the client’s sales contract.

Taken together, my findings may be due to auditors’ inclination to “rule-out” hypotheses. It is possible that auditors in the current study engaged in search behavior with a dual-purpose. They had to both “rule-out” software revenue recognition guidance as the appropriate accounting policy for the sales contract and also determine the appropriate guidance to apply to the sales contract.

To gain insight into whether auditors engaged in “rule-out” behavior regarding the client’s preference, I examine responses to the question “If the client had a preference, to what extent did you agree with that preference before you started your search, which was measured on a seven-point Likert scale where 0 = strongly disagree and 7 = agree”. The mean response for auditors with knowledge of the client preference was 3.18 (SD = 1.47), which suggests that auditors disagreed with the client’s preference that software revenue recognition was appropriate for the

---

20 This question was included in Phase 3 of the experimental study and was presented after auditors completed the revenue recognition memo and formed their final conclusions.
sales contract. In addition, review of search behavior indicates no difference between auditors with knowledge of the client preference and those without knowledge of the client preference in the number of software revenue recognition items viewed (p = 0.585 two-tailed) nor was there a difference in the amount of time spent reviewing software revenue recognition guidance (p = 0.280 two tailed). Taken together, this suggests that auditors with knowledge of the client preference were selective in their choice of software revenue recognition guidance to review.

Specifically, when auditors review software revenue recognition guidance they select only those items that will provide them with the necessary information to “rule out” software revenue recognition as the acceptable method. Therefore, these auditors spend more time per software revenue recognition item reviewed because they are carefully reading the item to ensure that it is not appropriate for use. These auditors do not need to review all available guidance related to software revenue recognition because they have “ruled it out” as the appropriate method. Instead, these auditors must use the available guidance to determine the appropriate method. Review of Figure 7 Panel A provides evidence that auditors with knowledge of the client preference spent a greater proportion of time reviewing multiple-element arrangements guidance than software revenue recognition guidance.
### Table 4

Test Results for H1  
(Independent Variable - Client Preference)

**PANEL A: MANOVA & ANOVA**

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>F</th>
<th>One-tailed p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>2.45</td>
<td>0.040</td>
</tr>
<tr>
<td>RANK</td>
<td>0.402</td>
<td>0.265</td>
</tr>
<tr>
<td>CONSIST</td>
<td>0.792</td>
<td>0.190</td>
</tr>
<tr>
<td>TPSI</td>
<td>7.070</td>
<td>0.006</td>
</tr>
</tbody>
</table>

**PANEL B: MEANS (SD)**

<table>
<thead>
<tr>
<th>Client Preference</th>
<th>Unknown</th>
<th>Known</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 22</td>
<td>n = 18</td>
</tr>
<tr>
<td>RANK</td>
<td>0.214 (0.141)</td>
<td>0.243 (0.141)</td>
</tr>
<tr>
<td></td>
<td>t = -0.634</td>
<td></td>
</tr>
<tr>
<td>CONSIST</td>
<td>-0.544 (0.321)</td>
<td>-0.634 (0.234)</td>
</tr>
<tr>
<td></td>
<td>t = 0.890</td>
<td></td>
</tr>
<tr>
<td>TPSI</td>
<td>0.013 (0.010)</td>
<td>0.026 (0.019)</td>
</tr>
<tr>
<td></td>
<td>t = -2.659**</td>
<td></td>
</tr>
</tbody>
</table>

**Legend:**
- RANK: (0 = information focus & 1 = decision focus)
- CONSIST: (-1 = information focus & 1 = decision focus)
- TPSI: (higher amount indicates greater consideration of client's preference)
- ** indicates significant at 0.01 (one-tailed)
Influence of Accountability Pressure on Information Search Depth

Hypothesis 3 examines the influence of PCAOB accountability pressure on information search depth. Recall that Hypothesis 3 states:

**H3**: Auditors experiencing PCAOB accountability pressure engage in a deeper information search than auditors who do not experience PCAOB accountability pressure. I manipulate the independent variable of PCAOB accountability pressure (low vs. high) and I operationalize depth of information search using two measures, DURATION, which is the number of seconds participants engaged in search, and ITEMS, which is the number of items viewed during search. I expect that auditors experiencing PCAOB accountability pressure spend more time and view more evidence items than those not experiencing PCAOB accountability pressure.

To test Hypothesis 3 I performed MANCOVA using two measures of information search depth as dependent variables while controlling for the effects of participants’ relevant knowledge. MANCOVA is used to test Hypothesis 3 to control for the influence of individuals’ relevant knowledge. Prior literature suggests that relevant knowledge influences individuals’ search behavior (Cloyd 1995). Individuals with higher relevant knowledge may engage in shallower searches because they can draw upon their existing knowledge to a greater extent than those with lower knowledge bases. Table 5 Panel A presents the results of the MANCOVA and indicate no significant relation between PCAOB accountability pressure and information search depth after controlling for participants’ relevant knowledge (Wilks lambda = .982, F (2, 36) = .331, p = .361). H3 is not supported.

Results indicate that PCAOB accountability pressure does not influence auditors’ information search depth even when I control for auditors’ knowledge of revenue recognition,
which ultimately suggests no difference in cognitive effort (as evidence by a deeper search) between auditors anticipating a PCAOB review and those not expecting a PCAOB review. This finding may be due to auditors’ perception of accountability pressure from the PCAOB. Accountability that is perceived as intrusive and insulting may have an adverse effect on individuals’ cognitive effort (Lerner and Tetlock 1999). Auditors may perceive the PCAOB inspection process to be intrusive and therefore the inspection process fails to stimulate increases in auditors’ cognitive effort during the search process.

To gain insight into whether PCAOB accountability pressure increased auditors’ cognitive effort, I compared the responses to the question “How much mental effort did you expend performing the task?” between PCAOB accountability pressure conditions. I found no difference in mental effort exerted between PCAOB accountability pressure conditions (p = 0.761 two-tailed). This indicates no difference between PCAOB accountability pressure conditions regarding the amount of cognitive effort expended while engaged in the study.

Psychology literature finds that accountability in the form of performance monitoring inhibits individuals’ intrinsic motivation to perform a task when the monitor suggests a lack of trust (Enzle and Anderson 1993). As it relates to the PCAOB inspection process, auditors may view the inspection process as an indication of lack of trust for their work performed, therefore PCAOB accountability pressure may ultimately decrease auditors’ motivation to perform well during a task. To gain insight into whether this study’s auditors’ motivation was influence by PCAOB accountability pressure I examined responses to the question “How motivated were you to perform well on this task?”, which was measured on a seven-point Likert scale where 0 = not at all motivated and 7 = extremely motivated. Participants in the high PCAOB accountability pressure condition indicated a lower motivation to perform well (mean = 4.82, standard deviation
= 1.37) than those in the low PCAOB accountability pressure condition (mean = 5.39, standard deviation = 1.04). The difference is significant at p = .10 (p = 0.07 one-tailed) and suggests that auditors in the high PCAOB accountability condition may not have engaged in higher cognitive processing as evidence by a depth of search due to lack of motivation to perform well during the task.
Table 5
Test Results for H3
(Independent Variable - PCAOB Accountability Pressure)

PANEL A: MANCOVA
(controlling for the effects of relevant knowledge)

<table>
<thead>
<tr>
<th>Variables</th>
<th>F</th>
<th>One-tailed p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCAOB</td>
<td>0.331</td>
<td>0.361</td>
</tr>
<tr>
<td>KNOW</td>
<td>1.407</td>
<td>0.129</td>
</tr>
</tbody>
</table>

PANEL B: MEANS (SD)

<table>
<thead>
<tr>
<th>PCAOB Accountability Pressure</th>
<th>Low</th>
<th>High</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 18</td>
<td>n = 22</td>
<td></td>
</tr>
<tr>
<td>DURATION</td>
<td>774.9 (393.11)</td>
<td>705.03 (348.39)</td>
<td>0.543</td>
</tr>
<tr>
<td>ITEMS</td>
<td>10.3 (3.46)</td>
<td>9.0 (3.94)</td>
<td>-0.816</td>
</tr>
</tbody>
</table>

Legend:

DURATION: Number of seconds engaged in search. A lower amount indicates shallow search.

