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# WHAT DO AUDITORS PROMISE THEIR GOVERNMENTAL AUDIT CLIENTS? WHAT DO GOVERNMENTAL AUDIT CLIENTS WANT? AUDIT PROPOSAL EVIDENCE FROM GOVERNMENTAL AUDIT PROCUREMENT PROCESSES

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AUDIT PROPOSAL EVIDENCE FROM GOVERNMENTAL AUDIT  
PROCUREMENT PROCESSES

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DISSERTATION

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A dissertation submitted in partial fulfillment of  
requirements for the degree of Doctor of Philosophy in the  
College of Business and Economics  
at the University of Kentucky

By  
Yu-Tzu Chang

Lexington, Kentucky

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2015

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## ABSTRACT OF DISSERTATION

### WHAT DO AUDITORS PROMISE THEIR GOVERNMENTAL AUDIT CLIENTS? WHAT DO GOVERNMENTAL AUDIT CLIENTS WANT? AUDIT PROPOSAL EVIDENCE FROM GOVERNMENTAL AUDIT PROCUREMENT PROCESSES

This dissertation, consisting of two studies, analyzes a dataset of audit proposals to investigate auditors' impression management strategies, and, audit procurement quality in the public sector. Text based analytic methods are employed to examine the content of audit proposals, which were submitted for government audit engagements in fifteen states.

The first study investigates auditors' marketing language and hypothesizes that CPA firms will project a cooperative, non-independent image in audit proposals to impress potential clients. The results suggest that CPA firms, especially larger ones, project a persona of a cooperative and trustworthy service provider rather than presenting themselves as independent auditors. In addition, CPA firms self-portray more independence when client management is involved in a procurement process compared to when an independent state audit agency selects the auditor. Responding to the PCAOB's (2013) concern about auditors' commercial interests and marketing materials, the findings suggest that CPA firms' marketing language may threaten perceived auditor independence and thus are important to security markets regulators, practitioners, and decision makers.

The second study examines the association between auditor selection and perceived audit service qualities in audit proposals. Based on agency theory and prior research, this study predicts that government clients will choose an auditor whose audit proposal reflects more perceived audit quality attributes and that this association will be stronger for states with higher political competition or lower perceived risk of corruption. The results indicate that government clients tend to select an auditor who emphasizes competence, is a predecessor auditor, and, is less expensive. The findings provide insights into governmental audit procurement practices and the determinants of auditor selection decisions in the public sector.

The dissertation contributes to the literature by creating a new, unexplored dataset of audit proposals, developing and validating linguistic categories related to the concepts of auditor independence, relationship marketing, and competence, and exploring potential threat of audit firms' marketing materials to the appearance of auditor independence.

**KEYWORDS:** Impression Management, Auditor Independence,  
Perceived Audit Quality Attributes, Audit Procurement,  
Auditor Selection

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April 22, 2015

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## **Chapter 1**

### **1. Introduction**

This dissertation consists of two studies examining a dataset of audit proposals submitted by auditing firms to obtain public sector engagements. The first study (Study 1) investigates audit firms' impression management strategies, explores the determinants of firm images (i.e., personae), and discusses whether certain image attributes, even though desired by audit clients, could impair auditor independence in appearance. The second study (Study 2) addresses several perceived audit service qualities, examines audit procurement quality by testing the association between those perceived quality attributes retrieved from audit proposals and auditor selection decisions in a request-for-proposal (RFP) process, and, inspects the effect of environmental factors on audit procurement quality.

Investigating audit firms' impression management in audit proposals has important implications for standard setters and practitioners. Recently, the Public Company Accounting Oversight Board (PCAOB 2013) calls for attention to CPA firms' marketing materials and underlying marketing strategies, which could be at odds with audit quality and independence. Like other professions, certified public accountant firms (CPA firms) have interests in building close client relationships to maximize profit so their practice remains economically viable. However, it potentially threatens the public's confidence in the value of audit if a firm's commercial considerations conflict with auditors' professionalism and further affect audit performance (e.g., Brown 2005). Therefore, it is important to understand whether a firm's marketing language promotes a close client-auditor relationship but, at the same time, endangers the appearance of auditor

independence. The study results provide insights into how CPA firms use audit proposals to market their services and how extensive marketing language could impair the appearance of auditor independence. There are currently no constraints on auditors' marketing materials; nevertheless, regulators and practitioners should be aware of and attentive to the potential effects of audit firms' marketing language, whether it is made intentionally or unintentionally.

The Governmental Audit Quality Center (GAQC) of the American Institute of CPAs (AICPA) recognizes and promotes the importance of quality governmental audits and the value of such audits to government auditees. Examining the effectiveness of governmental audit procurement practices has important implications to public officials and the public. Each year, billions of dollars in federal grants are awarded to state and local governments, and an increase in grants invokes a variety of grant management challenges in government entities (Government Accountability Office 2012). As public officials can benefit from a quality audit in many ways (e.g., improving performance and accountability; enhancing citizens and stakeholders' confidence), a well-designed audit procurement practice that acts as a mechanism for ensuring audit quality (GAO 1986; AICPA 1987) should be of interest to policy makers. Effective audit procurement practices also benefit the public. In spite of laws and policies regulating public officials' conduct, a number of government accounting scandals uncovered in the past decades demonstrate the importance of government auditing and the role of external auditors as gatekeepers of public resources. However, even though audit procurement is common in the public sector, we know little about the practice itself or the determinants of the quality

of audit procurement. In addition, understanding the audit procurement process in the public sector may also hold insights and benefits for private audit procurement processes.

Both studies use a hand-collected dataset that consists of 378 audit proposals submitted by 133 CPA firms to 123 government audit engagements. The analysis of proposals employs a text analysis application called Linguistic Inquiry and Word Count (LIWC). Study 1 investigates audit firms' marketing language and persona reflected in audit proposals. Impression management theory suggests that the firms will project desirable images to their clients. The results are consistent with the prediction that CPA firms, especially larger ones, project a persona of a cooperative and trustworthy service provider, instead of an independent auditor, in their proposals. Study 2 examines the association between auditor selection decision and perceived audit service qualities in audit proposals. Agency theory suggests that agency problems (i.e., conflicts of interest between public officials and taxpayers) will induce a need for a quality audit, and a high political competition in a state could intensify this need (Baber 1983). The study predictions are that government clients will choose an auditor whose audit proposal reflects more perceived audit quality attributes, and that this association will be stronger for states with higher political competition. I found that descriptions of auditor's competence in audit proposals predict auditor selection decisions in government audits. Nevertheless, no evidence presented herein shows that auditor independence is associated with auditor selection decision in a RFP process. In addition, audit clients, on average, tend to hire a predecessor auditor (i.e., longer tenure). The overall results, however, do not support the study hypotheses related to the effects of the environmental factors (i.e.,

political competition and perceived risk of political corruption) on the quality of audit procurement practices.

The remainder of the dissertation is organized as follows: Chapter 2 covers auditor impression management and the determinants (Study 1) and includes a review of literature, the pertinent theory, development of hypotheses, data selection, methodology, the results and statistical analyses, and the discussion and conclusion. Chapter 3 relates auditor selection decisions and perceived audit service qualities (Study 2) and provides a review of literature on auditor selection, the pertinent theories, development of hypotheses, data selection, methodology, the results and statistical analyses, and the discussion and conclusion. Chapter 4 summaries the studies and concludes.

## **Chapter 2**

### **Study 1: Auditor Impression Management Strategies in Government Audit**

#### **Engagement**

##### **2.1. Introduction**

Study 1 discusses an overarching research problem: whether audit firm impression management is at odds with auditor independence in appearance. Using public audit data, I examine audit firms' impression management and marketing strategies through their language usage in audit proposals. Specifically, this study investigates (1) the persona or image that CPA firms project in their proposals and (2) whether these images differ by audit firm and procurement characteristic. It is important to understand how audit firms market their services through impression management, as firms' commercial considerations reflected in assurance marketing materials may influence audit quality and independence.

Auditor independence is a cornerstone of the auditing profession and a foundation for audit quality (Caswell and Allen 2001). However, a series of financial scandals in the early 2000s revealed evidence of a failure of the U.S. auditing system to deliver true independence (Moore, Tetlock, Tanlu, and Bazerman 2006). Some researchers debate the impossibility of true independence due to auditors' unconscious biases. For example, Bazerman, Morgan, and Loewenstein (1997) suggest that audit firms impair their independence with clients due to unconscious biases (i.e., inherent self-serving biases) in a contracting process. Moore et al. (2006) believe that unconscious bias is an important source of violations of auditor independence and far more pervasive than intentional corruption. Many other threats to auditor independence have been identified, including

economic dependence, provisions of non-audit service, high competition, lengthy tenure, and closeness of auditor-client relationships (e.g., CICA 2002; Swanger and Chewning 2001; SEC 2000). Identifying factors affecting the appearance of independence is essential because financial statement users cannot accurately assess actual auditor objectivity (McGrath, Siegel, Dunfee, Glazer, and Jaenicke 2001) but only its appearance. That is, even if auditors are in fact independent, the lack of the appearance of independence compromises overall independence.

This study examines auditor impression management as a potential threat to auditor independence in appearance. Particularly, I investigate whether CPA firms create and project a persona of a cooperative and customer-oriented service provider in audit proposals, which may compromise auditor objectivity in appearance and thus threaten perceived auditor independence. Based on the theories of relationship marketing and impression management, this study, first, predicts that audit firms will highlight desirable images in marketing materials to attract prospective clients. The second and third hypotheses examine whether managerial involvement in auditor selection decisions and audit firm characteristics affect auditors' impression management strategies.

The hand-collected sample consists of 378 audit proposals submitted by 133 CPA firms in governmental RFP processes. The primary targeted data sources are the government agencies who maintain a central depository for documents related to RFP's for financial and/or single audit services. Text analytic methods are used to examine the content of audit proposals. I identified several linguistic cues related to the attributes of interest, created corresponding category word lists (i.e., dictionaries) based on a review of five audit proposals, and utilized a text analysis application to analyze the data (i.e.,



capture the occurrences of the words in the developed dictionaries). The results indicate that CPA firms, on average, project a persona of a cooperative and trustworthy service provider, not an independent auditor, in their proposals. In addition, larger CPA firms engage in more relationship marketing strategies in the bidding process than do smaller firms. The findings imply that a CPA firm's commercial interests partially drive its impression management and that the personae created by firms may conflict with the public's and the regulators' expectations of auditor independence (e.g., GAGAS 3.03; AICPA Code 0.300.050; AU section 220).

This paper contributes to auditing research in several ways. First, this paper identifies auditor impression management as a potential threat to the appearance of auditor independence. This is an important issue to investors, practitioners, and regulators as auditor independence is the foundation of the public's trust in the attest function. The study also responds to the PCAOB's (2013) call for attention to CPA firms' commercial activities that may impair audit performance. The results suggest that CPA firms may create an image with attributes desired by clients but not necessarily the public interest. The findings provide insight into how the language in auditors' assurance marketing materials may endanger perceived auditor independence. Second, this study employs emerging corpus linguistic and text analytic methods to analyze the audit proposals and reveal the implicit promises made by auditors to their governmental clients. It is among the first to create and validate word categories that capture these critical messages communicated through audit proposals. Lastly, this study utilizes a new and unexplored dataset to examine auditor relationship marketing strategies in a governmental RFP process. The unique dataset of audit proposals facilitates our understanding of

governmental audit procurement practices and CPA firms' marketing communications. The findings are important for practicing auditors, auditees, and the public interest because auditors' impression management strategies may affect clients' auditor selection results, perceived auditor independence, and audit quality.

This paper proceeds as follows. Section 2.2 addresses the study background and the supporting theories. Section 2.3 discusses the development of hypotheses, and Section 2.4 describes the method and the measurement of variables. Section 2.5 presents descriptive statistics and analysis results. Section 2.6 concludes with a summary of the first study.

## **2.2. Background and Theory**

Auditor-client relationships differ from typical buyer-seller relationships mainly due to the nature of audit services. Specifically, although audit clients hire and pay auditors, the intended users of audit services are existing and potential investors, lenders, and other creditors. A potential conflict of interest between management and the financial statement users raises a concern that auditors may also face a potential conflict of interest when auditors are not independent of management (Bazerman et al. 1997). In fact, numerous corporate accounting scandals (i.e., Enron, WorldCom) have called attention to the issue of impairment of auditor independence. As a result, regulatory reforms have increasingly focused on promoting auditor independence. For example, a primary goal of the 2002 Sarbanes-Oxley Act (SOX) is to enhance external auditor independence. However, some studies suggest that the auditing reforms of SOX may not work as expected in practice instead (e.g., Ashbaugh, LaFond, and Mayhew 2003; Fiolleau, Hoang, Jamal, and Sunder 2013).

The increasingly complex business environment intensifies the competition among audit firms, which may further erode auditor independence. Responding to increasing competition in the audit market, more firms have adopted a marketing orientation (e.g., Ahmed and Hopson 1990), which emphasizes the importance of meeting clients' needs and developing a long-term relationship with clients, potentially over auditor independence. The Big 4 firms, as the leaders in audit markets, recognize the value of relationship marketing. For instance, PricewaterhouseCoopers (PwC) website asserts a commitment to help their clients to address both present and future business challenges in the US market<sup>1</sup>. The firm claims to deliver audit value by meeting clients' business needs and develop its reputation by building lasting relationships with their clients. Similarly, Deloitte declares that it will provide timely communications regarding professional developments and insights for their clients' business<sup>2</sup>, in addition to core audit services (i.e., audit financial statements and report on internal controls). The other two Big 4 firms, KPMG and Ernst & Young, use a similar marketing approach.

The accounting literature recognizes the importance of the application of relationship marketing concepts in the context of auditing. For instance, Ruyter and Wetzels (1999) examine affective commitment in auditor-client relationships and suggest that perceived service quality, trust, and interdependence motivate clients to continue their relationships with an audit firm. A more recent study suggests that audit clients prefer a cooperative, trusting, and long-term relationship with their auditors, in which they can seek advice and feedback from the auditors beyond core audit services (i.e.,

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<sup>1</sup> PwC. 2015. "Financial Statement Audit." Accessed March 30. [http://www.pwc.com/en\\_GX/gx/audit-services/financial-statement-audit/index.jhtml](http://www.pwc.com/en_GX/gx/audit-services/financial-statement-audit/index.jhtml).