ITEMS: Number of guidance items viewed during search. A lower amount indicates shallow search.
In this section, I discuss the statistical analyses of hypotheses two, four and five, which examine the relation between search type and depth and documentation quality.

Influence of Information Search Type on Documentation Quality

Hypothesis 2 examines the relationship between information search type and documentation quality. Recall that Hypothesis 2 states:

**H2:** Auditors engaged in a more information-focused search have higher documentation quality than those engaged in a more decision-focused search.

The independent variable is information search type and I use the three measures of search type (RANK, CONSIST, and TPSI) that were previously employed as the dependent variable measures in H1. I operationalize documentation quality using QUAL_SCORE. To test H2, I regress each measure of search type on QUAL_SCORE while controlling for participants’ confidence (CONF). Review of the correlation table, Table 3, reveals that CONF is significantly correlated with the RANK and CONSIST measures of information search type and QUAL_SCORE. Therefore, I control for CONF in the relationship between search type and documentation quality. I use three separate regressions to address the multicollinearity between the variables RANK, CONSIST, and TPSI.

Results of regression analysis are presented in Table 6 and indicate each measure of information search type is significantly related to QUAL_SCORE after controlling for CONF. Further review of the regression Beta coefficient suggests a negative relationship between search type and documentation quality; as such as auditors’ perform a more information-focused search their documentation quality increases. H2 is supported.

---

21 Results do not change from those reported when the regression is performed without controlling for confidence. Further, results do not change qualitatively from those reported when the regression is performed while controlling for confidence and knowledge.
Results indicate that auditors engaged in a more information-focused search have higher documentation quality than those engaged in a more decision-focused search. This suggests that the type of guidance viewed influences the nature and extent of auditors’ documentation quality and ultimately their documentation quality.
Table 6  
Test results for H2

Individual Regression Analyses  
Dependent Variable: QUAL_SCORE

<table>
<thead>
<tr>
<th></th>
<th>RANK</th>
<th>CONSIST</th>
<th>TPSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>n = 40</td>
<td>Std. Beta</td>
<td>One-tailed p-value</td>
<td>Std. Beta</td>
</tr>
<tr>
<td>Intercept</td>
<td>3.74</td>
<td>0.00</td>
<td>2.4</td>
</tr>
<tr>
<td>RANK</td>
<td>-0.32</td>
<td>-2.02</td>
<td>-0.26</td>
</tr>
<tr>
<td>CONSIST</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPSI</td>
<td></td>
<td>-0.28</td>
<td>-1.98</td>
</tr>
<tr>
<td>CONF</td>
<td>0.28</td>
<td>1.76</td>
<td>0.33</td>
</tr>
<tr>
<td>R^2</td>
<td>0.27</td>
<td></td>
<td>0.49</td>
</tr>
</tbody>
</table>

Legend:
QUAL_SCORE: (0 = lowest possible quality and 16 = highest possible quality)
RANK: (0 = information focus & 1 = decision focus)
CONSIST: (-1 = information focus & 1 = decision focus)
TPSI: (lower value indicates information-focus search and higher value indicates decision-focus search)
CONF: (lower value indicates lower confidence in conclusion and higher value indicates higher confidence in conclusion)
Influence of Information Search Depth on Documentation Quality

Hypothesis 4 examines the relationship between depth of search and documentation quality. Specifically, Hypothesis 4 states:

**H4:** Information search depth is related to documentation quality, such that auditors engaged in a deeper search have higher documentation quality than those engaged in a shallow information search.

The independent variable for H4 is information search depth and I use the two measures of search depth (DURATION and ITEMS) previously employed as dependent variables in H3. QUAL_SCORE is the measure of documentation quality. To test H4 I perform regression analysis on each measure of search depth (DURATION and ITEMS) on QUAL_SCORE while controlling for CONF. Recall that the correlation analysis revealed a negative correlation between CONF and DURATION, therefore I control for CONF in statistical analysis. I perform separate regression analyses due to the effects of multicollinearity between the independent variables.

Results of regression analysis, which are presented in Table 7 Panel A, indicate a negative significant relationship between search depth and documentation quality only for the ITEMS measure (p = 0.035 one-tailed) when controlling for CONF\(^{22}\). DURATION is not a significant predictor of documentation quality when controlling for CONF (p = 0.238 one-tailed).

To further understand the relationship between search depth and documentation quality, I bifurcated each measure of search depth using a median split. Observations at or below the median value for DURATION and ITEMS are defined as a shallow search whereas those above the median are defined as a deep search. Results of the median split, which are presented in

---

\(^{22}\) Results do not change from those reported when the regression is performed without controlling for confidence.
Table 7 Panel B, confirm a negative relationship between depth and documentation quality. As such, H4 is not supported.

The unexpected direction of this finding could indicate that auditors who searched less engaged in a more efficient cognitive processing strategy during their search, which allowed them to expend more effort during the documentation phase. Ultimately, these results suggest a trade-off of auditors’ efforts. Auditors perform their typical activities under a time constraint; although a time constraint was not emphasized during my study, participants may have been aware of their own personal productivity limit. Therefore they engage in a shallower search in order to expend more effort on documentation.
### Table 7
Test results for H4

**PANEL A:** Individual Regressions
Dependent Variable: DOC_SCORE

<table>
<thead>
<tr>
<th></th>
<th>DURATION</th>
<th></th>
<th></th>
<th>ITEMS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Std. Beta t-stat</td>
<td>One-tailed p-value</td>
<td>Std. Beta t-stat</td>
<td>One-tailed p-value</td>
</tr>
<tr>
<td>Intercept</td>
<td></td>
<td>2.593 0.007</td>
<td></td>
<td>3.592 0.001</td>
<td></td>
</tr>
<tr>
<td>DURATION ITEMS</td>
<td></td>
<td>-0.119 -0.721</td>
<td>0.238</td>
<td>-0.277 -1.866</td>
<td>0.035</td>
</tr>
<tr>
<td>CONF</td>
<td></td>
<td>0.378 2.289</td>
<td>0.014</td>
<td>0.348 2.347</td>
<td>0.012</td>
</tr>
<tr>
<td>R2</td>
<td></td>
<td></td>
<td>0.195</td>
<td></td>
<td>0.253</td>
</tr>
</tbody>
</table>

**PANEL B:** DOC_SCORE Cell Means

<table>
<thead>
<tr>
<th></th>
<th>Shallow Search</th>
<th>Deep Search</th>
<th>M_DURATION</th>
<th>M_ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Median split of DURATION variable. Observations at or below median value are defined as shallow search and observations above the median are defined as deep search.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Median split of ITEMS variable. Observations at or below median value are defined as shallow search and observations above the median are defined as deep search.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Legend:**

- **DOC_SCORE:** (0 = lowest possible quality and 16 = highest possible quality)
- **DURATION:** (Number of seconds engaged in search, a lower value indicates shallow search and a higher value indicates deeper search)
- **ITEMS:** (Number of guidance items viewed, a lower value indicates a shallow search and a higher value indicates a deeper search)
- **CONF:** Self-reported confidence in conclusion. A higher value indicates higher confidence.

**t = 1.319**

**t = 2.671**

**significant at p = 0.01**
Interaction of Information Search Type and Depth on Documentation Quality

Finally, Hypothesis 5 examines the interactive effects of search type and depth on documentation quality. Specifically, Hypothesis 5 is stated as follows:

**H5:** Information search type and depth interact, such that

A) when auditors initially engage in a decision-focus search there is greater difference in documentation quality between auditors engaged in a deep search and those engaged in a shallow search and

B) when auditors initially engage in an information-focused search there is less difference in documentation quality between auditors engaged in a deep search and those engaged in a shallow search.

The independent variables for H5 are information search type (RANK, CONSIST, TPSI) and information search depth (DURATION and ITEMS) and their interaction. The dependent variable is QUAL_SCORE.

To determine the interactive relationship between search type and depth on documentation quality I perform several regression analyses. I regress each measure of information search type (RANK, CONSIST, TPSI) and each measure of search depth (DURATION and ITEMS) and their interaction on QUAL_SCORE while I control for CONF. Results of regression are presented in Table 8 and indicate significant relation between search depth, type and the interaction on documentation quality for certain measures.

To further explore the relationship, I bifurcate the RANK measure of search type and the DURATION measure of search depth using a median split. Observations at or below the median value for RANK are defined as information-focused searches and those above the median value are defined as decision-focused searches. With respect to information search depth, observations at or below the median value for DURATION indicate a shallow search whereas those above the median value indicate a deeper search. I expect the mean QUAL_SCORE values
to be higher for the deep search category. In addition, I expect the mean QUAL_SCORE values for the shallow but decision-focused search categories to be the lowest and the shallow and information-focused search category to lie between the two extremes. Table 9 and Figure 7 depict cell means as a result of the median split. As predicted documentation quality is lowest for auditors engaged in a shallow and decision-focused search. Further auditors engaged in a decision-focused but deep search have a higher documentation quality than those auditors engaged in a decision-focused but shallow search. Auditors engaged in an information-focused search but shallow search have the highest documentation quality, which is contrary to the hypothesized relationship. H5 is partially supported.

These findings suggest that both the type and depth of search are important in predicting documentation quality. Specifically, auditors who engage in a shallow search must conduct a broad search and seek a variety of information to achieve high documentation quality but when they engage in a deep search, the type of search is less reflective of the quality of the outcome. Ultimately, to achieve the highest quality documentation, auditors should engage in an information-focused but shallow search.
<table>
<thead>
<tr>
<th></th>
<th>RANK x DURATION</th>
<th>CONSIST x DURATION</th>
<th>TPSI x DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n = 40</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>5.325</td>
<td>0.677</td>
<td>3.381</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td>0.252</td>
<td>0.001</td>
</tr>
<tr>
<td>RANK</td>
<td>-1.22</td>
<td>-0.796</td>
<td>-0.630</td>
</tr>
<tr>
<td></td>
<td>-4.393</td>
<td>-2.245</td>
<td>-1.643</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td>0.016</td>
<td>0.055</td>
</tr>
<tr>
<td>CONSIST</td>
<td>-0.796</td>
<td>0.430</td>
<td>-0.424</td>
</tr>
<tr>
<td></td>
<td>-2.245</td>
<td>1.153</td>
<td>-1.474</td>
</tr>
<tr>
<td></td>
<td>0.016</td>
<td>0.129</td>
<td>0.075</td>
</tr>
<tr>
<td>TPSI</td>
<td>-0.796</td>
<td>0.803</td>
<td>0.284</td>
</tr>
<tr>
<td></td>
<td>-2.245</td>
<td>1.677</td>
<td>0.747</td>
</tr>
<tr>
<td></td>
<td>0.016</td>
<td>0.052</td>
<td>0.230</td>
</tr>
<tr>
<td>DURATION</td>
<td>-1.122</td>
<td>0.430</td>
<td>-0.265</td>
</tr>
<tr>
<td></td>
<td>-3.903</td>
<td>1.295</td>
<td>1.634</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td>0.102</td>
<td>0.056</td>
</tr>
<tr>
<td>RANK*DURATION</td>
<td>1.423</td>
<td>0.803</td>
<td>0.824</td>
</tr>
<tr>
<td></td>
<td>3.72</td>
<td>1.677</td>
<td>0.747</td>
</tr>
<tr>
<td></td>
<td>0.001</td>
<td>0.052</td>
<td>0.230</td>
</tr>
<tr>
<td>CONSIST*DURATION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPSI*DURATION</td>
<td>-0.796</td>
<td>0.430</td>
<td>-0.265</td>
</tr>
<tr>
<td></td>
<td>-2.245</td>
<td>1.295</td>
<td>1.634</td>
</tr>
<tr>
<td></td>
<td>0.016</td>
<td>0.102</td>
<td>0.056</td>
</tr>
<tr>
<td>CONF</td>
<td>0.167</td>
<td>0.221</td>
<td>0.265</td>
</tr>
<tr>
<td></td>
<td>1.087</td>
<td>1.295</td>
<td>1.634</td>
</tr>
<tr>
<td></td>
<td>0.1425</td>
<td>0.102</td>
<td>0.056</td>
</tr>
<tr>
<td><strong>R²</strong></td>
<td>0.479</td>
<td>0.305</td>
<td>0.319</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>RANK x ITEMS</th>
<th>CONSIST x ITEMS</th>
<th>TPSI x ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n = 40</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>3.538</td>
<td>0.637</td>
<td>3.092</td>
</tr>
<tr>
<td></td>
<td>0.001</td>
<td>0.264</td>
<td>0.002</td>
</tr>
<tr>
<td>RANK</td>
<td>-0.326</td>
<td>-0.838</td>
<td>-0.393</td>
</tr>
<tr>
<td></td>
<td>-0.818</td>
<td>-1.952</td>
<td>-0.874</td>
</tr>
<tr>
<td></td>
<td>0.210</td>
<td>0.030</td>
<td>0.194</td>
</tr>
<tr>
<td>CONSIST</td>
<td>-0.314</td>
<td>-0.838</td>
<td>-0.393</td>
</tr>
<tr>
<td></td>
<td>-0.999</td>
<td>-1.952</td>
<td>-0.874</td>
</tr>
<tr>
<td></td>
<td>0.163</td>
<td>0.030</td>
<td>0.194</td>
</tr>
<tr>
<td>TPSI</td>
<td>-0.314</td>
<td>0.275</td>
<td>-0.300</td>
</tr>
<tr>
<td></td>
<td>-0.999</td>
<td>0.691</td>
<td>-1.153</td>
</tr>
<tr>
<td></td>
<td>0.163</td>
<td>0.247</td>
<td>0.129</td>
</tr>
<tr>
<td>ITEMS</td>
<td>-0.314</td>
<td>0.275</td>
<td>-0.300</td>
</tr>
<tr>
<td></td>
<td>-0.999</td>
<td>0.691</td>
<td>-1.153</td>
</tr>
<tr>
<td></td>
<td>0.163</td>
<td>0.247</td>
<td>0.129</td>
</tr>
<tr>
<td>RANK*ITEMS</td>
<td>-0.314</td>
<td>0.275</td>
<td>-0.300</td>
</tr>
<tr>
<td></td>
<td>-0.999</td>
<td>0.691</td>
<td>-1.153</td>
</tr>
<tr>
<td></td>
<td>0.163</td>
<td>0.247</td>
<td>0.129</td>
</tr>
<tr>
<td>CONSIST*ITEMS</td>
<td>-0.314</td>
<td>0.275</td>
<td>-0.300</td>
</tr>
<tr>
<td></td>
<td>-0.999</td>
<td>0.691</td>
<td>-1.153</td>
</tr>
<tr>
<td></td>
<td>0.163</td>
<td>0.247</td>
<td>0.129</td>
</tr>
<tr>
<td>TPSI*ITEMS</td>
<td>-0.314</td>
<td>0.275</td>
<td>-0.300</td>
</tr>
<tr>
<td></td>
<td>-0.999</td>
<td>0.691</td>
<td>-1.153</td>
</tr>
<tr>
<td></td>
<td>0.163</td>
<td>0.247</td>
<td>0.129</td>
</tr>
<tr>
<td>CONF</td>
<td>0.191</td>
<td>0.246</td>
<td>0.332</td>
</tr>
<tr>
<td></td>
<td>1.189</td>
<td>1.615</td>
<td>2.230</td>
</tr>
<tr>
<td></td>
<td>0.121</td>
<td>0.058</td>
<td>0.016</td>
</tr>
<tr>
<td><strong>R²</strong></td>
<td>0.340</td>
<td>0.344</td>
<td>0.311</td>
</tr>
</tbody>
</table>