<sup>2</sup> Deloitte. 2015. "Financial Statement & Internal Control Audit Services. Delivering Specialized Audit Services." Accessed March 30. [http://www.deloitte.com/view/en\\_US/us/Services/audit-enterprise-risk-services/Financial-Statement-Internal-Control-Audit/index.htm](http://www.deloitte.com/view/en_US/us/Services/audit-enterprise-risk-services/Financial-Statement-Internal-Control-Audit/index.htm).

value-added auditing) (Fontaine and Pilote 2012). However, an intimate auditor-client relationship may threaten auditor independence (e.g., Windsor and Ashkanasy 1995; Bamber and Iyer 2007). In fact, the Independence Standards Board (ISB 2000) identified auditors' familiarity with the client as one of five threats to auditor independence.

Related issue concerns auditors' commercial attitudes and interests. Some scholars are concerned that growing commercialism encourages accounting firms to develop an organizational culture that emphasizes profit and commercial gain over professional independence and objectivity (Wyatt 2004; Zeff 2003). The PCAOB (2013) also argues that auditors' commercial interests and marketing strategies may influence audit quality and independence. In summary, the increasingly intimate auditor-client relationship (e.g., Toffler and Reingold 2003) and auditors' commercialism (e.g., Suddaby, Gendron, and Lam 2009; Carrington, Johed, and Öhman 2011) may affect accounting professionalism and professional values and thereby erode audit firm independence.

### **2.2.1. Impression Management Theory**

Goffman (1959) introduces the theory of impression management, which describes a person's performance as the presentation of self and proposes that people adjust their behaviors to project a certain image or impression to others. In sociology and social psychology, impression management is a goal-oriented, conscious or unconscious, process in which “people present a favorable public image of oneself so that others will form positive judgment” (Newman 2009 p. 184). The notion of impression management also applies to an organization's practices in professional communication and public relations. Organizational managers recognize that a congruency between organizational actions and the interests of the public are critical to organizational survival (e.g., Meyer

and Rowan 1977). By regulating and controlling information in social interaction (Piwinger and Ebert 2001), corporations establish and maintain desirable public perception, e.g., “branding” initiatives.

In accounting, voluntary disclosure research applies the theory of impression management to explain why organizations disclose selective financial information. Studies suggest that management can signal organizational actions through textual content (i.e., disclosures in annual reports, chief executive officers' statements, sustainability reports) and graphical disclosure (i.e., key financial variable graphs in annual reports) to manage public impressions (i.e., environmental and social responsibility, good performance) (Aerts 2005; Cho, Michelon, and Patten 2012; Dilla and Janvrin 2010; Neu, Warsame, and Pedwell 1998; Warsame, Neu, and Simmons, 2002). In auditing, the theory of impression management is used to predict that the auditing profession has an interest in creating and maintaining a public image that emphasizes auditors' trustworthiness. For example, Neu's (1991) case study of Canadian audit firms investigates the profession's impression management activities<sup>3</sup>. In a recent study, Gold, Gronewold, and Salterio (2014) propose that an auditor's own impression management concerns can affect audit performance. Specifically, the study examines the effect of error management climate (i.e., the treatment of audit staff by superiors) on auditors' error-reporting decision and finds that auditors are less willing to their report conceptual than mechanical errors. One explanation for this result is that auditors believe that reporting their own conceptual errors is more problematic for their image than is reporting mechanical errors. The relative unwillingness to report conceptual errors can be

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<sup>3</sup> His findings suggest four sets of institutional practices that help to create and maintain the impression of the trustworthy auditor: (1) professional entrance requirement, (2) maintenance of a professional technology, (3) good works activities, and (4) disciplinary activities.

an issue to audit quality, given that conceptual errors may be more consequential than are mechanical errors.

Impression management suggests that auditors will project desirable public images to potential clients in their marketing materials. The next section discusses several desirable public images (i.e., perceived audit service quality attributes) that auditors are likely to highlight in their proposals with an intention to affect potential clients' perceptions.

### **2.2.2. Desirable Audit Service Attributes**

#### **Independence**

Auditor independence is widely recognized as the cornerstone of the auditing profession as it is the foundation for the public's trust in the attest function (Caswell and Allen 2001). In fact, perceived auditor independence is positively associated with investor perceptions of financial reporting credibility (Khurana and Raman 2006). Researchers also view independence as a critical attribute of audit quality. For example, DeAngelo (1981) believes that audit quality is a product of auditors' ability to discover (i.e., competence) and report (i.e., independence) a breach in the clients' accounting system. In short, without independence auditing and attest practices lack value (Wallace 2004). Regulators and legislators also emphasize the importance of auditor independence. For example, the American Institute of Certified Public Accountants (AICPA) indicates that independence is a distinguishing feature of the audit profession and requires auditors who provide auditing and other attestation services be independent both in fact and in appearance (Code 0.300.050). In the capital market sector, the Securities and Exchange Commission (SEC) believes that the independence requirement is vital to the securities

markets and serves two public policy goals — fostering high quality audits and promoting investor confidence in the integrity of public financial information (SEC 2000). In the public sector, general accepted government auditing standards (GAGAS) emphasize the importance of independence and require that the audit organization and its individual auditors must be independent in all matters relating to the government or public audit work (GAO 2011). In addition, while performing audit and attest services, “auditors should avoid situations that could lead reasonable and informed third parties to conclude that the auditors are not independent and thus are not capable of exercising objective and impartial judgment” (GAGAS Section 3.04, 28). The guidance suggests that auditors should establish and maintain an independent image (i.e., independence in appearance) at all time.

### **Relationship Marketing Images (Personae)**

The relationship marketing literature explores clients’ preferences for two relationship approaches – transactional or relational approach (e.g., Gronroos 1991, 1997; Gummesson 2002). The transactional approach is based on a premise that competition and self-interest results in an arm’s length relationship (Morgan and Hunt 1994). In contrast, the relational approach is based on a perspective that interdependence and cooperation results in a trusting relationship. In survey results, Fontaine and Pilote (2012) found that financial executives prefer more of a relational than a transactional approach with their external auditors. Their findings suggest that audit clients prefer a cooperative, trusting, and long-term relationship with their auditors. As trust is a fundamental cornerstone in a cooperative working relationship (e.g., Morgan and Hunt 1994), audit

firms taking a relational approach are likely to project relationship marketing images—cooperation and trustworthy—in their audit proposals.

In addition, client satisfaction is positively associated with auditor-client relationships (e.g., Behn, Carcello, Hermanson, and Hermanson 1997). The current study examines four determinants of audit client satisfaction: responsiveness, empathy, value, and effectiveness. Responsiveness refers to an auditor's ability to react to client needs (Butcher, Harrison, and Ross 2013; Iskandar, Rahmat, and Ismail 2010; Duff 2004, 2009; Behn et al. 1997; Carcello, Hermanson, and McGrath 1992); for example, the audit firm is flexible in tailoring audit services to meet clients' needs. Studies in audit client satisfaction support the assertion that client-focused attention (i.e., responsiveness to client needs) is an important attribute contributing to client satisfaction (e.g., Behn et al. 1997, 1999; Iskandar et al. 2010; Butcher et al. 2013). Empathy refers to the degree of auditors' understanding of clients' desires, goals, and business challenges (Duff 2004, 2009). For instance, the auditor shows concern about the client's business and is proactive in providing constructive accounting-related suggestions. Marketing research suggests that empathy is a critical component to fostering a close relationship between two parties (e.g., Berry, Zeithaml, and Parasuraman 1990; Sin et al. 2005). Value refers to auditors' ability to provide value-added audit services, from which clients can benefit beyond the statutory audit (e.g., Beattie and Fearnley 1998; Eilifsen, Knechel, and Wallage 2001; Fontaine and Pilote 2012; Herda and Lavelle 2013). That is, clients expect auditors to be a source of support for their business decision-making activity by providing guidance on accounting principles, feedback on internal controls, and general business advice. In fact, responding to clients' needs, audit firms' marketing initiatives have actively promoted the



value-added audit services (Beattie, Fearnley, and Brandt 2000). Lastly, effectiveness is included as a service quality attribute because audit delay in the US local government sector has been recognized as problematic to audit clients (Johnson, Davis, and Freeman 2002; Payne and Jensen 2002). Effectiveness refers to the auditors' ability and commitment to perform the audit in a timely manner. For example, the auditor completes the audit by the contracted deadline.

Table 2.1 summarizes the desirable attributes discussed above and provides the corresponding definitions and sources.

< Insert Table 2.1 here >

### **2.3. Development of Hypotheses**

Impression management is important to a corporation, or CPA firm, especially when the corporation's external stakeholders cannot directly observe some of its organizational activities but rely on public information as an imperfect proxy for these activities (e.g., corporate culture, moral conduct). That is, organizations can manage their public impressions by selectively providing information to stakeholders through different types of communication (e.g., media, annual reports, Tweets). In the audit market, audit clients cannot perfectly observe or evaluate the audit services they purchase due to the nature of auditing. Therefore, CPA firms may construct their audit proposals as a type of marketing material to appeal to potential clients.

Impression management theory predicts that audit firms will enhance desirable aspects of the firm or obfuscate undesirable aspects (Gioia, Schultz, and Corley 2000) in their audit proposals in order to shape potential audit clients' perceptions in favor of the firm. In contrast, audit professionalism encourages auditors to serve a higher social

function and embrace the values of objectivity and independence (Suddaby et al. 2009). However, auditors' commercial interests may drive them to focus on building relationships with clients (e.g., Wyatt 2004; Gendron, Suddaby, and Lam 2006). Therefore, CPA firms may deliver "blended" messages in audit proposals, which reflect both their professional and commercial values. For the following reasons, this study predicts that auditors' commercial considerations will influence their proposal language more than do their professional values. First, the purpose of audit proposals is to attract potential audit clients. Thus, it is likely that audit firms will include desirable attributes in proposals that increase their attractiveness of potential clients. Second, auditors have financial incentives (i.e., maximizing profit) to meet clients' expectations or desirability (e.g., Zeff 2003). Responding to clients' relationship preferences, audit firms are likely to take a relational approach and to build a cooperative, trusting, and long-term relationship with their potential clients. Hence, the first hypothesis:

***H1:** Audit firms are more likely to project a persona reflecting relationship marketing images than a persona of an independent auditor in their audit proposals.*

To further understand what drives auditor impression management, the next sections propose two factors, characteristics of the procurement practice and audit firm size, which can affect auditor image management strategies and language usage in audit proposals.

### **2.3.1. Management Influence over Auditor Selection in Government Audits**

The U.S. Office of Management and Budget (OMB), which oversees the administration of the federal budget and the effectiveness of agency programs, requires funded entities expending \$500,000 or more in federal awards to comply with the audit

and internal control requirements of Circular A-133 (OMB 2003). These non-federal entities must be audited by a public accountant or a Federal, State or Local government audit organization, which meets the general standards specified in generally accepted government auditing standards (GAGAS). Although the audit and internal control requirements of Circular A-133 are uniform across the U.S. states, considerable diversity exists in audit procurement policies, regulations, and procedures across states. For example, a survey conducted by the National Association of State Auditors, Comptrollers and Treasurers (NASACT 2012) reports that the state audit agency serves as the primary auditor of the basic financial statements in 34 states and the single audits in 13 states. CPA firms conduct 100 percent of the basic financial statement audits in 11 states and the single audits in 10 states. In most cases, the single audits are conducted jointly by state auditors and CPA firms. In addition, in the states where audits are conducted by external auditors, state audit agencies and/or audited entities contract with CPA firms for audits. That is, in some states, state audit agencies are fully responsible for initiating a RFP process and selecting external auditors for hiring governmental entities; however, in other states, state audit agencies and management from audited entities jointly select auditors<sup>4</sup>.

From reading RFPs documents and talking with personnel from the state auditor offices, I assume that the role of a state audit agency is similar to that of audit committees

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<sup>4</sup> For example, per discussion with Mr. Giesler, Chief Operating Office at the office of the Auditor of Public Accounts (APA) in Kentucky, the Auditor's office is responsible for initiating a RFP for audit services and evaluating the audit proposals received. The evaluation committee members from the APA office review the technical proposal and award points accordingly. The State Auditor then ranks the proposed firms based on their scores and begins with the top firm to negotiate for audit fees. If negotiation fails, the APA then contacts the firm with the second highest score. However, the review process is different in other states. In Ohio, for instance, the Auditor of State works with audited entities to select external auditors. Specifically, client management from the audited entities can use any methodology that deems to be appropriate to evaluate firms' audit proposals and have the option to award "Client Preference Points" to bidding firms. Members of an evaluation committee from the Auditor of State also review and grade firms' proposals. The selection of the auditor is based on the combined scores from the committee and the client management.

in the profit sector for two reasons. First, state audit agencies are independent of the hiring governmental entities (i.e., audit clients) and thus should exercise their independent judgment diligently. Second, the individuals involved in a RFP evaluation process are usually the audit professionals in the state audit agencies. In most cases, these individuals are experts with experiences in preparing, auditing, analyzing and evaluating financial statements. In short, like audit committees in the private sector, state audit agencies should act as a mechanism for improving auditor independence in the public sector. However, there is little evidence supporting the claim that audit committees eliminate threats to auditor independence.

Little auditing research discusses how client management influences auditor selection decisions in the public sector. Wilson and Stewart (1990) found that the quality of municipal financial reporting is positively associated with the level of underwriter competition in the primary market for new issues of general obligation bonds. Their findings suggest that government clients have incentives to employ an independent CPA firm auditor to signal the credibility of their financial information, which in turn increases competition for bond issues and reduces borrowing costs (e.g., West 1967; Kessel 1971). On the other hand, auditing research related to private sector clients often suggests that management influence over auditor appointments negatively affect auditor independence (e.g., Carcello and Neal 2000, 2003). However, there is no substantial evidence indicating how CPA firms would present themselves (i.e., less or more independent) when client management is involved in a RFP process.