**Legend:**
- RANK: (0 = information focus & 1 = decision focus)
- CONSIST: (-1 = information focus & 1 = decision focus)
- TPSI: (lower value indicates information-focus search and higher value indicates decision-focus search)
DURATION: (Number of seconds engaged in search, a lower value indicates shallow search and a higher value indicates deeper search)
ITEMS: (Number of guidance items viewed, a lower value indicates a shallow search and a higher value indicates a deeper search)
CONF: Self-reported confidence in conclusion. A higher value indicates higher confidence.

<table>
<thead>
<tr>
<th>DURATION</th>
<th>Information-Focus</th>
<th>Decision-Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DOC_SCORE</td>
<td>Std Dev</td>
</tr>
<tr>
<td>----------</td>
<td>-----------</td>
<td>---------</td>
</tr>
<tr>
<td>Shallow Search</td>
<td>10.45 (2.34)</td>
<td>5.89 (2.76)</td>
</tr>
<tr>
<td></td>
<td>n = 11</td>
<td>n = 9</td>
</tr>
<tr>
<td>Deep Search</td>
<td>7.22 (3.07)</td>
<td>7.09 (2.17)</td>
</tr>
<tr>
<td></td>
<td>n = 9</td>
<td>n = 11</td>
</tr>
<tr>
<td></td>
<td>9.00 (3.09)</td>
<td>6.55 (2.46)</td>
</tr>
<tr>
<td></td>
<td>n = 20</td>
<td>n = 20</td>
</tr>
</tbody>
</table>

A higher value of DOC_SCORE indicates higher documentation quality
** indicates significant at 0.01 (one-tailed)
Supplemental Analyses

In this section I discuss analyses in addition to the hypotheses testing consistent with the research framework presented in Figure 1. First, I provide additional analysis of auditors’ information search behavior. Specifically, I examine whether PCAOB accountability pressure influences information search type and whether client preference and PCAOB accountability pressure jointly influence search type. I also examine whether client preference influences information search depth and whether client preference and PCAOB accountability pressure interact to influence information search depth.

Second, I provide further analysis of documentation quality. I provide an analysis of the direct effects of client preference, PCAOB accountability and their interaction on documentation quality. I discuss mediation analysis for information search type as a mediating variable between
client preference and documentation quality following Baron and Kenny’s (1986) criteria for mediation\textsuperscript{23}. I also discuss several robustness tests associated with H4, the relationship between search depth and documentation quality.

\textit{Information Search Behaviors}

Information Search Type

While not hypothesized, it is possible that PCAOB accountability pressure influences auditors’ information search type. To examine this possible relationship I perform MANOVA to compare the dependent measures of RANK, CONSIST, and TPSI between subjects in the PCAOB accountability pressure conditions (low vs. high). Results of the MANOVA indicate no significant relationship between PCAOB accountability pressure and information search type (Wilks lambda = 0.991, F (3,36) = 0.087, p = 0.967 two-tailed)\textsuperscript{17}. This suggests that PCAOB accountability pressure does not influence the type of search in which auditors engage while evaluating a client’s preferred accounting policy.

Further, H1 indicates a main effect of client preference on search type, however I also consider whether client preference interacts with PCAOB accountability pressure to influence search type. To examine an interactive relationship, I perform MANOVA using the dependent measures RANK, CONSIST, and TPSI the independent measures client preference, PCAOB accountability pressure and their interaction. Results indicate no significant relationship between the interaction of client preference and PCAOB accountability pressure and information search depth (Wilks lambda = 0.927, F (2, 34) = 0.898, p = 0.452 two-tailed).

\textsuperscript{23} I do not conduct a mediation test for information search depth as a mediating variable between PCAOB Accountability Pressure and Documentation Quality because Baron and Kenny’s (1986) first step of mediation analysis is to identify a significant relationship between the independent variable and the mediating variable. As the results of H3 suggest that there is no relationship between PCAOB Accountability Pressure and Information Search Depth then search depth cannot be a mediating variable between PCAOB Accountability Pressure and Documentation Quality.
Information Search Depth

Although not hypothesized, it is possible that there is a client preference effect on information search depth. To examine this possible relationship I perform MANOVA to compare the dependent measures of DURATION and ITEMS between subjects in the client preference conditions (unknown vs. known). Results of the MANOVA indicate no significant relation between knowledge of client preference and information search depth (Wilks lambda = 0.945, F (2, 37) = 0.994, p = 0.380 two-tailed)\(^{24}\). This suggests that knowledge of the client preference does not have a significant influence on the depth of auditors’ information search.

In addition, I examine the interaction of client preference and PCAOB accountability pressure on information search depth. I perform MANOVA using the dependent measures DURATION and ITEMS and the independent measures client preference, PCAOB accountability pressure and their interaction. Results of the MANOVA indicate no significant relationship between the interaction of client preference and PCAOB accountability pressure and information search depth (Wilks lambda = 0.905, F (2, 35) = 1.835, p = 0.175 two-tailed)\(^{17}\).

Documentation Quality

In this section I first discuss an analysis of the direct effects of client preference, PCAOB accountability and their interaction on documentation quality. Second, I discuss mediation analysis for information search type as a mediating variable between client preference and documentation quality following Baron and Kenny’s (1986) criteria for mediation. Finally, I discuss several robustness tests associated with H4, the relationship between search depth and documentation quality.

\(^{24}\) I also perform this analysis controlling for auditor subjects’ relevant knowledge. The results are consistent with those discussed.
Direct Effects of Client Preference and PCAOB Accountability Pressure on Documentation quality

While not hypothesized, knowledge of the client preference, PCAOB accountability pressure or their interaction may directly influence documentation quality. To examine this relationship I perform a 2 X 2 ANOVA with QUAL_SCORE as the dependent variable. The results of the 2 X 2 ANOVA indicate no significant relation between client preference (p = 0.519 two-tailed), PCAOB accountability pressure (p = 0.712 two-tailed) or their interaction (p = 0.296 two-tailed) on documentation quality. These results suggest that the influence of client preference and PCAOB accountability pressure do not directly influence auditors’ documentation. Instead, differences in auditors’ processes ultimately influence their documentation quality.

Mediation Analysis

While not hypothesized, information search type may be a mediator between knowledge of the client preference and documentation quality. I conduct mediation testing consistent with Baron and Kenny’s (1986) four criteria. First, a significant relationship must exist between the independent variable (client preference) and the presumed mediator (information search type). This criterion is satisfied as the results of H1 suggest a significant relationship between client preference and information search type for the TPSI (time per software item) measure (See Table 4). Second, a significant relationship must exist between the presumed mediator (information search type) and the dependent variable (documentation quality). This criterion is satisfied as the results of H2 suggest a significant relationship between information search type and documentation quality (See Table 6). The third requirement is that the independent variable (client preference) is significantly associated with the final outcome variable (documentation quality). However, results discussed in the “direct effects” section above, suggest no significant
relationship between client preference and documentation quality (p = 0.519 two-tailed). As such, information search type is not a mediator between client preference and documentation quality.

**H4 Robustness Analysis**

Recall that H4 predicts that auditors engaged in a deeper search should have higher documentation quality. As presented in Table 6, results of H4 indicate a significant relationship between ITEMS and QUAL_SCORE after controlling for confidence (CONF), however the relationship is in the opposing direction such that individuals engaged in a shallow search have higher documentation quality than those engaged in a deep search. Support for H4 would be a positive beta coefficient for ITEMS in a regression analysis. To explain the surprising result for H4 I perform a hierarchical regression to consider covariates that give further insight into the relationship between search depth and documentation quality. I further consider these analyses after removing apparent outlier observations in the data.

I perform hierarchical regression to consider covariates that may give further insight into the relationship between search depth and documentation quality, which are presented in Table 10. Column [a] of Table 10 presents the regression analysis as initially performed. This analysis is consistent with that presented in Table 7 and indicates a significant relationship between the number of items viewed and documentation quality after controlling for auditors’ confidence (p = 0.035 one-tailed).

In addition to this analysis I consider the covariates of knowledge (KNOW) and time spent engaged in documentation (DOC_TIME). Column [b] of Table 10 presents a regression analysis I control for auditors’ confidence, relevant knowledge, and time spent engaged in documentation in the relationship between search type and documentation quality. Auditors
with higher relevant knowledge may engage in a shallow search because they have a higher base level of knowledge to draw upon as they document their conclusions. Further, review of the correlation table, Table 3, indicates a positive relationship between DOC_TIME and QUAL_SCORE, indicating that auditors spending more time engaged in documentation have higher documentation quality. It is possible that there is a trade-off in auditors’ time, such that auditors who spend less time engaged in search may have higher quality documentation because they spend more time documenting. Results of the regression are presented in column [b] of Table 10 and indicate significant relationship between QUAL_SCORE and ITEMS at $p = 0.10$ ($p = 0.060$ one-tailed) when I control for confidence, relevant knowledge and documentation time. Results indicate that the variance in documentation quality is explained by search depth, confidence, relevant knowledge and documentation time.

To further examine the trade-off of auditors’ time engaged in search and documentation I consider the interaction of auditors’ relevant knowledge and the amount of time spent documenting. Column [c] of Table 10 presents a regression analysis where I control for auditors’ confidence, relevant knowledge, time spent documenting and the interaction of relevant knowledge and time spent documenting in the relationship between search depth and documentation quality. Results of the regression are presented in column [c] of Table 10 and indicate a significant relationship between QUAL_SCORE and ITEMS at $p = 0.10$ ($p = 0.062$ one-tailed) when I control for confidence, relevant knowledge, documentation time and the interaction of knowledge and documentation time.

Finally, since the study was conducted during a training session, the auditor participants may have felt that they did not have sufficient time to provide quality documentation. In the experimental instrument I asked participants “Did you have enough time to complete this task?”
I note that 21 participants (52.5%) indicated they did not have enough time to complete the task and the remaining 19 (47.5%) of participants indicated they had enough time to complete the task. To control for the auditors’ indication of enough time provided, I include the dichotomous variable ENOUGH, where 1 = participant indicated they had enough time to complete the task and 0 = participant indicated insufficient time to complete the task, in the regression analysis. I regress QUAL_SCORE on ITEMS, CONF, KNOW, DOC_TIME, the interaction of KNOW x DOC_TIME and ENOUGH. Results, which are presented in column [d] of Table 10, indicate a significant relationship between QUAL_SCORE and ITEMS (p = 0.02 one-tailed).

The above analyses support the results reported, such that there is a significant negative relationship between ITEMS and QUAL_SCORE, which suggests that auditors selecting more items for examination have lower quality documentation. To further examine this finding, I graphically examine of the relationship between ITEMS and QUAL_SCORE for outlier observations. I note two apparent outliers and I exclude these two outliers and perform the above aforementioned regression analyses. Results are presented in Table 11. Column [a] of Table 11 presents results of the regression where n = 38 observations and QUAL_SCORE is regressed on ITEMS, and CONF. Results indicate significant relationship between ITEMS and QUAL_SCORE after controlling for CONF (p = 0.014 one-tailed). Review of the beta coefficient indicates a negative the relationship between ITEMS and QUAL_SCORE such that a shallow search results in higher quality documentation.

Column [b] of Table 11 presents results of the regression where n = 38 observations and QUAL_SCORE is regressed on ITEMS, CONF, KNOW, and DOC_TIME. Results indicate a significant relationship between ITEMS and QUAL_SCORE at p = 0.10 (p = 0.081 one-tailed).
<table>
<thead>
<tr>
<th></th>
<th>[a]</th>
<th>[b]</th>
<th>[c]</th>
<th>[d]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Std. Beta</td>
<td>t-stat</td>
<td>p-value</td>
<td>Std. Beta</td>
</tr>
<tr>
<td>Intercept</td>
<td>3.592</td>
<td>0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITEMS</td>
<td>-0.277</td>
<td>-1.866</td>
<td>0.035</td>
<td>-0.257</td>
</tr>
<tr>
<td>CONF</td>
<td>0.348</td>
<td>2.347</td>
<td>0.012</td>
<td>0.431</td>
</tr>
<tr>
<td>KNOW</td>
<td></td>
<td></td>
<td></td>
<td>-0.272</td>
</tr>
<tr>
<td>DOC_TIME</td>
<td></td>
<td></td>
<td></td>
<td>0.131</td>
</tr>
<tr>
<td>KNOW x DOC_TIME</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENOUGH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td></td>
<td></td>
<td>0.253</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: All p-values are presented as one-tailed tests