Fiolleau et al. (2013) suggest that auditors in a RFP process strategically present information that responds to the decision makers' needs and preferences. As a state audit

agency and client management are likely to play a different role in a government audit and thus may have different preferences, I predict that, in response to the variations in each state's evaluation procedures, CPA firms will strategically create different personae in their proposals. I state my second hypothesis non-directionally as follows:

*H2: Audit firms will strategically project different personae in their audit proposals based on the composition of the evaluators in the hiring process.*

### **2.3.2. Audit Firm Size**

Client importance to audit firms is a potential threat to auditor independence (Tepalagul and Lin 2015). When an audit firm economically depends on a client, the threat of losing the client would mitigate the auditor's responsiveness to penalties for compromising independence (Falk, Lynn, Mestelman, and Shehata 1999). In other words, when receiving compensation that constitutes a significant part of service revenues to the auditor, the auditor is financially bonded to the client and thus has an incentive to maintain a good client relationship. To warrant future profits, the auditor may compromise independence and act in favor of the client to the detriment of the public interest (Blay 2005). Hence, client importance (i.e., as a percentage of total revenues) may be negatively associated with auditor independence.

However, audit firm size and reputation may moderate the impact of client importance. While holding the client size constant, the proportion of future profits generated from a client is less significant to a larger firm than to a smaller one. As DeAngelo (1981) suggests, perceived auditor independence is positively related to audit firm size as larger audit firms have a lower percentage of total audit fees dependent on any one client. In addition, auditor reputation is an important intangible asset that is

developed and maintained through effortful management of a firm's public image. Many studies assume larger auditors have more valuable reputations (e.g., DeAngelo 1981; Barton 2005) and support that auditor independence is positively associated with auditor reputation. They argue that building a brand name and reputation is costly and that auditors with established reputations have more to lose from misrepresentation. Consequently, reputable auditors have a stronger incentive to self-represent as objective, independent auditors. The arguments above suggest that large, reputable audit firms have stronger incentives to maintain their professional, independent image than do small firms.

On the other hand, competition in the audit market have forced audit firms to consider marketing and branding strategies (e.g., Reid 2008; Jaworski, Kohli, and Sahay 2000). Studies find that market activities are increasing in the audit industry (e.g., Clow, Stevens, McConkey, and Loundon 2009; Hodges and Young 2009; Broberg, Umans, and Gerlofstig 2013). One explanation is that professional service firms include marketing in their business activities in order to gain a competitive advantage (Hodges and Young 2009). As relationship marketing can be costly (e.g., Cao and Gruca 2005) and large audit firms have more resources than do small firms, I speculate that large audit firms, compared to small audit firms, are more likely to engage in relationship marketing in a bidding process. That is, they are more likely to project a persona of a cooperative and trustworthy service provider in their audit proposals. Based on the arguments above, it is unclear how audit firm size would affect auditor impression management. Therefore, the third hypothesis is non-directional.

***H3: Audit firm size will affect auditor impression management in audit proposals.***

The next section discusses the sample and data collection, the study method, and the measurement of variables used to test the hypotheses.

## **2.4. Data and Method**

### **2.4.1. Sample and Data Collection**

The sample is constructed using a set of audit proposals submitted by CPA firms in a governmental RFP process. A typical audit proposal consists of transmittal letter, firm background and qualifications, staff information and experience, and audit plan. The primary targeted data sources are the government agencies who maintain a central depository for documents related to RFP's for financial and/or single audit services. I obtained a complete list of those agencies from the National Association of State Auditors, Comptrollers and Treasurers (NASACT). The NASACT is an organization consisting of 56 audit agencies<sup>5</sup> that are comprised of state officials who have been elected or appointed to the Office of State Auditor, State Comptroller, or State Treasurer to deal with the financial management of state government in the 50 states, the District of Columbia, and U.S. territories. Requests to the 50 audit agencies for the public records related to audit RFPs were made via email, websites, and phone calls. In response to the open record requests, the audit agencies of 20 states<sup>6</sup> provided documents related to 2008-2013 audits contracted to CPA firms, including RFP's, audit proposals, and

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<sup>5</sup> Three states have more than one audit agency, i.e., Minnesota, New Jersey, and South Carolina.

<sup>6</sup> Twenty states include CO, FL, HA, IL, IN, KS, KY, MI, MO, NC, ND, NH, NJ, NY, OH, OK, TX, VA, VT, and WY. The remaining states either do not maintain a central depository for the documents requested or do not contract out governmental audits to CPA firms.

contracts. The current sample<sup>7</sup> includes 133 CPA firms, who submitted 378 audit proposals, on 123 engagements from 15 U.S. states<sup>8</sup>.

## **2.4.2. Linguistic Methods**

Accounting and finance research increasingly employs linguistic methods in analyzing accounting- or finance-related textual documents. For instance, a stream of research analyzes linguistic cues to study in corporate annual reports and financial disclosures (Li 2006; Loughran and McDonald 2014), earnings press releases (Demers and Vega 2011), firm-specific financial news stories (Tetlock, Saar-Tsechansky, and MacSkassy 2008), transcripts of quarterly earnings conference call (Larcker and Zakolyukina 2012), and online client reviews of tax preparers (Witherspoon and Stone 2014). These studies differ in terms of the selection of the linguistic features and the techniques used to extract those cues. This paper uses a text analysis application, Linguistic Inquiry and Word Count, or LIWC<sup>9</sup>, to content analyze audit proposals (i.e., capture the occurrences of the words related to the image attributes of interest). The next section addresses the development of word categories in this study.

### **2.4.2.1. Dictionary Development**

This study utilizes LIWC to capture and count the occurrences of the words related to the constructs of interest (i.e., the image attributes in audit proposals). Although LIWC has well-developed word lists (e.g., positive and negative emotions words,

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<sup>7</sup> Based on a G\*Power omnibus multiple regression power analysis, a priori statistical power of the studies are adequate (>90%), given medium effect size and the number of the predictors in each study at an alpha value of 0.05 (i.e., Type I error rate).

<sup>8</sup> Data from five states (i.e., FL, HA, MO, NY, and TX) is omitted due to incomplete data.

<sup>9</sup> LIWC is an application for studying various emotional, cognitive, and structural components present in individuals' verbal and written speech samples. The LIWC application relies on an internal default psychosocial dictionary that defines which words should be counted in the target text files (Pennebaker et al., 2007). There are three versions of this application: LIWC, LIWC2001, and LIWC2007. This study uses LIWC2007, the most recent evolution as of the date of the study. Hereafter in this paper, I refer LIWC2007 to as LIWC.



cognitive words, pronouns, certainty and tentative words, etc.), its internal default dictionary does not capture or measure the constructs in the current study. Therefore, for each linguistic attribute listed in Table 2.1, I created a list of words (i.e., dictionary) within LIWC by adapting the method of Larcker and Zakolyukina (2012), Li (2006), Loughran, McDonald, and Yun (2009), and Witherspoon and Stone (2013) to the present data set. Specifically, I randomly sampled five proposals from different CPA firms to generate sets of words for each image attribute identified in the previous section. Next, I developed category word lists for references to these attributes by adding synonyms<sup>10</sup> to the corresponding categories. Following Pennebaker et al.'s (2007) procedures, external judges validated the dictionaries. Accounting professionals were recruited as independent judges to review the preliminary category word lists. They completed a survey instrument including two tasks, which asks them to make decisions about an inclusion or exclusion of a word in each dictionary word list<sup>11</sup>. Table 2.2 lists the attributes (word categories), words included in each category, and reliability statistics for each category. To validate the reliability of the constructed word categories, I calculated the correlations between the occurrences of each word in a category with the sum of the other words in the same category (Pennebaker et al. 2007). Explanations for the reported low reliability statistics are that (1) the uncorrected method used to calculate raw alpha tends to underestimate reliability and (2) in terms of the nature of discourse, once people say something, they usually do not repeat it in the same paragraph or essay but move to the next topic (Pennebaker et al. 2007). Hence, this is unlike validity tests of standardized, psychological instruments.

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<sup>10</sup> Thesaurus. 2014. Accessed September 2. <http://www.thesaurus.com>

<sup>11</sup> See Appendix A for a detailed description of the survey instrument and the task procedures.

< Insert Table 2.2 here >

#### **2.4.2.2. Procedures**

The audit proposals received are in different forms including hard copies, readable PDF, and image-only PDF. In order to run content analysis, several assistants and I performed the following tasks. First, I converted each proposal to a text file. Second, an assistant followed instructions to remove irrelevant text and standard languages copied from the RFP's, such as standard contract provisions and contract certifications. Third, the assistants reviewed the remaining texts to remove misspellings and manually fixed errors that occurred in the converting process (i.e., unrecognizable words). Lastly, after reviewing the assistants' work, I imported the files to LIWC and processed the texts with the developed dictionary (see Table 2.2) to calculate the percentage of the words related to the attributes. Similar to related studies (e.g., Li 2006; Larcker and Zakolyukina 2012), this study ignores context and considers the position of a word in a sentence irrelevant for classification (i.e., a bag-of-words approach). The next section specifies the models and the definitions of the variables.

#### **2.4.3. Mixed-Effect Models**

This study employs a mixed effect model to examine whether management influence over auditor selection and audit firm size affect personae that CPA firms project in audit proposals. The mixed effect model is appropriate to fit the data in the current study because the audit proposal dataset has a hierarchical design structure (i.e., nested data) in which audit proposals are nested within engagements that are nested within states. Due to the nested data structure, I assumed a relationship among engagements such that an audit procurement process of a state is similar to others in the

same state. Likewise, because a CPA firm can submit a proposal to more than one engagement in one or different states, I assumed co-dependence between the audit proposals and submitting firms. That is, audit proposals submitted by a CPA firm (i.e., within firm) should share more attributes than those submitted by other CPA firms (i.e., between firms). Those relationships among the observations are referred to as random effects. I employed a mixed effect model to estimate the parameters as it is appropriate for nested designs (Fidell and Tabachnick 2007; Schielzeth and Nakagawa 2013) and can account for both fixed and random effects<sup>12</sup> in the current study model. The dependent variables are predicted by the fixed effects specified in the model as well as the random (nested) effects of Engagement within State, State, and CPA firm. Specifically, I regressed four dependent variables separately on several fixed-effect variables including indicators for management influence (*MgtInf*) and for Top 100 CPA firm (*Top100*) and the natural logarithm of proposed audit fee (*Fees*), proposal word count (*WC*), and engagement size (*EngSize*); as well as on random-effect variables including the nested effect of engagement within State (*EngRC(StateRC)*), State (*StateRC*), and CPA firm (*FirmRC*).

The dependent variables (DVs), *IMAGE*, refer to four CPA firms' image attributes including Independence (*INDP*), Cooperation (*COP*), Trustworthy (*Trust*), and Client Satisfaction (*CS*). The DVs are four linguistic variables: *INDP* refers to auditors' integrity and objectivity; *COP* indicates auditors' willingness to cooperatively work with clients; *Trust* measures auditors' reliability; and *CS* includes four service qualities

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<sup>12</sup> Gelman (2005, p. 21) defines effects as fixed in a multilevel model "if they are identical for all groups in a population" and as random "if they are allowed to differ from group to group". In other words, fixed effects assume that observations are independent while random effects assume dependent relations among observations.

(responsiveness, empathy, value, and effectiveness). Table 2.1. provides the detailed definitions of the DVs. I operationalized the DVs by adopting Pennebaker et al.'s (2007) approach to calculate the percentage of the words related to these image attributes. The first independent variable (IV) of interest, *MgtInf*, is an indicator of whether client management has an influence on the auditor choice in a governmental RFP process. The second IV of interest, *Top100*, measuring audit firm size, indicates whether an audit firm is listed as a Top100 CPA firm by *Accounting Today*. Three variables are included as control variables in the model<sup>13</sup>. As engagement size and audit fees can directly affect auditors' commercial interests in bidding a job, I controlled for the size of engagement (*EngSize*) and proposed audit fees (*Fee*), which were measured as the auditee's operating expenditures in a prior year and estimated service fees proposed in the audit proposals, respectively. In addition, I included the word count (*WC*) of audit proposals as a control variable because the length of proposals correlates with the linguistic-based DVs. As for the random-effect variables, I used the *EngRC*, *StateRC*, and *FirmRC* variables instead of the original string variables in the data set. Those 'RC' variables contain the same information as the original ones; they were simply recoded as nominal scaled variables so that the output will be easier to be interpreted. The model is as follows.

$$IMAGE_{ijk} = \beta_0 + \beta_1 * MgtInf_i + \beta_2 * Top100_k + \beta_3 * Fee_{ijk} + \beta_4 * EngSize_{ij} + \beta_5 * WC_{ijk} + \\ random\ effects + \varepsilon$$

where for state i, engagement j, and firm k:

*IMAGE* = A vector of four variables, which are simple counts of the words related to Independence, Cooperation, Trustworthy, and Client Satisfaction divided by the number of words in the proposal ignoring articles (wc);

<sup>13</sup> Because the control variables are not normally distributed, the variables are transformed by taking logarithms of the raw values before entering into the models.

- MgtInf* = 1 if client management helps to select the auditor, and 0 otherwise;  
*Top100* = 1 if the audit firm is listed as a Top100 CPA firm by *Accounting Today*, and 0 otherwise;  
*Fee* = Natural logarithm of proposed audit fee;  
*EngSize* = Natural logarithm of audittee's operating expense/expenditures; and  
*WC* = Natural logarithm of word count in a text file of an audit proposal.

## 2.5. Results

Descriptive statistics and correlations among the variables are presented below, followed by the main results of hypothesis testing.

### 2.5.1. Descriptive Statistics

The sample includes 378 audit proposals from 133 CPA firms, which were submitted to 123 engagements. Table 2.3 demonstrates the composition of the sample by states. The majority of the engagements (i.e., 80% of the 123 engagements) in the sample are from five states<sup>14</sup> including Colorado (19), Illinois (19), Kentucky (40), North Carolina (9), and Ohio (12). The majority of the audit proposals (i.e., 87% of the 378 audit proposals) are from seven states (Colorado, Illinois, Kentucky, North Carolina, Ohio, Oklahoma, and Virginia). On average, each engagement received three audit proposals. The proposals in the sample are from 133 CPA firms, of which 32 firms are listed as Top100 CPA firms by *Accounting Today* during the period from 2009 to 2012. About 183 (48%) of the proposals were submitted by Top100 CPA firms; of which 24 (13%) were from the Big 4 accounting firms.