Legend:

ITEMS: (Number of guidance items viewed, a lower value indicates a shallow search and a higher value indicates a deeper search)
CONF: Self-reported confidence in conclusion. A higher value indicates higher confidence.
KNOW: Knowledge of Revenue Guidance Score (A higher value indicates higher knowledge of revenue recognition guidance)
DOC_TIME: Number of seconds spent writing Revenue Recognition Memo
ENOUGH: Dummy variable where 1 = participants indicated sufficient time to complete case study and 0 = participants indicated insufficient time to complete case study
Column [c] of Table 11 presents results of regression where \( n = 38 \) and QUAL\_SCORE is regressed on ITEMS, CONF, KNOW, DOC\_TIME and KNOW \( \times \) DOC\_TIME. Results indicate that the relationship between ITEMS and QUAL\_SCORE is not significant (\( p = 0.245 \) one-tailed) and suggest that when the apparent outliers are removed and I control for auditors’ confidence, knowledge, documentation time and the interaction of knowledge and documentation time, the depth of search is no longer a significant predictor of documentation quality.

Finally, since the study was conducted during a training session, the auditor participants may have felt that they did not have sufficient time to provide quality documentation. I note that of the two outlier observations one indicated sufficient time to complete the task whereas the other indicated insufficient time to complete the task. Column [d] of Table 11 presents a regression analysis where I control for whether auditors felt they had enough time to sufficiently complete the task. Specifically, I regress QUAL\_SCORE on ITEMS, CONF, KNOW, DOC\_TIME, KNOW \( \times \) DOC\_TIME, and ENOUGH. Results indicate that the relationship between ITEMS and QUAL\_SCORE is not significant (\( p = 0.172 \) one-tailed) and suggest that when the apparent outliers are removed and I control for auditors’ confidence, knowledge, documentation time, the interaction of knowledge and documentation time, and auditors’ report of whether they had enough time to sufficiently complete the task, the depth of search is no longer a significant predictor of documentation quality.

To further explore the influence of the interaction between auditors’ relevant knowledge and documentation time, I examine the estimated marginal means of QUAL\_SCORE based on KNOW and DOC\_TIME. Specifically, I bifurcate KNOW and DOC\_TIME using a median split. Observations at or below the median value for KNOW indicate low knowledge whereas
### Table 11
Supplemental Analyses – Two Apparent Outliers Removed from Analysis

Individual Regression Analysis - Dependent Variable: DOC_SCORE

<table>
<thead>
<tr>
<th></th>
<th>[a]</th>
<th>[b]</th>
<th>[c]</th>
<th>[d]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Std. Beta</td>
<td>t-stat</td>
<td>p-value</td>
<td>Std. Beta</td>
</tr>
<tr>
<td>Intercept</td>
<td>4.679</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITEMS</td>
<td>-0.340</td>
<td>-2.289</td>
<td>0.014</td>
<td>-0.226</td>
</tr>
<tr>
<td>CONF</td>
<td>0.329</td>
<td>2.217</td>
<td>0.017</td>
<td>0.363</td>
</tr>
<tr>
<td>KNOW</td>
<td>-0.171</td>
<td>-1.160</td>
<td>0.127</td>
<td>-1.714</td>
</tr>
<tr>
<td>DOC_TIME</td>
<td></td>
<td></td>
<td></td>
<td>0.315</td>
</tr>
<tr>
<td>KNOW x DOC_TIME</td>
<td></td>
<td></td>
<td></td>
<td>1.816</td>
</tr>
<tr>
<td>ENOUGH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.286</td>
<td>0.396</td>
<td>0.495</td>
<td>0.509</td>
</tr>
</tbody>
</table>

NOTE: All p-values are presented as one-tailed tests

**Legend:**

ITEMS: (Number of guidance items viewed, a lower value indicates a shallow search and a higher value indicates a deeper search)

CONF: Self-reported confidence in conclusion. A higher value indicates higher confidence.

KNOW: Knowledge of Revenue Guidance Score (A higher value indicates higher knowledge of revenue recognition guidance)

DOC_TIME: Number of seconds spent writing Revenue Recognition Memo

ENOUGH: Dummy variable where 1 = participants indicated sufficient time to complete case study and 0 = participants indicated insufficient time to complete case study.
those above the median value indicate high knowledge. With respect to documentation
time, observations at or below the median value for DOC_TIME indicate a short duration to
complete the revenue recognition memo whereas values above the median indicate a long
duration. The estimated marginal means of QUAL_SCORE taking into account ITEMS, CONF,
and ENOUGH, which are presented in Table 12, indicate that documentation quality is lowest
when knowledge is high but documentation time is low. Further, the interaction suggests that
when auditors’ relevant knowledge is high their documentation quality depends more on the
amount of time spent documenting. Auditors with high knowledge that spend less time
documenting have lower quality documentation whereas auditors with high knowledge that
spend more time documenting have higher quality documentation. Documentation quality of
auditors with low knowledge does not vary based on the amount of time spent documenting.

This may be due auditors’ integration of their existing knowledge with the information
acquired during search. Auditors with higher levels of knowledge must spend more time sorting
through their existing knowledge and integrating the acquired information in order to achieve
high quality documentation. Those auditors with higher knowledge who do not spend adequate
time integrating their existing knowledge with acquired information may be unable to adequately
express their conclusions ultimately resulting in lower quality documentation. Auditors with
lower levels of knowledge also engage in a sorting and integration process, however since their
available knowledge is low the amount of time spent engaged in this process does not ultimately
influence their documentation quality.
Table 12
Estimated Marginal Means of Dependent Variable QUAL_SCORE by median split of KNOW and DOC_TIME
Two Apparent Outliers Removed from Analysis

<table>
<thead>
<tr>
<th>KNOW</th>
<th>DOC_TIME</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Low</td>
<td>8.001</td>
<td>6.651</td>
</tr>
<tr>
<td></td>
<td>n = 10</td>
<td>n = 9</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>Low</td>
<td>8.120</td>
<td>8.104</td>
</tr>
<tr>
<td></td>
<td>n = 10</td>
<td>n = 9</td>
<td></td>
</tr>
</tbody>
</table>

A higher value of QUAL_SCORE indicates higher documentation quality.
CHAPTER 5

CONCLUSION

Discussion

The purpose of this study is two-fold. First, I develop an understanding of auditors’ information search behavior and examine whether accountability from a PCAOB inspection results in increased cognitive effort ultimately influencing auditors’ search behavior. Second, I examine the relationship between search behavior and documentation quality. With respect to auditors’ information search behaviors, I hypothesize that auditors’ with knowledge of the client’s preference engage in a decision-focused search instead of an information-focused search. I also hypothesize that PCAOB accountability pressure results in increases in auditors’ cognitive effort and therefore result in a deeper search.

With respect to documentation quality, I posit main effects for information search type and search depth on documentation quality. In addition, I hypothesize that information search type and depth jointly influence documentation quality. When auditors initially engage in a decision-focus search there is greater difference in documentation quality between auditors engaged in a deep search and those engaged in a shallow search. When auditors initially engage in an information-focus search there is less difference in documentation quality between auditors engaged in a deep search and those engaged in a shallow search.

I test the theoretical predictions of the study via an online experiment administered to audit managers participating in their firm’s annual training. Participant auditors were randomly assigned into one of four experimental groups. I manipulate two variables, knowledge of the client preference (unknown or known) and PCAOB accountability pressure (threat of PCAOB inspection absent or present) and I measure three variables, information search type
(information-focused or decision-focused), information search depth (shallow or deep), and documentation quality (low or high).

The experiment required participants to determine the appropriate accounting policy for a hypothetical client’s sales contract. To form their judgment, auditors conducted a search using a provided electronic database simulating the Financial Accounting Standard Board (FASB) Codification. Subsequently, they documented their processes, conclusions and proposed audit procedures in a revenue recognition memo. Finally, they respond to demographic and other experience-related questions.

The online experimental instrument captured auditors’ information search behaviors including, the order of items selected, amount of time spent reviewing each item, and the number of times an item was viewed, which I use to identify auditors’ search type. Specifically, auditors who viewed consistent at the beginning of the search, spent more time viewing consistent items, or spent more time per consistent item engaged in a more decision-focused search over information-focused search. I develop a measure of documentation quality by evaluating each memo based on key elements deemed necessary for audit documentation by the PCAOB or by firm guidance. A doctoral student with five years of public accounting experience and I coded each memo based to determine overall documentation quality. The online experimental instrument also captured data regarding auditors’ relevant accounting knowledge, the amount to time they were engaged in documentation, their overall confidence, and their relevant experience.

With respect to the relationship between knowledge of the client preference and information search type, I find weak support for a client preference effect. Auditors with knowledge of the client preference engage in a more decision-focused information search as they
spend more time per each guidance item associated with that preference than auditors without
knowledge of the client’s preference. However, these auditors did not place greater emphasis on
the client’s preferred guidance preference at the beginning of their search nor did they spend
more time reviewing guidance consistent with the client’s preference.

Differences between my findings and those of prior audit literature examining bias in
information search may be due to the source of the preference. For example, Turner (2001)
finds that auditors engaged in a biased search toward the reviewer’s preference, whereas this
study examines the client’s preference. Confirming a reviewer’s preference imposes less
personal risk than confirming a client’s preference. Failure to conform to a reviewer’s
preference may result in a loss of personal reputation, which although detrimental to the
individual, may be considered less harmful than loss of the firm’s reputation, which could result
if an auditor confirmed an incorrect client preference. As such, it is possible that the source of
the preference results in distinctive search behaviors.

I find no evidence that auditors spend more time reviewing items consistent with the
client’s preference compared to items inconsistent with the client’s preference. However,
findings in tax literature indicate that tax professionals engage in a confirmation-biased search
emphasizing the client’s preference (Cloyd and Spilker 1999). Differences between this study’s
findings and those of tax literature may be due to the underlying differences between audit and
tax standards, client relationships and accounting tasks. Tax standards of conduct and ethics
issued by the AICPA highlight tax professionals’ role as a client advocate (AICPA 2009). However
PCAOB auditing standards require auditors to maintain independence from their
clients and avoid client advocacy (AICPA 1988).
Taken together, my findings may be due to auditors’ inclination to “rule-out” hypotheses. It is possible that auditors in the current study engaged in search behavior with a dual-purpose. They had to both “rule-out” software revenue recognition guidance as the appropriate accounting policy for the sales contract and also determine the appropriate guidance to apply to the sales contract. It is appropriate that auditors with knowledge of the client preference spend more time per guidance item consistent with that preference because they are carefully reading the item to determine whether it is not appropriate for use or acceptable for use. Ultimately, auditors in this study sought to rule-out the client’s preference prior to their information search as evidenced by their indication of disagreement with the client’s preference prior to their search. Therefore, these auditors do not need to review all available guidance related to the client’s preference they “ruled it out” as the appropriate method. Instead, these auditors examine guidance contrary to the client’s preference to determine the appropriate method of accounting.

With respect to the relationship between PCAOB accountability pressure and information search depth, I find that PCAOB accountability pressure does not influence auditors’ search depth even when I control for auditors’ relevant knowledge prior to search. This finding suggests that auditors may not experience PCAOB accountability pressure similarly to that of a normal working paper review. Unlike literature investigating accounting through the normal workpaper review process (i.e. Johnson and Kaplan 1991), I find no evidence that PCAOB accountability pressure increased auditors’ cognitive effort as evidenced by a deeper search. Further, I find that PCAOB accountability pressure does not influence auditors’ search type and therefore may not be an adequate mechanism to diminish confirmation bias in auditor’s search.

Recall that I posit main effects for search type and depth on documentation quality as well as an interactive effect of type and depth on documentation quality. With respect to the
relationship between information search type and documentation quality. I find that search type influences documentation quality such that as auditors perform a more information-focused search their documentation quality increases. This suggests that information-focused searchers view items during search that influence the nature and extent of their documentation, ultimately meeting firm guidance and PCAOB requirements for documentation to a higher degree than decision-focused searchers.

Contrary to expectations, auditors engaged in a shallow search have higher documentation quality, which may suggest a trade-off of auditors’ efforts. For example, auditors are aware of the limit to their productive time to adequately perform and document audit procedures, therefore they engage in a shallower search in order to expend more time and effort on documentation. Auditors perform their typical activities under a time constraint, although a time constraint was not emphasized during my study, participants may have been aware of their own personal productivity limit. Therefore they engage in a shallower search in order to expend more effort on documentation.

This trade-off is further evidenced by the interaction of search and depth. I find that search type and depth interact to influence documentation quality. When the search type is decision-focused the difference in documentation quality between shallow and deep search is small. However, when auditors’ search type is information-focused there is a large and significant difference in documentation quality between shallow and deep search depths. Auditors who engage in an information-focus but shallow search have higher documentation quality than those who engage in an information-focus and deep search. These findings suggest that both the type and depth of search are important in determining documentation quality. Specifically, auditors who engage in a shallow search must seek a variety of information to
achieve high documentation quality but when they engage in a deep search, the type of search is less indicative of the quality of the outcome. Ultimately, to achieve the highest quality documentation, auditors should engage in an information-focused but shallow search.

Contributions

The results of the study have contributions to literature and practice. First, my study contributes to accounting literature examining client preference effects on professionals’ processes and outcomes. My study provides evidence that auditors consider the client’s preference during their search differently than tax professionals, which ultimately may be due to underlying differences in their role as client advocates. In addition, my study provides evidence that although auditors search type is biased by client’s preference; that bias does not result in a confirmatory search whereby the auditor relies primarily on supporting evidence. Instead, auditors may consider the client preference in their effort to “rule out” that preference as the appropriate accounting policy.

Second, my study contributes to literature investigating accountability in auditors’ processes. Specifically, my study provides evidence that auditors may not experience PCAOB accountability pressure in the same manner as intern firm accountability due to the normal working paper review process. Contrary to my expectations, I find that auditors experiencing PCAOB accountability pressure did not engage in a deeper search. I also find that these auditors did not use higher mental effort nor experience more motivation to perform well.

Third, my dissertation contributes to literature examining auditors’ information search behaviors. Specifically, I expand on tax and psychology research investigating the properties of individuals’ search behaviors and I also expand on early auditing research relying on verbal process tracing methodologies. Specifically, my study provides evidence that information search
type and depth interact in their influence on performance. Prior literature provides evidence tax professionals with a greater ability to modify their search objective in response to changes in the situation outperform those with a lower level of that ability (Magro 2005). However, my study is the first to suggest an interactive effect of two different search behaviors on performance.