< Insert Table 2.3 here >

<sup>14</sup> A MANOVA indicates that these five states do not differ from the 45 states in terms of the population (F=.729, p=.397), Ranny's political competition Index (F=.355, p=.554), tax revenue (F=.305, p=.583), state revenue per capital (F=.949, p=.335), long-term public debt (F=.013, p=.911), number of state and local employees (F=1.110, p=.297), general expenditure (F=.288, p=.594), spending from state and federal funds as a percent of state personal income (F=1.019, p=.318), and state economic freedom scores (F=.143, p=.707) during the sampled years.

Table 2.4 reconciles the samples that were used in the primary analyses. Eight proposals were removed from the analyses because they were submitted for a non-financial statement audit engagement. The remaining 370 proposals are related either basic financial statement audits or single audits. In Kentucky, CPA firms are allowed to submit one proposal for multiple engagements. For the 2010 and 2012 audit procurement, the Kentucky Auditors of Public Accounts (APA) contracted for 39 audit engagements. Twenty-five CPA firms responded to the RFPs, and the Kentucky APA received a total of 38 audit proposals because some CPA firms submitted proposals to both RFPs. Within each RFP, each engagement received an average of eight proposals that were also submitted to at least one of other engagements. I removed those 38 KY proposals from the main analysis because most of these proposals were submitted to more than one engagement (range from two to 20 engagements). This multiple-counting of proposals would add noise in the analyses. Lastly, forty-four of the remaining 332 (370-38) proposals do not have the information of proposed audit fees. That results in 288 proposals (332-44) with complete data. The main analyses in the following section used both samples (i.e.,  $n=288$  and  $n=332$ ) to test the hypotheses.

Table 2.5, Panel A reports descriptive statistics on the linguistic-based variables retrieved from the audit proposals ( $n=332$ ) and the control variables. The linguistic-based variables, Independence (*INDP*), Cooperation (*COP*), Trustworthy (*Trust*), and Client Satisfaction (*CS*), are measured based on word percentages, which were calculated by LIWC as a percentage of matched words against the number of all words ignoring articles in a given text file (Pennebaker et al. 2007). Among these variables, the mean values suggest that CPA firms more frequently use words related to client satisfaction, followed

by cooperation, trustworthy, and independence, in their audit proposals. Affective processes (*affect*), positive emotion (*posemo*), and negative emotion (*negemo*) are measured based on the default LIWC word dictionaries. The values of *posemo* are higher than those of *negemo*, which indicates that CPA firms express more positive emotion than negative emotion in their audit proposals. *WC* (word count) measures the total number of words in a given file. The average word count in the sample is 6,679 words. The average proposed audit fee is \$395,955. The range of the proposed fees (*Fees*) is wide: the lowest proposed fee is about \$12,000 and the highest is about \$6.4 million, which suggests high variability in the size and/or the complexity of the engagements in the sample. The percentile measure further indicates that the majority of proposed audit fees are relatively small (i.e., 75% of the sample is below \$260,000). In fact, only 24 proposed engagement fees are above \$1 million. The normality tests (skewness and kurtosis) indicate that several variables are not normally distributed. For example, the distribution of the variable *Fees* is highly skewed (Skewness = 3.91) with heavy tails (Kurtosis = 16.31). In addition, histograms of the variables indicate outliers at the right end of the distributions. Therefore, before modeling, these variables are transformed by winsorizing at the 95% percentile or by taking natural logarithms. Panel B reports the transformed data. The skewness and kurtosis values indicate that the variables are normally distributed after transformation, which are then used in the subsequent analyses. The following panels report with the transformed numbers when they are meaningful in interpretation.

< Insert Table 2.5 here >

Panels C and D present the composition of the sample by type of CPA firm, Top100 (n=183) or non-Top100 (n=149), respectively. The average proposed audit fee is higher in the Top100 CPA sample than that in the non-Top100 CPA sample. It suggests that either Top100 CPA firms charge premium fees or they have more capacity to bid on larger engagements. Except for the variables *INDP* and *negemo*, the mean values of all other variables for Top100 CPA firms are higher than those for non-Top100 CPA firms<sup>15</sup>. Again, the mean value of *INDP* is smaller than that of any other linguistic-based variable in both samples. Panels E and F represent the composition of the sample by an indicator of management involvement in an auditor selection process (i.e., Yes or No). The average proposed audit fee is higher in the management involvement subsample than that in the non-management involvement subsample. With respect to the linguistic variables, the management involvement sample has a higher mean value in *INDP* but lower in *COP*, *Trust*, and *CS* as compared to the non-management sample. In addition, the engagements in the management involvement sample are averagely smaller than those in the non-management sample.

Table 2.6 reports correlations of the transformed and binary variables. *MgtInf* is significantly positively correlated with *INDP* and *Fees* but negatively correlated with *Top100*, *COP*, *Trust*, *CS*, and *EngSize*. These results suggest that there are more small CPA firms bidding for governmental audit jobs in the states where client management is involved in the audit procurement process, compared to the states where independent audit agencies select auditors. A possible explanation is that the audit engagements contracted out in the states where client management help to select auditors are

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<sup>15</sup> An untabulated T-test analysis also shows that the mean values of *COP*, *Trust*, *CS*, and *Fees* differ between the larger and smaller CPA firm subsamples ( $p < .001$ ).



significantly smaller than those in the states where client management is not involved in the RFP process ( $t=2.62$ ;  $p<0.01$ ). Top100 CPA firms may be less interested in small engagements, perhaps because they generate little profit. In addition, when management is involved in selecting auditors, CPA firms are more likely to present themselves as independent auditors and less likely to employ relationship marketing approaches in their audit proposals. The variable *Top100* positively correlates with *COP*, *Trust*, *CS*, *Fees*, and *EngSize*. An explanation of the positive correlations among *Top100*, *Fees*, and *EngSize* is that large CPA firms are more likely to bid on large engagements and thus propose higher audit fees than do smaller firms. Consistent with the results of a meta-analysis of audit fee determinants (Hay 2013), the positive correlation between *Fees* and *EngSize* indicates that auditors charge more fees for larger, complex engagements. Collinearity diagnostics indicate that there is no multicollinearity among the IVs of *Top100*, *MgtInf*, *Fees*, *EngSize*, and *WC* (i.e.,  $VIF<2.5$  in all tests). Among the linguistic variables, the correlations of the three RM measures are significant ( $p < 0.01$ ). Interestingly, *INDP* is positively correlated with *Trust* and *CS*, but not with *COP*.

< Insert Table 2.6 here >

### 2.5.2. Tests of Hypotheses

H1 predicts that audit firms will more frequently use words related to relationship marketing images (i.e., cooperation, trustworthy, client satisfaction) than those related to independence in their proposals. I ran a paired sample t-test to examine whether there is a significant difference between the average values of those image attributes. Specifically, I compared the mean of *INDP* to that of *COP*, *Trust*, and *CS*, respectively. Table 2.7 Panel A (n=332) reports the results of the paired samples tests, which indicate that the mean

value of *INDP* is significantly different (i.e., smaller) than that of *COP* ( $t=-18.99$ ), *Trust* ( $t=-15.57$ ), and *CS* ( $t=-43.72$ )<sup>16</sup>. In addition, an untabulated one-way ANOVA contrast test (planned comparisons) shows that the mean value of *INDP* is significantly different from that of *COP*, *Trust*, and *CS* ( $t=45.08$ ;  $p<0.01$ ). The result holds for the sample with the 288 observations as reported in Panel B. Therefore, H1 is supported.

< Insert Table 2.7 here >

H2 predicts that audit firms will strategically project different personae in their audit proposals in response to a different composition of evaluators in the hiring process. I used mixed effect models to test the hypothesis. The analysis results of the sample of 288 and 332 are almost identical because the missing data (i.e., missing-at-random) carries no effect in mixed models (Howell 2012). Table 2.8 reports the statistical results for the original dataset ( $n=332$  with missing data) and an imputed dataset ( $n=332$  with imputed fee data). Assuming the missing values are missing at random, I utilized Multiple Imputation (MI) to generate imputed data for the missing fee values. MI is a statistical technique that replaces each missing value with a set of plausible values that represent the uncertainty about the right value to impute (Rubin 1987). Five stimulated complete datasets (imputation =5) were generated and combined to produce pooled estimates as reported here. Table 2.8, Panel A reports the parameter estimates for the fixed effects in the linear mixed models. Column (a) reports a significant result for management influence (coefficient = 0.06;  $p = 0.034$ ), which suggests that CPA firms use words related to auditor independence in their audit proposals more frequently when client management is involved in hiring auditors, compared to when an independent state audit agency selects an auditor. Column (b) shows that the results hold for the imputed

<sup>16</sup> With or without winsorization, the results are consistent. The data reported in Table 2.7 are winsorized.

sample (MgtInf: coefficient = 2.50;  $p = 0.012$ ). The results support H2 by indicating that when management is involved in selecting an auditor in a public audit, CPA firms are more likely to highlight an image of independent auditors in their audit proposals, as compared to when an independent state agency selects the auditor.

< Insert Table 2.8 here >

H3 predicts that large and small firms will differ in their impression management in audit proposals. Similar to H2, H3 is tested using the original and imputed sample. Based on the results on Table 2.8, Columns (a) and (b), there is no evidence that larger CPA firms highlight auditor independence in audit proposals more, or less, than do smaller firms. Columns (c) to (h) report the estimated association between the relationship marketing measures and firm size. In the original dataset, firm size is positively associated with the relationship marketing measures: *COP* (coefficient = 0.10;  $p < 0.01$ ), *Trust* (coefficient = 0.10;  $p < 0.01$ ), and *CS* (coefficient = 0.47;  $p < 0.01$ ), as shown in Column (c), (e), and (g), respectively. The positive associations are consistent with the correlations reported in Table 2.6. The results suggest that Top100 CPA firms use words related to the constructs of cooperation, trustworthy, and client satisfaction more frequently in their proposals than do smaller firms. In other words, larger firms engage in more relationship marketing strategies than do smaller firms. The results hold for the imputed dataset as reported in Column (d), (f), and (h). Therefore, H3 is supported. It is noteworthy that *Fees*, with or without imputed data, do not have an effect on the DVs.

Panel B in Table 2.8 reports the parameter estimated for the random effects in the linear mixed models. The total variance estimate for each model is the sum of the estimates in each column. An  $R^2$  type of effect size used to gauge the importance of each

random effect can be calculated by dividing each random effect's variance estimate by the total variance estimate to arrive at a proportion of variance explained or accounted for by each random effect. For example, I found that in Model 1 (Column (a)) the nested effect of *StateRC* is 0.11 ( $=0.001/0.009$ ), which means that the random nested effect accounts for 11% of the variance of the random effects. On the other hand, the random effect for *FirmRC* accounts for 66.67% ( $0.006/0.009$ ) of the variance of the random effects. Although the random effects for *EngRC(StateRC)* and *StateRC* do not account for significant variance and can be eliminated from the models, I kept them in the model since the AIC or BIC value does not improve (i.e., become smaller) after removing these two random effects<sup>17</sup>. Across the different models, *FirmRC* accounts for the most of the variance of the random effects.

### 2.5.3. Supplemental Analysis

I ran a standard general linear model (GLM) for each dependent variable on the variables of *MgtInf*, *Top100*, *Fees*, *EngSize*, *WC*, and *FirmRC*<sup>18</sup>. The untabulated results from the GLMs are consistent with those reported in the prior sections. The association between *INDP* and *MgtInf* is significant at the 0.01 level (coefficient = 0.07,  $t = 3.891$ ), and a  $R^2$  of 76.8% indicates a well model fit. *Top100* is significantly associated with the RM measures (the coefficient on COP is 0.16 with a t-statistic of 2.192, on Trust is 0.205 with a t-statistic of 3.151, and on CS is 0.553 with a t-statistic of 2.417). The  $R^2$  for the COP, Trust, and CS models are 76.1%, 70.2%, and 82.8%, respectively. In addition, a

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<sup>17</sup> The models reported here and in Table 2.8 have the lowest values in Akaike's Information Criterion (AIC) and Schwarz's Bayesian Criterion (BIC). AIC and BIC are measures of the relative quality of a statistical model for a given set of data (Dziak, Coffman, Lanza, and Li 2012). They are used as criteria for selecting among nested models: the lower the number, the better the model fits the data.

<sup>18</sup> *FirmRC* is included in the models because it accounts for the most of the variance of the random effects as indicated in Table 2.8 Panel B.

multivariate analysis<sup>19</sup> (MANOVA) reports a significant multivariate effect ( $p < 0.01$ ) for the combined dependent variables in respect of *MgtInf* and *Top100CPA* ( $F = 10.882$  and  $32.878$ , respectively).

In the Top100 CPA firm group, 24 out of 183 proposals (approx. 13%) are from Big 4 accounting firms. To test whether the results for H3 are driven by the Big4 firms, I performed two additional tests using mixed effect models. First, I removed the Big4 observations and re-ran the models ( $n = 308$ ), the results hold. The coefficient on *COP* is 0.10 with a t-statistic of 3.312, on *Trust* is 0.10 with a t-statistic of 3.543, and on *CS* is 0.47 with a t-statistic of 4.408. In the second test, I replaced the indicator *Top100* with an indicator *Big4*, which equals to one when an auditor is a Big4. The results indicate that *Big4* does not significantly predict the dependent variables ( $p > 0.05$ ). The additional analysis shows that the results were not driven by the Big4 accounting firms.

As mentioned earlier in the sample selection section, I removed 38 proposals from the primary analyses because they were submitted to multiple engagements and thus may introduce noise. In the following untabulated supplemental tests, I included those proposals in the sample ( $n = 370$ ) and ran the analyses to test my hypotheses. First, paired samples tests indicate that the mean value of *INDP* is significantly different from that of *COP* ( $t = -15.68$ ;  $p < 0.01$ ), *Trust* ( $t = -11.35$ ;  $p < 0.01$ ), and *CS* ( $t = -41.13$ ;  $p < 0.01$ ), which are consistent with the result from a one-way ANOVA contrast test ( $t = 41.53$ ;  $p < 0.01$ ). The supplemental results also support H1. Second, results from mixed effect models indicate that *Top100* is positively associated with the relationship marketing measures and thus support H3: *COP* (coefficient = 0.09;  $p < 0.01$ ), *Trust* (coefficient = 0.09;  $p < 0.01$ ),

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<sup>19</sup> In the multivariate test, the dependent variables include *INDP*, *COP*, *Trust*, and *CS*; the predictors include *MgtInf*, *Top100*, *Fees*, *EngSize*, and *WC*.

and *CS* coefficient = 0.45;  $p < 0.01$ ). However, the mixed model results do not show a significant positive association between *INDP* and *MgtInf* (coefficient = 0.04;  $p = 0.311$ ). A possible reason is that all of the 38 proposals are in the non-management involvement group; the inclusion of those proposals in the sample increases the proportion of the non-management involvement group (i.e., to 75%) and consequently distorts the results.

## **2.6. Discussion, Limitations, and Summary**

This study examines auditors' marketing communications and impression management strategies by investigating audit proposals and finds that CPA firms project certain desirable images to their clients. Specifically, the firms highlight an image of a cooperative, trustworthy service provider over an image of independent, objective auditor in their proposals. The study results are consistent with prior findings. Zeff (2003) suggests that auditors, while driven by their financial incentives, commit to meet clients' desirability and preference; Fontaine and Pilote (2012) find that audit clients prefer a cooperative, trusting, and long-term relationship with their auditors. In addition, auditors' inherent self-serving biases, as suggested by Bazerman et al. (1997), can explain why auditor independence can be vulnerable in a contracting process with a client. Importantly, the study responds to a recent concern raised by the PCAOB about audit firms' marketing materials (PCAOB 2013). The board argues that a firm, while driven by its commercial considerations, could use marketing language that is at odds with audit quality and independence. Although the current study does not provide direct evidence linking a firm's marketing strategies with an actual impairment of auditor independence, the findings indicate that CPA firms' audit proposals contain extensive marketing language, which may not support or advance auditor independence in appearance.

The study also investigates whether client management's influence on auditor selection affects a CPA firm's impression management strategies in a RFP process. The degree of client management's involvement in an audit procurement process varies from state to state: in some states, the client management can weigh in during the evaluation process of selecting an external auditor, but in others, they do not. Consistent with Fiolleau's et al. (2013) findings, this study suggest that auditors in a RFP process strategically project different personae that respond to the decision makers' needs and preferences. The results indicate that CPA firms portray more independence in the proposals when management is involved in a selection process, as compared to when an independent state agency is responsible to select the auditor. One possible explanation is that managerial influence over auditor selection is believed to affect auditor independence negatively (e.g., Carcello and Neal 2000, 2003); as a result, the issue of auditor independence would attract more attention in a RFP process when client management is involved in auditor selection decisions than when client management is not. Consequently, to eliminate the concern about an impairment of auditor independence, CPA firms are likely to emphasize the value of objectivity and portray more independence in their proposals.

In addition, as mentioned earlier, Wilson and Stewart (1990) provide an alternative explanation of why a governmental auditee is incentivized to demand independent auditors and a high quality audit. They find that employment of an independent CPA firm auditor and the quality of municipal financial information are positively associated with increased competition in the primary market for new issues of general obligation bonds. This explanation seems possible because over 50% of the

government entities in this study sample issue municipal bonds, and the correlation between bond issuance and client management involvement is significantly positive (coefficient=0.16;  $p<0.01$ ).

Lastly, prior research suggests that increasing competition in the audit market provokes audit firms to adopt a marketing orientation and finds that audit firms undertake more market activities in the past decades (e.g., Broberg, Umans, and Gerlofstig 2013). This study further discovers that larger CPA firms engage in more relationship marketing strategies while communicating with a potential client than do smaller firms. In fact, the Big 4 audit firms spend significant resources in building and maintaining relationships with their clients (Dhaliwal, Lamoreaux, Lennox, and Mauler 2014). The findings imply that commercial considerations could drive CPA firms' impression management and jeopardize perceived independence of CPA firms in a contracting process. It raises a concern whether those firms, while pursuing a close relationship with a client, develop an organizational culture emphasizing profit and commercial gain over professional independence and objectivity.

The study findings are subject to a number of limitations. First, an inherent limitation of the linguistic approach (i.e., pure word counting based on customized dictionaries) is that it ignores important context and background knowledge (Larcker and Zakolyukina 2012). For example, simply counting words does not differentiate between several meanings of words with the same appearance in the text or categorize combinations of words or phrases that may imply different meanings from the constituent words. Second, an assumption of the study is that text analysis can capture a particular linguistic feature through a carefully developed dictionary. The dictionaries used in this



study are developed and customized to capture target words related to image attributes. The validity of the dictionaries can be subject to subjectivity if important dimensions are overlooked. It would raise a concern about whether the word categories contain a necessary set of words for business communication in audit proposals. To mitigate this concern, I recruited several accounting professionals from state audit agencies to review and validate the dictionaries used in the study. Third, the linguistic cues used to capture the study constructs are selected based on a review of the audit proposals in the sample. These audit proposals are submitted to governmental clients and thus may contain different information from those used in the private sector, which could limit the study's ability of generalization. In addition, this study examines the audit proposals submitted for government audit engagements in 15 U.S. states. Some states provided more audit proposals than did others. State factors may drive the study results if the information contained in audit proposals is significantly different across states. To address this concern, I tested several characteristics of the in- and out-sample states and found no significant differences across the states. Even though, the study may not generalize to the omitted U.S. states or to the private sector.

In spite of the limitations discussed above, the study contributes to the literature by creating a unique dataset of audit proposals and by developing and validating linguistic categories that capture auditor independence and relationship marketing language. The study also has important implications for regulators and practitioners. Responding to the PCAOB's (2013) concern about CPA firms' marketing materials, the study examines the content of audit proposals for auditors' marketing language and suggests that firms' impression management strategies may be at odds with auditor

independence. The findings provide insight into why a firm's assurance marketing materials should be monitored for its marketing language.

Table 2.1: Summary of Attributes

Attributes	Definition	Source
Independence	The state of mind that allows an auditor to "act with integrity and exercise objectivity and professional skepticism."	AICPA ET section 100-01
Cooperation	Auditors' willingness to assist and mutually interact with clients to reach a common goal.	Fontaine and Pilote (2012); Pinto and Pinto (1990)
Trustworthy	Auditors are reliable and willing to develop a long-term relationship with clients.	Fontaine and Pilote (2012); Rennie, Kopp, and Lemon (2010); Morgan and Hunt (1994)
Client Satisfaction	<p>Client Satisfaction includes four dimensions: Responsiveness, Empathy (understanding), Value, and Effectiveness. The definition of each dimension is listed below.</p> <ul style="list-style-type: none"> <li>• Responsiveness: auditors' ability to react and tailor their service to client needs;</li> <li>• Empathy: the degree of auditors' understanding of the client's business challenges;</li> <li>• Value: auditors' ability to provide value-added services beyond the required audit;</li> <li>• Effectiveness: auditors' ability and commitment to complete the audit by indicated deadline</li> </ul>	Fontaine and Pilote (2012); Duff (2004, 2009); Payne and Jensen (2002); Carcello et al. (1992)

Table 2.2: Constructed Word Categories and Validity Statistics

Category	Abbreviation	List of words*	Alpha reliability (Binary/raw)**
Independence	INDP	ethical; ethics; impartial; impartiality; independence; independent; neutral; neutrality; objective; objectivity; unbiased.	0.483/0.13
Cooperation	COP	assist; assistance; collaborate; collaboration; communicate; communicating; communication; cooperate; cooperated; cooperation; cooperative; cooperatively; coordinate; coordination; open; partner; partnering; teamwork; work-as-a-team; work-together.	0.649/0.1
Trustworthy	Trust	accountability; commit; commitment; committed; confidence; confident; confidential; confidentiality; fair; fairly; fairness; honest; honestly; honesty; promise; promising; relation; relationship; relationships; reliability; reliable; trust; trusted; trustful; trusting; trustworthy.	0.684/0.308
Client Satisfaction	CS	accommodating; advice; advise; advisory; beneficial; benefit; consult; consultancy; consultant; consultation; consulting; counsel; effective; effectively; effectiveness; efficacy; empathy, enthusiasm; guidance; improve; improvement; need; needs; recommend; recommendation; responsive; responsiveness; satisfaction; satisfied; satisfy; serve; service; services; tailored; time; timeline; timely; timing; understanding; valuable; value.	0.823/0.678

Table 2.2 presents definitions of the linguistic-based variables that I use to estimate linear mixed models for auditor image attributes. This table provides the words listed for each category.

\* See the development of the word lists in Appendix A.

\*\* As suggested by the LIWC2007 Manual, the alpha reliability is calculated based on the binary and uncorrected methods. The binary method converts the usage of each of the single words within a given text into either a 0 (not used) or a 1 (used one or more times). The uncorrected method is based on the percentage of total words that each of the category words is used.

Table 2.3: Sample of Audit Proposals by States

State	Number of engagements	Number of audit proposals (Top100)	Number of CPA firms (Top100)
Colorado	19	82 (62)	17 (10)
Illinois	19	56 (32)	20 (9)
Indiana	2	10 (2)	10 (2)
Kansas	4	14 (9)	7 (5)
Kentucky*	40	40 (6)	27 (1)
Michigan	1	7 (3)	7 (3)
North Carolina	9	42 (30)	18 (11)
North Dakota	2	4 (4)	2 (2)
New Hampshire	1	2 (2)	2 (2)
New Jersey	2	6 (2)	6 (2)
Ohio	12	57 (5)	19 (4)
Oklahoma	4	20 (6)	11 (4)
Vermont	2	5 (3)	5 (3)
Virginia	5	31 (16)	15 (7)
Wyoming	1	2 (1)	2 (1)
<b>TOTAL</b>	<b>123</b>	<b>378 (183)</b>	<b>133**(32)</b>

\*In Kentucky, CPA firms are allowed to submit one proposal for multiple engagements. For the 2010 and 2012 audit procurement, the Kentucky Auditors of Public Accounts contracted out the audits for 40 counties. Each engagement received an average of eight proposals that were also submitted to other engagements.

\*\* There are 133 CPA firms in the sample. The column total is greater than 133 because some CPA firms participate in governmental audit procurement practices in multiple states.

Table 2.4: Sample Characteristics

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Total audit proposals	<b>378</b>
Real estate audit	<u>( 8)</u>
	<b>370</b>
KY proposals	<u>38</u>
	<b>332</b>
Missing fee data	<u>44</u>
Proposals without missing values	<u><b>288</b></u>

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Table 2.5: Descriptive Statistics for Linguistic and Control Variables<sup>a</sup>

	Mean	Std. Dev	Min	Max	25th	50th	75th	Skew	Kurtosis
<b>Panel A: Entire Sample (N=332)</b>									
INDP	.17	.10	.00	.54	.09	.16	.23	.73	.51
COP	.37	.18	.00	1.19	.23	.34	.48	.69	.86
Trust	.29	.15	.00	1.05	.20	.28	.38	1.03	2.87
CS	1.56	.61	.45	3.59	1.04	1.51	1.94	.58	-.10
affect	2.78	.73	1.23	5.51	2.31	2.72	3.27	.54	.41
posemo	2.36	.60	1.22	4.51	1.93	2.32	2.73	.65	.53
negemo	.39	.33	.00	2.08	.16	.27	.57	1.60	3.46
Fees	\$395,955	903,048	12,450	6,437,721	50,550	105,443	259,375	3.91	16.31
EngSize	1,187	5,379	.72	55,000	7.89	67.15	492.03	9.23	90.03
WC	6,679	5,570	654	37,664	3,765	5,543	7,285	3.17	12.23
<b>Panel B: Transformation</b>									
INDP_W	.17	.10	.00	.37	.09	.16	.23	.38	-.58
COP_W	.36	.16	.00	.69	.23	.34	.48	.28	-.72
Trust_W	.29	.13	.00	.54	.20	.28	.38	.06	-.46
CS_W	1.55	.59	.45	2.77	1.04	1.51	1.94	.40	-.61
Affect_W	2.76	.69	1.23	4.12	2.31	2.72	3.27	.20	-.59
Posemo_W	2.34	.55	1.22	3.50	1.93	2.32	2.73	.27	-.52
Negmo_W	.37	.27	.00	.96	.16	.27	.57	.74	-.58
Fees_In	11.77	1.33	9.43	15.68	10.83	11.57	12.46	.79	.47
EngSize_In	4.26	2.56	-.33	10.92	2.07	4.21	6.20	.20	-.91
WC_In	8.57	.61	6.48	9.82	8.23	8.62	8.89	-.42	.95
<b>Panel C: Top100 CPA Sample (N=183)</b>									
INDP_W	.17	.09	.00	.37	.09	.16	.22	.63	-.18
COP_W	.43	.15	.09	.69	.30	.44	.54	.01	-.82
Trust_W	.32	.12	.08	.54	.24	.32	.40	.02	-.68
CS_W	1.81	.55	.48	2.77	1.46	1.85	2.11	-.07	-.39
Affect_W	2.90	.69	1.49	4.12	2.40	2.85	3.44	.14	-.85
Posemo_W	2.51	.51	1.33	3.50	2.15	2.48	2.86	.07	-.38
Negmo_W	.36	.27	.03	.96	.16	.24	.55	.94	-.21
Fees	\$555,279	1,124,263	15,700	6,437,721	55,000	149,440	366,640	3.01	9.06
EngSize	\$1,953	7,123	1	55,000	15	396	1,125	6.93	46.99
WC	7,652	6,321	1,141	37,119	4,355	5,900	8,130	2.83	8.48

Table 2.5 (continued)