Fourth, the results of my dissertation indicate that auditors’ processes influence documentation quality. Although documentation is paramount to the audit practice, there is little research identifying the factors that contribute to high quality documentation. My study provides a basis for future research to explore other factors that contribute to high quality documentation.

Finally, the results of my dissertation may be of importance to audit firms as they implement quality control mechanisms in their efforts to improve audit quality. Specifically, they may consider that the threat of a PCAOB inspection may influence auditors’ motivation differently than in-firm review processes. In addition, they may consider the results of my study in their efforts to increase auditors’ efficiency. Recall that I my results suggest that a shallow search results in higher documentation quality. Since documentation quality is the outcome of most importance to the PCAOB and peer review teams, firms may consider provide instruction to auditors regarding their search processes when evaluating client’s accounting policy decisions.

Limitations

As with all research, my dissertation is subject to limitations. Several limitations address the external realism of the experimental task. Although the study’s participants identified the experimental task as realistic25, it was designed to provide an optimal level of

---

25 I examined responses to the question “How realistic was this scenario?”, which was measured on a seven-point Likert scale where 1 = very unrealistic and 7 = very realistic. Participant auditors indicated a mean of 5.65 (SD = 1.42) indicating that the experimental task approximates realistic tasks within the audit process.
control of certain factors. First, the study requires auditors to examine only a single sales contract for a hypothetical client. In practice, auditors examine accounting policies associated with many revenue transactions and all transactions are not accounted for using the same authoritative guidance.

Second, the information search database provided contained only twenty items for participants’ review and consideration. Of the items presented, thirteen items were summarized accounting guidance representing four subcategories of the FASB codification, two items were hypothetical client background, three items were competitors’ accounting policies, and two were other sources of information. In practice, auditors have many more resources available to search and review. For example, FASB revenue recognition guidance contains 29 subcategories within the codification (FASB 2012) and auditors can access multiple company competitors via the Securities Exchange Commission website.

Third, the experimental task only allowed auditors to conduct search for 40 minutes and document for 40 minutes. Time limits are typically enforced during information search and documentation tasks (i.e. Brazel et al. 2004) and none of the auditors used the full amount of time allotted for search and documentation. However, the imposed time limit in this study may have instilled a sense of time pressure on individuals.

In addition to limitations due to my experimental task and design there are limitations due to the operationalization of documentation quality and sample size. First, my measure of documentation quality is subjective. Documentation quality is measured based on two reconciled coders ratings of each participants’ memo and the interrater reliability of the documentation quality measure only fair. Future research should consider the use of text-mining to provide a more objective measure of documentation quality.
Second, the small sample size of 40 participants may limit the power of the statistical results. Participants were randomly assigned to one of four treatment groups: Client Preference Unknown/High PCAOB Accountability Pressure (15), Client Preference Known/High PCAOB Accountability Pressure (7), Client Preference Unknown/Low PCAOB Accountability Pressure (7), and Client Preference Known/Low PCAOB Accountability Pressure (11). It is possible that a larger sample size would provide stronger support for my hypothesized relationships. However, despite the small sample size, the results revealed significant relationships for Hypotheses 1, 4 and 5.

Future Research

While my dissertation contributes to literature in several areas, there are several opportunities for future research. With respect to the influence of the PCAOB, my study finds no evidence that PCAOB accountability pressure influences auditors’ processes or documentation. However, anecdotal evidence suggests that professional services firms have responded to the PCAOB inspection process in many ways including the development of quality control reviews and modifications to their audit methodology. Future research could explore the PCAOB’s influence on auditor choice of audit procedure or sample size.

While there are various studies that explore information search behaviors, there is still uncertainty regarding the causes and effects of various search behaviors. My dissertation provides evidence of auditors’ search behaviors in the context of the evaluation of a client preferred accounting policy. It is possible that auditors’ search behavior may be specific to task complexity, task type, or the type of evidence sought. For example, auditors may search through FASB or other regulatory guidance differently then through client provided information. There is also little evidence regarding when auditors choose to terminate their search. For example, do
auditors terminate their search when they have sought confirmatory and disconfirmatory
evidence or do they terminate after confirmation of an initial hypothesis. Future research should
explore stopping rules for auditors search behavior.

Finally, there is little research providing evidence of the relationship between information
search behaviors and performance or learning. Future research should explore information search
behaviors that contribute to high quality judgments, performance or knowledge integration.
APPENDIX A

ELECTRONIC DATABASE SCREEN SHOTS
A Study by Renee M. Olvera

Financial Accounting Standards Board Guidance

605-25: Multiple-element arrangements

605-25-11: Scope and Scope Exceptions
605-25-20: Recognition
605-25-30: Initial Measurement
605-25-55: Examples & Implementation Guidance

605-25: Revenue from contracts

605-33-10: Scope and Scope Exceptions
605-33-20: Recognition
605-33-30: Initial Measurement
605-33-55: Examples & Implementation Guidance

605-40: Software - Revenue Recognition

605-40-10: Scope and Scope Exceptions
605-40-20: Recognition
605-40-30: Initial Measurement
605-40-55: Examples & Implementation Guidance

A Study by Renee M. Olvera

605-25: Multiple-Element Arrangements

605-25-13: Scope and Scope Exceptions

The guidance in this Subtopic applies to all deliverables (that is, products, services, or rights to use assets) within contractually binding arrangements (whether written, oral, or implied), and hereafter referred to as “arrangements” in all industries under which a vendor will perform multiple revenue-generating activities.

The guidance in this Subtopic does not apply to arrangements that include vendor offers to a customer for either of the following: Free or discounted products or services that will be delivered (either by the vendor or by another unrelated entity) at a future date if the customer completes a specified cumulative level of revenue transactions with the vendor or remains a customer of the vendor for a specified period revenue recognition for multiple-element arrangements

1. Revenue arrangements with multiple deliverables shall be divided into separate units of accounting.
2. Arrangement consideration shall be allocated among the separate units of accounting based on their relative selling prices.
APPENDIX B

EXPERIMENTAL TASK: SALES CONTRACT FACTS
During the current year XYZ Company entered into a contract to sell a server, post contract customer support, services and a specified product to be delivered in the future for $10 million. This contract is material to the Company’s financial statements.

- Software included in the contract is essential to the server’s functionality.
- The Company believes that they could sell an individual server without post-contract support or services for $8 million.
- Post-contract customer support will be provided for 12 months from the date of delivery of the server. The Company estimates the cost to provide post-contract support to be approximately 5% of the total consideration of any sale.
- The contract calls for $500,000 worth of services to be provided to help install and integrate the servers into the customer’s existing IT environment.
- The Company agrees to provide its customer with a software upgrade when released free of charge. Although, no definitive price list has been established, management of the Company estimates that they could sell the new product for approximately $2 million when and if released.
REFERENCES

AICPA, American Institute of Certified Public Accountants 1988. ET Section 100 Independence, Integrity, and Objectivity. In ET Section 101, edited by AICPA.


PCAOB, Public Company Accounting Oversight Board. 2004. AUDITING STANDARD No. 3 – Audit Documentation, edited by PCAOB.