	Mean	Std. Dev.	Min	Max	25th	50th	75th	Skew	Kurtosis
<b>Panel D: Non-Top100 CPA Sample (N=149)</b>									
INDP_W	0.17	0.11	0.00	0.37	0.07	0.16	0.25	0.18	-0.88
COP_W	0.28	0.14	0.00	0.69	0.18	0.25	0.36	0.79	0.54
Trust_W	0.24	0.13	0.00	0.54	0.17	0.22	0.32	0.30	-0.05
CS_W	1.22	0.44	0.45	2.77	0.94	1.09	1.47	1.11	1.41
Affect_W	2.59	0.64	1.23	4.12	2.08	2.61	3.00	0.20	-0.27
Posemo_W	2.13	0.53	1.22	3.50	1.76	2.07	2.40	0.71	0.14
Negmo_W	0.39	0.28	0.00	0.96	0.16	0.32	0.61	0.53	-0.88
Fees	\$188,197	399,109	12,450	3,680,000	44,300	100,000	174,388	6.61	51.31
EngSize	244.79	816.86	0.72	6,719.17	4.05	20.10	130.22	5.67	35.62
WC	5,483	4,217	654	37,664	3,025	4,812	6,795	3.67	23.16
<b>Panel E: Management Involvement Sample (N=92)</b>									
INDP_W	0.20	0.09	0.00	0.37	0.15	0.19	0.26	-0.05	0.24
COP_W	0.31	0.15	0.00	0.69	0.19	0.26	0.38	0.99	0.58
Trust_W	0.26	0.11	0.00	0.54	0.20	0.24	0.34	-0.13	0.52
CS_W	1.29	0.48	0.61	2.77	0.95	1.15	1.46	1.50	2.16
Affect_W	2.95	0.57	1.85	4.12	2.56	2.86	3.27	0.39	-0.29
Posemo_W	2.29	0.56	1.36	3.50	1.84	2.19	2.58	0.80	-0.09
Negmo_W	0.56	0.27	0.00	0.96	0.33	0.55	0.80	-0.07	-1.09
Fees	\$486,887	1,135,227	14,400	6,437,721	87,900	128,655	272,345	3.79	14.20
EngSize	387	1,112	1.81	5,017	7.89	21.80	130.22	3.60	11.95
WC	7,462	6,761	654	37,664	3,821	6,033	8,140	2.81	8.89
<b>Panel F: Non-Management Involvement Sample (N=240)</b>									
INDP_W	0.15	0.10	0.00	0.37	0.07	0.14	0.21	0.61	-0.41
COP_W	0.38	0.17	0.00	0.69	0.25	0.38	0.51	0.04	-0.75
Trust_W	0.30	0.13	0.00	0.54	0.20	0.30	0.39	0.01	-0.72
CS_W	1.65	0.59	0.45	2.77	1.19	1.70	1.97	0.08	-0.66
Affect_W	2.69	0.71	1.23	4.12	2.13	2.60	3.26	0.27	-0.69
Posemo_W	2.36	0.55	1.22	3.50	1.99	2.36	2.76	0.07	-0.57
Negmo_W	0.30	0.24	0.00	0.96	0.13	0.21	0.44	1.20	0.69
Fees	\$353,951	772,489	12,450	4,737,961	41,950	83,800	257,750	3.55	12.69
EngSize	1,487	6,248	0.72	55,000	5.47	108.40	630.44	7.98	66.24
WC	6,378	5,024	949	37,119	3,691	5,261	6,977	3.28	13.78



Table 2.5 (continued)

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<sup>a</sup> Variable Definitions:

INDP	=	Self-constructed category of independence. For the definition and the complete list of words, see Table 2.1 and 2.2. Simple count of matched words in the category divided by the number of total words ignoring articles in a given proposal.
COP	=	Self-constructed category of cooperation. For the definition and the complete list of words, see Table 2.1 and 2.2. Simple count of matched words in the category divided by the number of total words ignoring articles in a given proposal.
Trust	=	Self-constructed category of trust. For the definition and the complete list of words, see Table 2.1 and 2.2. Simple count of matched words divided in the category by the number of total words ignoring articles in a given proposal.
CS	=	Self-constructed category of client satisfaction. For the definition and the complete list of words, see Table 2.1 and 2.2. Simple count of matched words in the category divided by the number of total words ignoring articles in a given proposal.
affect	=	LIWC default category capturing psychological affective processes. Simple count divided by the number of words ignoring articles.
posemo	=	Positive affect. Simple count divided by the number of words ignoring articles.
negemo	=	Negative affect. Simple count divided by the number of words ignoring articles.
Fees	=	Proposed audit fee per audit proposal.
EngSize	=	Auditee's operating expenses (in millions) in the prior year.
WC	=	Raw number of words per audit proposal
Variable_W	=	Winsorized value of the variable
Variable_In	=	Natural logarithm value of the variable

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Table 2.6: Cross-Correlation Matrix<sup>a</sup>

	MgtInf	Top100	INDP	COP	Trust	CS	Fees	EngSize	WC
MgtInf	1.000	-.494**	.286**	-.228**	-.155**	-.288**	.165**	-.257**	.061
Top100	-.494**	1.000	.029	.486**	.330**	.537**	.161**	.382**	.232**
INDP	.270**	.037	1.000	.095	.272**	.252**	-.005	.043	.147*
COP	-.220**	.470**	.078	1.000	.396**	.587**	.006	.252**	-.061
Trust	-.167**	.319**	.275**	.371**	1.000	.514**	-.089	.116*	-.103
CS	-.276**	.517**	.224**	.562**	.494**	1.000	-.089	.178**	-.133*
Fees	.134**	.199**	.035	.002	-.077	-.092	1.000	.609**	.344**
EngSize	-.237**	.374**	.049	.221**	.086	.123*	.652**	1.000	.268**
WC	-.004	.283**	.151*	-.015	-.038	-.107	.402**	.320**	1.000

<sup>a</sup>This table provides correlations among the variables used in subsequent tests. Spearman (Pearson) correlations are above (below) the diagonal.

\*\*, \* Indicate two-tailed significance at the 0.01 and 0.05 levels, respectively.

Variable Definitions:

- MgtInf = 1 if client management helps to select the auditor, and 0 otherwise;
- Top100 = 1 if the audit firm is listed as a Top100 CPA firm by Accounting Today, and 0 otherwise;
- INDP = Self-constructed category of independence. Simple count of matched words in the category divided by the number of total words ignoring articles in a given proposal. The data is transformed by winsorizing at the 95% percentile.
- COP = Self-constructed category of cooperation. Simple count of matched words in the category divided by the number of total words ignoring articles in a given proposal. The data is transformed by winsorizing at the 95% percentile.
- Trust = Self-constructed category of trust. Simple count of matched words in the category divided by the number of total words ignoring articles in a given proposal. The data is transformed by winsorizing at the 95% percentile.
- CS = Self-constructed category of client satisfaction. Simple count of matched words in the category divided by the number of total words ignoring articles in a given proposal. The data is transformed by winsorizing at the 95% percentile.
- Fees = Natural logarithm of proposed audit fees;
- EngSize = Natural logarithm of auditee's operating expenses (in millions) in the prior year.
- WC = Natural logarithm of winsorized word count per audit proposal

Table 2.7: Paired Sample T-Test

		Pair Differences		t	Sig. (2-tailed)
		Mean	Std. Deviation		
<b>Panel A: N=332</b>					
Pair 1	INDP - COP	-.20	.19	-18.99	.000
Pair 2	INDP - Trust	-.12	.14	-15.57	.000
Pair 3	INDP - CS	-1.38	.58	-43.72	.000
<b>Panel B: N=288</b>					
Pair 1	INDP - COP	-.20	.19	-18.64	.000
Pair 2	INDP - Trust	-.13	.14	-15.79	.000
Pair 3	INDP - CS	-1.39	.60	-39.36	.000

## Variable Definitions:

- INDP = Self-constructed category of independence. Simple count of matched words divided by the number of total words ignoring articles in a given proposal. The data is transformed by winsorizing at the 95% percentile.
- COP = Self-constructed category of cooperation. Simple count of matched words divided by the number of total words ignoring articles in a given proposal. The data is transformed by winsorizing at the 95% percentile.
- Trust = Self-constructed category of trust. Simple count of matched words divided by the number of total words ignoring articles in a given proposal. The data is transformed by winsorizing at the 95% percentile.
- CS = Self-constructed category of client satisfaction. Simple count of matched words divided by the number of total words ignoring articles in a given proposal. The data is transformed by winsorizing at the 95% percentile.

Table 2.8: Results From Linear Mixed Effect Models

**Panel A: Estimates of Fixed Effects**

DV	<u>INDP</u>		<u>COP</u>		<u>Trust</u>		<u>CS</u>	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Column	N=332	N=332 MI	N=332	N=332 MI	N=332	N=332 MI	N=332	N=332 MI
Parameter	$\beta$ p-value	$\beta$ p-value	$\beta$ p-value	$\beta$ p-value	$\beta$ p-value	$\beta$ p-value	$\beta$ p-value	$\beta$ p-value
Intercept	-0.10 (0.239)	-2.93 (0.003)	0.41 (0.009)	-0.75 (0.451)	0.42 (0.002)	-2.66 (0.008)	2.24 (0.000)	0.95 (0.340)
MgtInf	0.06 <b>(0.034)</b>	2.50 <b>(0.012)</b>	0.03 (0.604)	-0.06 (0.950)	0.01 (0.697)	0.20 (0.843)	-0.06 (0.794)	-0.58 (0.561)
Top100	0.01 (0.549)	0.04 (0.971)	0.10 <b>(0.001)</b>	3.15 <b>(0.002)</b>	0.10 <b>(0.001)</b>	3.01 <b>(0.003)</b>	0.47 <b>(0.000)</b>	4.25 <b>(0.000)</b>
Fees	-0.01 (0.206)	0.03 (0.974)	-0.01 (0.566)	0.91 (0.365)	0.00 (0.587)	-0.72 (0.474)	-0.01 (0.683)	-0.70 (0.484)
EngSize	-0.00 (0.836)	-0.48 (0.633)	0.00 (0.496)	-0.55 (0.583)	0.00 (0.508)	-0.94 (0.351)	0.01 (0.624)	-0.07 (0.947)
WC	0.04 (0.000)	3.29 (0.001)	-0.01 (0.477)	0.99 (0.318)	-0.02 (0.249)	3.11 (0.002)	-0.11 (0.012)	-0.37 (0.715)

**Panel B: Estimates of Covariance Parameters**

Column	<u>INDP</u>		<u>COP</u>		<u>Trust</u>		<u>CS</u>	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Parameter	N=332	N=332 MI	N=332	N=332 MI	N=332	N=332 MI	N=332	N=332 MI
Residual	0.002**	0.003**	0.007**	0.007**	0.006**	0.006**	0.050**	0.052**
EngRC (StateRC)	0.000	0.000	0.003**	0.002*	0.001	0.001	0.004	0.005
StateRC	0.001	0.002	0.004	0.004	0.001	0.001	0.120*	0.116*
FirmRC	0.006**	0.006**	0.008**	0.009**	0.009**	0.008**	0.150**	0.157**

\*\*, \* Indicate two-tailed significance at the 0.01 and 0.05 levels, respectively.

Table 2.8 (continued)

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Variable Definitions:

DV:

- INDP = Simple count of words related to independence divided by the number of words ignoring articles. The data is transformed by winsorizing at the 95% percentile.
- COP = Simple count of words related to cooperation divided by the number of words ignoring articles. The data is transformed by winsorizing at the 95% percentile.
- Trust = Simple count of words related to trust divided by the number of words ignoring articles. The data is transformed by winsorizing at the 95% percentile.
- CS = Simple count of words related to client satisfaction divided by the number of words ignoring articles. The data is transformed by winsorizing at the 95% percentile.

Predictors:

- MgtInf = 1 if client management helps to select the auditor, and 0 otherwise;
- Top100 = 1 if the audit firm is listed as a Top100 CPA firm by Accounting Today, and 0 otherwise;
- Fees = Natural logarithm of proposed audit fees;
- EngSize = Natural logarithm of auditee's operating expenses (in millions) in the prior year.
- WC = Natural logarithm of raw number of words per audit proposal
- EngRC = Recording engagement into a nominal scaled variable
- StateRC = Recording state into a nominal scaled variable
- FirmRC = Recording CPA firm into a nominal scaled variable

## Chapter 3

### Study 2: Auditor Selection and Perceived Audit Quality Attributes

#### 3.1. Introduction

Many U.S. state and local governments utilize external CPA firms for basic financial statement audits and single audits. Depending on the state, either a state audit agency or a government entity can issue a request for proposal (RFP) to solicit audit services. CPA firms can then respond by submitting audit proposals, which generally describe the qualification of the firm, background of the team members, audit plans and procedures, and estimated audit fees. Study 2 discusses audit procurement practices in the public sector and investigates the determinants of auditor choice in a government RFP process. Specifically, this study examines the following two research questions. First, do audit service quality attributes contained in audit proposals predict auditor selection in a RFP process, and if so, which attributes are most predictive of choice? Second, does political competition and the risk of corruption influence audit procurement quality?

Governmental auditing is one cornerstone of good public sector governance (ALGA 2014). Auditors perform an especially important function in promoting credibility, equity, accountability, and appropriate behavior of public sector officials, while reducing the risk of public corruption (IIA 2012). More importantly, an effective governmental audit can increase citizens and stakeholders' ability to evaluate and monitor public officials' performance and thus instill confidence in government. Therefore, it is crucial that a governmental entity utilize a RFP process to hire a qualified auditor who provides a high quality audit. The General Accounting Office (GAO 1986) and the American Institute of Certified Public Accountants (AICPA 1987) deem well-

designed audit procurement practices (e.g., the receipt of competitive proposals from prospective CPA firms) as a mechanism for ensuring audit quality. However, even though procurements for audit services are common in the public sector, few studies investigate how government clients select auditors. Moreover, political scandals involving high-level officials receiving payments from private companies awarded through government contracts illustrate that government officials hold considerable discretionary powers in awarding contracts, even with state regulation of the procurement process<sup>20</sup>. Thus, understanding audit procurement quality and the factors affecting the procurement quality is important to regulators, public officials, and the public.

Product differentiation theory suggests that audit firms will highlight certain desirable attributes in their marketing materials in order to differentiate themselves from competitors and increase their attractiveness to prospective clients. Based on agency theory (e.g., Banker and Patton 1987), I hypothesize that, to mitigate agency problems, government clients will select an auditor who is perceived to provide good quality audit services. This study content analyzed audit proposals to examine whether linguistic cues related to three image attributes (independence, competence, and relationship marketing) along with other perceived audit quality attributes can predict auditor choice in a government RFP process. I used discrete choice models (e.g., Train 2007) to fit the data; the results indicate that descriptions of auditor's competence in audit proposals have predictive power in auditor selection decisions in the public sector. In other words, auditors who highlight competence and qualification in their proposals are more likely to

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<sup>20</sup> For example, Natividad Lara Cervantes, former U.S. Department of Defense contract supervisor, used his position and influence over millions of dollars in government contracts to extort over \$100,000 in bribes from 2008 to 2011. In January 2014, Cervantes pledged guilty to charges involving bribery and kickbacks related to the awarding of construction and service contracts at Camp Pendleton (*USA v. Cervantes*, 2014).

be selected by government clients. Moreover, prior relationships between auditors and clients statistically significantly predict auditor selection. That is, government clients are inclined to hire a predecessor auditor in a RFP process. Environmental factors, political competition and perceived corruption risk, do not seem to affect auditor selection decisions or the quality of audit procurement practices.

This study discusses governmental audit procurement processes, auditor selection procedures in a RFP process, and the factors influencing the effectiveness of audit procurement practices. The findings provide insights into the key attributes that affect auditor selection outcomes in the public sector. This paper contributes to auditing research in several ways. First, audit proposals are a key element in audit procurement practices; however, RFPs have received little attention in the literature<sup>21</sup>. The unique hand-collected dataset of the present study facilitates our understanding of governmental audit procurement practices and CPA firms' marketing communications. Second, this study expands the auditing literature in perceived audit quality. To date, research generally surveys audit clients' to assess their self-reported, perceived audit quality attributes (e.g., Schroeder, Solomom, and Vickrey 1986; Carcello et al. 1992; Duff 2009). This study examines audit firms' marketing materials and investigates whether the linguistics cues reflecting perceived audit service qualities affect clients' auditor selection decisions. The results inform practicing auditors by suggesting that government clients highly value auditors' competence and that using language describing the auditor's ability can influence clients' choice of auditors. Lastly, this study employs emerging

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<sup>21</sup> To my knowledge, there is one study investigating RFPs (Fiolleau et al 2013). In their study, the authors investigate how regulatory reforms designed to promote auditor independence may actually work in the context of auditor change. They examined seven RFP proposals in the private and public sector and reported data from only one private company. The current study collects 378 audit proposals and looks into the determinants of auditor selection decisions in the public sector.



corpus linguistic and text analytic methods to analyze audit proposals and reveal the implicit promises made by auditors to their public sector audit clients. This paper is among the first to create word categories that capture the promises made by auditors to their clients in RFPs.

This paper proceeds as follows. Section 3.2 provides the study background and the supporting theories. Section 3.3 discusses the development of hypotheses, Section 3.4 describes the methodology and the measurements of variables, and Section 3.5 provides descriptive statistics and analysis results. The summary of the study is provided at Section 3.6.

## **3.2. Background and Theory**

### **3.2.1. Governmental Audits and Procurement Practices**

Governmental entities that expend \$500,000 or more in federal awards are required by the Office of Management and Budget (OMB) to comply with the audit and internal control requirements of Circular A-133 (OMB 2003). Governmental audits include audits performed under the Single Audit Act Amendments of 1996 and OMB Circular A-133, *Audits of States, Local Governments and Non-Profit Organizations* (referred to as single audits), program specific audits as defined under OMB Circular A-133, and other compliance audits and attestation engagements performed as required by federal, state, or local laws and regulations. Such audits for non-federal entities must be conducted by a public accountant or a government audit agency, which meets the general standards specified in generally accepted government auditing standards (GAGAS).

Federal outlays for grants to state and local governments increased from \$91 billion in fiscal year 1980 to about \$606 billion in fiscal year 2011 (GAO 2012). Increases in federal grants to state and local governments invoke a variety of grant management challenges<sup>22</sup> and raise the awareness about the importance of government audits (e.g., Deis and Giroux 1994; Saito and McIntosh 2010). Failure to meet these grant management challenges may invite financial corruption and fraudulent activities in government agencies. In fact, corruption is a growing problem in the United States; for example, the Federal Bureau of Investigation (FBI) lists public corruption as one of its top criminal investigative priorities (FBI 2010). In the past decade, numerous state and local officials were accused of bribery, extortion, and/or embezzlement; many pled guilty and were sentenced in prison. For example, Rita Crundwell, former Comptroller of the city of Dixon, Illinois, was indicted for committing perhaps the largest municipal fraud in U.S. history. She was sentenced to 19 years and 7 months in prison for allegedly embezzling as much as \$54 million over 22 years and using the proceeds to finance her horse breeding business and lifestyle (Jenco 2012). Undoubtedly, the occurrence of political corruption manifests the importance of a quality audit of public resources. The GAO suggests that improving the single audit process as an effective accountability mechanism helps to address grant management challenges (GAO 2012). The Government Finance Officers Association (GFOA) argues that an effective government audit plays an essential role in signaling the integrity of the public financial management and disclosure and in enhancing taxpayers' confidence in elected officials (GFOA 2002).

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<sup>22</sup> GAO (2012) grouped grants management challenges involving federal grants to state and local governments into five topic areas: (1) challenges related to effectively measuring grant performance, (2) uncoordinated grant program creation, (3) need for better collaboration, (4) internal control weaknesses, and (5) lack of agency or recipient capacity.

The GAO (1987) and the AICPA (1987) consider well-designed audit procurement practices as a mechanism for ensuring audit quality<sup>23</sup>. The GFOA (2002) also recommends that governmental entities undertake a competitive audit procurement process that emphasizes the auditor's competence to perform a quality audit as a determining factor in hiring. Furthermore, it is important to understand governmental entities' practices in auditor selection for the following two reasons. First, the risk of auditor moral hazard<sup>24</sup> is perceived to be greater in the governmental environment because the probability of client financial failure and the subsequent threat of litigation are relatively low (Raman and Wilson 1994). Second, the GAO had issued two reports addressing CPA audit quality, which indicated that CPAs did not comply with professional auditing standards in many cases (GAO 1985; 1986). In a recent report, the GAO highlights the existence of continuing deficiencies in federal audits performed by CPA firms when compared to those performed by governmental auditors over the period 2003-2004 (GAO 2007). An appropriately structured audit procurement practice, as suggested by the GFOA (2002), can reduce the frequency of audit deficiencies by screening out incompetent and unethical auditors.

Although the audit and internal control requirements of Circular A-133 hold for all U.S. states, considerable diversity exists across states in audit procurement policies, regulations, and procedures. According to the National Association of State Auditors,

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<sup>23</sup> For example, a GAO study (1987) identifies several critical attributes for an effective procurement practice, which include the use of an effective solicitation process, the receipt of competitive bids from prospective CPA firms, the technical evaluation of proposals, the consideration of multi-year audit agreements, and the use of a written agreement documenting the expectations between the successful audit firm and the municipality.

<sup>24</sup> Moral hazard occurs under a type of information asymmetry where a risk-taking agent knows more about his/her intentions than the principal paying the consequences of the risk. Auditor moral hazard relates to auditors' effort supply and/or truthful reporting (e.g., Dye, Balachandran, and Magee 1990; De and Sen 1997).

Comptrollers and Treasurers (NASACT 2012), the state audit agency serves as the primary auditor of the basic financial statements in 34 states and the single audits in 13 states. CPA firms conduct all basic financial statement audits in 11 states and the single audits in 10 states. In 26 states, the state auditor and CPA firms conduct the single audits jointly. The responsibility of selecting CPA firms goes to different parties across states. In 23 states, the state audit agency is fully responsible for initiating a RFP process to contract out the single audits; in all other states, the audited agency selects its own auditor. In the latter circumstance, the state audit agency may or may not be required to supervise or monitor the audit procurement process conducted by the individual audited agency<sup>25</sup>. Nevertheless, no matter which procurement procedure a state adopts, agency costs, just like in the private sector, should influence auditor selection decisions in the public sector (e.g., Bandyopadhyay and Kao 2010; Tate 2007). The next section reviews auditor selection and agency theory in the auditing literature.

### **3.2.2. Auditor Selection and Agency Theory**

The auditing literature often discusses demand and supply influences on auditor selection. From the demand side, the literature widely uses agency demand (e.g., Jensen and Meckling 1976; Francis and Wilson 1988), information demand (e.g., Elliott and Jacobson 1994; Moore and Ronen 1990), and insurance demand<sup>26</sup> (e.g., Piot 2005) to explain the determinants of auditor choice in the commercial sector. However, for the following reasons this study does not consider information demand or insurance demand

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<sup>25</sup> The state information is from a publication of the National Association of State Auditors, Comptrollers and Treasurers: Auditing in the States: A Summary, 2012 Edition.

<sup>26</sup> Agency theory supports agency demand, which refers to a demand of principals and their agents for a quality audit as a monitoring device to enhance the reliability of accounting information and reduce agency costs. Information demand arises from information asymmetries, which refer to a demand for a quality audit that signals management's integrity and the credibility of financial statements to investors. Insurance demand refers to a demand of principals for a reputed auditor who offers extended collateral guarantees to indemnify investors and creditors against financial loss (i.e., auditors' deep pockets).

a great concern for auditor selection in the public sector. First, most, if not all, states have enforced transparency policies that require them to provide information about their operations and decisions online and readily available to the public. Government transparency mitigates information demand by reducing information asymmetry between governmental agencies and the public. For example, the data set (i.e., audit proposals) in this study was obtained through submitting open records requests to state audit agencies; a similar dataset, however, is not available from the private sector. Second, governmental agencies are less likely to experience a financial failure compared to public traded corporations. The governmental environment diminishes the insurance demand for auditing because the probability is relatively low of taxpayers suing auditors for damages or losses resulting from audit deficiencies. The subsequent threat of litigation to auditor is correspondingly reduced (Raman and Wilson 1994).

On the other hand, as in the private sector, the principal-agent problem is prevalent in the public sector. Agency problems occur when the incentives or goals between the principal and the agent imperfectly align (i.e., conflicts of interest) and the principal cannot easily verify that the agent has behaved in the principal's best interests. Under these conditions, agency theory predicts that agents may not act upon the best interest of principals. Researchers (e.g., Jensen and Meckling 1976; Francis and Wilson 1988) have used agency theory to explain corporations' selection of auditors (i.e., a demand perspective) in the private sector. Agency theory predicts that misaligned incentives between shareholders and managers will result in higher agency costs, especially in corporations where managers have a relatively low level of share ownership (Jensen and Meckling 1976). The theory further suggests that the selection of auditors

signals management's integrity and that audit services function as monitoring devices to increase the credibility and the reliability of management and accounting information (Dopuch and Simunic 1982). That is, agency problems induce a need for an independent audit (e.g., Jensen and Meckling 1976; Wallace 2004); companies with lower management shareholding should demand a higher quality audit to reduce agency costs from self-serving management (e.g., Firth and Smith 1992; Hope, Langli, and Thomas 2012) compared to companies with higher management shareholding (e.g., family-owned business).

In the public sector, Banker and Patton (1987) propose that agency theory can help explain municipal audit practices, relationships between citizens and elected officials, and the role of state auditors versus external auditors. Agency theory suggests that the principal-agent problem exists when the incentives of government officials are misaligned with those of the public. Government officials may not act upon the best interest of the principals when conflicts of interest occur. The Crundwell case mentioned earlier is a good example demonstrating the conflicts of interest between the principal and the agent in the public sector. Raman and Wilson (1994) believe that audits of governmental entities help control the agency problem with respect to the actions of public officials. Although some argue that the agency theory characterization of politicians and their constituents imperfectly maps from the profit sector, Wallace (2004) point out that, due to the attributes of political markets, commitments to monitoring activities (i.e., agency demand) by the incumbent can avert political competition.

To summarize, this study considers agency demand as a determinant of auditor choice and uses agency theory to develop the study hypothesis. Because audit

procurement involves both a demand and supply side, the next section discusses audit services from a supply perspective by reviewing product differentiation theory, which supports the hypothesis that differentiated audit quality attributes are valued by audit purchasers.

### **3.2.3. Product Differentiation Theory**

Dickson and Ginter (1987, p. 6) define product differentiation as “offering a product that is perceived to differ from the competing products on at least one element of a vector of physical and nonphysical product characteristics.” An inevitable premise of product positioning is to meet client differentiation demand (Chen and Zhu 2009). Product positioning refers to a process through which marketers attempt to communicate their products’ attributes to target customers and create a distinct impression in the customers’ mind (e.g., Lamb 2012). In auditing, the product differentiation hypothesis traces to Dopuch and Simunic (1982) and DeAngelo (1981) whose studies suggest demands for different levels of audit quality. This stream of research often investigates the effect of audit-firm and individual auditor characteristics on audit quality and auditor choice. The arguments of the studies often refer to agency costs, which are widely used to explain demand for quality-differentiated audits (Watts and Zimmerman 1983). Jensen and Meckling (1976) proposes that clients’ demand for audit quality arises from the incentives to reduce agency costs they faced. Therefore, differential agency costs across firms or even for a given firm across time may invoke heterogeneous demands for audit services in terms of quality (DeAngelo 1981). Many studies using data from different countries (e.g., U.S., France, UK, China, Canada, etc.) in support of the claim that agency costs explain the choice of audit quality (e.g., DeFond 1992; Francis, Richard, and

Vanstraelen 2009; Khalil, Magnan, and Cohen 2008; Lennox 2005; Wang, Wong, and Xia 2008).

The auditing literature provides empirical evidence on the existence of audit quality differentiation in audit markets. Although the empirical results for audit price differentials are mixed<sup>27</sup>, research generally supports product differentiation by evidencing the Big N price premium in audit markets<sup>28</sup>. In addition, research suggests that audit services are quality differentiated in terms of audit firm size. For example, DeAngelo (1981) suggests that audit quality partially depends on auditor firm size and that large audit firms are perceived as higher quality suppliers. Francis and Yu (2009) further provide evidence that larger Big 4 offices produce higher quality audits.

Numerous studies support the association between firm size and a variety of audit-quality proxies (e.g. Krishnan and Schauer 2000; Khurana and Raman 2004; Geiger and Rama 2006; Behn, Choi, and Kang 2008). An explanation for this association is that larger audit firms are motivated to perform high-quality audits as their reputations are more valuable (DeAngelo 1981). In fact, auditor reputation also differentiates audit firms. For example, the GAO (2003) reports that reputation is a key factor in managers' choices of auditor. Barton (2005) further provides evidence that firms build and preserve their reputations for credible financial reporting by engaging highly reputable auditors.

Audit clients and capital markets also view industry expertise as an indicator of differential audit quality. A number of studies support the assertion that firm-level

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<sup>27</sup> For example, Simunic (1980) found no significant differences in prices throughout the large and small segments of the U.S. market, and Chaney et al. (2004) find that there is no Big N premium when they control for self-selection bias.

<sup>28</sup> This stream of research uses data from various countries, including the U.S. (e.g., Palmrose 1986; Simon and Francis 1988), the United Kingdom (e.g., Chan, Ezzamel, and Gwilliam 1993), Australian (Francis 1984; Francis and Stokes 1986), Japan (Taylor 1997), and Hong Kong (e.g., Simon, Teo, and Trompeter 1992; Gul 1999).



industry expertise produces higher quality audits (e.g., Balsam, Krishnan, and Yang 2003; Gramling and Stone 2001; Krishnan 2003, 2005). Recently, the focus of industry expertise has shifted from the firm to the office (e.g., Ferguson et al. 2003) or individual level (e.g., Carcello and Nagy 2004). Using data from Taiwan, Chin and Chi (2009) find that expertise at the individual level (i.e., signing partners) is positively associated with audit quality with respect to a likelihood of accounting restatements. Further, their evidence suggests that the differential restatement likelihood due to industry expertise is mainly attributable to partner-level, rather than firm-level, expertise. In a recent study, Zerni (2012) uses Swedish data to examine auditor specialization at the individual partner level; his findings, consistent with Chin and Chi's, suggest that client firms infer audit quality at least partially from the specialization of the individual audit partner in charge.

The studies discussed above support differentiation in audit quality using different quality proxies. The proxies were used because the credence attributes of auditing prevent an audit client from precisely observing how well an audit was performed (Causholli and Knechel 2012). For example, information asymmetry, a credence feature, makes it impractical, or impossible, for the client to directly assess audit quality prior to, during, and sometimes even after the audit. As a result, perceived quality attributes are used to signal audit service quality. The next section discusses several audit quality attributes from the perceptions of auditors, clients, and financial statement users.

#### **3.2.4. Perceived Audit Quality Attributes**

One stream of auditing research uses survey data to discover attributes perceived to affect audit quality. Schroeder et al. (1986) argue that two types of factors, team-specific characteristics and firm-wide characteristics, influence audit committee

chairpersons' ex ante appraisals of audit quality. Using a questionnaire, they examine 81 audit committee chairpersons' perceptions of the impact on audit quality of 15 attributes and find that audit team factors are perceived as more important than firm-wide factors. Expanding Schroeder's et al. work, Carcello et al. (1992) examine audit quality attribute perceptions of 245 audit partners, 264 preparers, and 120 financial statement users. Factor analysis reduces 41 quality attributes to 12 factors. The most important audit quality factors were: audit team and firm experience with the client, industry expertise, CPA firm responsiveness to client needs, and CPA firm compliance with general audit standards<sup>29</sup>. Due to changes in audit markets in the past decade (e.g., regulatory constraints, globalization of business, commercialization of practice), Duff (2004, 2009) revisits this issue of the perceptions of audit quality using data from the United Kingdom (UK). He develops a multidimensional, structured model of audit quality, AUDITQUAL, to capture the hypothesized dimensions of audit quality. AUDITQUAL consists of nine dimensions within four higher-order factors of competence (reputation, capability, and assurance), independence, relationships (expertise and experience) and service qualities (empathy, non-audit services, and responsiveness). Among those four higher-order factors, independence and competence have widely been recognized as two critical fundamental attributes of audit quality, which is consistent with DeAngelo's (1981) definition of audit quality. She defines audit quality as a product of auditors' ability to discover (i.e., competence) and report (i.e., independence) a breach in clients' accounting system.

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<sup>29</sup> The remaining 8 factors include CPA firm commitment to quality, CPA firm executive involvement, conduct of audit fieldwork, involvement of audit committee, individual team member characteristics, CPA firm personnel maintain skeptical attitude, CPA firm personnel maintain freshness of perspective, and degree of individual responsibility.

Other studies have examined client perceptions of the audit quality attributes associated with client satisfaction, auditor change, and auditor selection. For example, Beattie and Fearnley (1995) reveal fundamental aspects of the auditor choice process and explore audit clients' views of the desirability of audit firm characteristics (i.e., product differentiation from audit clients' perspective) based on questionnaire responses from 210 listed UK companies. Their findings suggest that the technical competence of firm service is the most important characteristic to respondents, followed by the integrity of the firm and the quality of working relationship with audit partner(s). In addition, using factor analysis, they identify eight orthogonal audit firm dimensions<sup>30</sup> of importance to audit clients. Their study provides empirical support for the arguments about differentials in audit quality (DeAngelo 1981), firm reputations and brand names (Dopuch and Simunic 1982), and specialist knowledge (Simunic and Stein 1987). Similar to Beattie and Fearnley (1995), Behn et al. (1997) and Iskandar et al. (2010) link several audit quality attributes<sup>31</sup> to audit client satisfaction. The most recent work related to perceived audit quality attributes is Butcher's et al. (2013) study, which employs Duff's model to hypothesize and measure audit quality. They find evidence that the higher-order audit quality factors of relationship and service qualities are associated with auditor retention.

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<sup>30</sup> Including reputation/quality, acceptability to third parties, value for money, ability to provide non-audit services, small audit firm, specialist industry knowledge, non-Big Six large audit firm, and geographical proximity.

<sup>31</sup> Analyzing survey responses from 434 controllers of Fortune 1000 companies, Behn et al (1997) find a significant, positive relationship between various audit quality attributes and client satisfaction, including responsiveness to client needs, executive involvement, effective and ongoing interaction with the audit committee, conduct of field work, industry expertise, etc. Using Malaysian data, Iskandar et al. (2010) found that client satisfaction is significant related audit firm quality attributes (i.e., prior experience, responsiveness, independence, and commitment of audit firm to quality audit) and audit team quality attributes (i.e., experience with client, independence, involvement in the engagement, conduct of field works, and ethical and knowledgeable of accounting and auditing standards).

The findings of the studies in audit quality attributes imply that dimensions of audit quality go beyond technical qualities<sup>32</sup>, to include features of service quality. This view is supported by a recent PCAOB discussion of audit quality indicators (AQI) and the development of an audit quality framework (PCAOB 2013). The framework defines AQIs as measures for three essential elements of audit quality: audit inputs, audit processes, and audit results. The Board believes that AQIs provide insight into financial statement audit quality and help audit clients and investors evaluate audit services at the engagement team and firm level. Sharing this perspective, the current study predicts that audit service quality attributes, which may lead to audit quality differentiation, will affect auditor selection in a RFP process in the public sector. The next section develops the study hypotheses.

### **3.3. Development of Hypotheses**

#### **3.3.1. Auditor Selection and Perceived Audit Service Qualities**

In audit procurement practices, a state audit agency (or a government entity) issues a request-for-proposal (RFP) to solicit audit services. Interested CPA firms then submit audit proposal to the audit agency. Product differentiation theory suggests that auditors, in response to clients' differential demands, will differentiate themselves from their competitors by highlighting their firm's unique desirable attributes in their proposals. Fiolleau et al. (2013) provide direct evidence on audit product differentiation in an RFP process. They conduct a field study of an audit RFP in a public company; their findings suggest that factors (e.g., social relationship, organizational fit, proposed fee schedules) beyond technical expertise differentiated auditors bidding for the audit engagement.

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<sup>32</sup> Technical qualities refer to traditional views of audit quality, centering on perceptions of auditor independence and competence. Duff (2009) proposes that service quality and technical quality are both necessary components of audit quality.

Therefore, I propose that CPA firms will highlight their perceived audit service quality attributes, in their proposals, to differentiate themselves from competing bidders.

In the framework of agency theory, public officials are agents of the people, such as top corporate managers are agents of shareholders. For example, similar to management in the private sector, elected or appointed government officials are responsible to manage and operate public resources. Agency problems exist in the public sector when officials' interests misalign with the public's interests. In fact, agency problems could be more severe in the public sector because taxpayers, unlike shareholders in the commercial sector, cannot exit relationships with politicians right away but use their voting rights to monitor government programs and dismiss politicians. As agency theory suggests, a need to reduce agency costs may induce government officials to supply monitoring of their actions and performance. Audits of governmental entities should help control the agency problem with respect to the actions of public officials (Raman and Wilson 1994). Auditors perceived to provide quality services should be able to help government clients achieve accountability, improve operations, and instill confidence among citizens and stakeholders (IIA 2012). Therefore, I hypothesize that government officials will make their auditor selection decisions based on the evaluation of the quality attributes reflected in audit proposals.

Based on the audit literature and Duff's model of audit quality (2004, 2009), I identify several key service qualities and hypothesize that those attributes have predictive power in explaining auditor selection in a governmental RFP process. The quality attributes include independence, competence, marketing relationship (cooperation, trust, and client satisfaction as discussed in Study 1), firm reputation, team expertise, and

industry specialization. Independence and marketing relationship are as defined in Chapter 2 Table 2.1. Competence refers to an auditor's understanding and knowledge that enables the auditor to render services with facility and acumen. Firm reputation refers to the brand name and the standing an auditor enjoys in the market as a reputational intermediary. As discussed earlier, studies examine auditor expertise at individual level and firm level. Expertise at the individual level refers to engagement team members' relevant specialist knowledge and credentials. Expertise at the firm level refers to an audit firm's industry focus, which can be captured by sales-based measures (e.g., Palmrose 1986; Mayhew and Wilkins 2002) and/or a number-of-clients-based measure (Balsam et al. 2003). Although those attributes have potential impacts on audit quality, they are not audit results but quality elements of audit inputs and processes. In other words, the present study focuses on perceived audit quality factors, not proxies of actual (realized) audit quality.

***H1:** Government clients will choose an auditor whose audit proposal reflects more perceived audit service qualities, including independence (H1a), relationship-marketing (H1b), competence (H1c), firm reputation (H1d), team expertise (H1e), and industry specialization (H1f).*

### **3.3.2. Political Competition**

Although authorities recognize the merits of well-designed procurement policies and each state regulates its procurement process, political scandals (i.e., high-level officials received kickbacks from private companies awarded government contracts) illustrate that government officials sometimes hold considerable discretionary powers in the awarding of contracts. Yet, those discretionary powers may be mitigated by the degree of political competition in a state. In the U.S., political competition arises when both of the major parties compete in picking electoral platforms. In contrast, when one

party has a persistent electoral advantage that arises from a majority of committed voters, the dominant party faces low competition and thus has less incentive to appeal to swing marginal voters, who are uncommitted to any party (Besley, Persson, and Sturm 2010). That is, with higher political competition, incumbent political agents bear greater costs of breaching the agreements as the chance of losing future elections increases. As public officials' share of agency costs varies directly with expected political competition, Baber (1983) suggests that political competition motivates public officials to audit the disposition of public resources. He argues that in a scenario where interest groups (the principals) can influence the outcomes of elections, political entrepreneurs (the agents) advocate policies appealing to voters, and these two parties contract to share benefits accruing from public service. In such relationships, agency costs will arise when the agents have incentives to breach the agreements due to conflicts of interest between the parties. His findings reveal a positive correlation between state audit budgets and measures of political competition, which indicates that public officials have stronger incentives to supply auditing when they face higher political competition. That is, the intensity of political competition in a state can increase officials' demand for a higher quality audit. Therefore, I hypothesize that a government audit client in a state with higher political competition is more likely to engage in an effective audit procurement process. The effectiveness (quality) of an audit procurement process depends on whether the government client selects an auditor based on an evaluation of perceived quality attributes reflected in the audit proposals.

***H2: Compared to government audit clients in low political competition states, a government audit client in a high political competition state is more likely to select an auditor whose audit proposal reflects high quality attributes.***

### 3.3.3. Perceived Risk of Corruption

As discussed above, the public sector has an agency problem when public officials put personal utility ahead of the public interest. Political corruption occurs as a result of the agency problem: public resources are used for the private interests of the agents instead of the need of the principals (Isaksen 2005). Political corruption, including embezzlement, nepotism, patronage, etc., refers to the violation of the common interest in favor of special interests that provide direct or indirect benefit to government officials or their patrons (Heidenheimer 1970). Motza (1983) and (Tanzi 1998) suggest that the most serious corruption is related to budgeting and financial management in the budget processes, including wasteful spending in launching unnecessary and unproductive public projects and overpaying for services or goods. A recent study also finds an impact of public officials' corruption on the size and allocation of U.S. state spending (Liu and Mikesell 2014). The authors conclude that overall state spending was higher in more corrupt states than in less corrupt states and that corrupt public officials are likely to distort states' public resource allocations in favor of items directly beneficial to themselves, such as capital, construction, borrowing, total salaries and wages, etc.

Studies also find that public officials' corruption has a negative impact on public procurement practices and management of public resources (e.g., Celentani and Ganuza 2001; Hellman et al. 2000; Rose-Ackerman 1997). For example, corrupt officials can award projects to firms that are not the best quality (i.e., inefficient procurement decisions) in exchange for a bribe. As political scientists widely recognized the spreading nature of corruption (e.g., Jain 2001), I propose that corruption can also affect the effectiveness of the audit procurement process for two reasons. First, due to their self-



interested motivation to maximize their personal gain, corrupt public officials are likely to overlook or override procurement policies and simply select an auditor whom they are friends with or can manipulate and control. Second, auditing provides a monitoring mechanism, and public sector auditors should objectively assess whether public officials manage public resources responsibly effectively, and help detect and deter public corruption (IIA 2012). Therefore, corrupt public officials are less likely to desire a quality audit than are their less corrupt counterparts. Based on the argument above, I hypothesize that a government agency is less motivated to support quality audit in a state where the perceived risk of corruption is high.

***H3:** Compared to government audit clients in high corruption states, a government audit client in a low corruption state is more likely to select an auditor whose audit proposal reflects high quality attributes.*

To simplify the model, I assume there is no interaction effect between state political competition and corruption. The next section discusses the sample and data collection, the study method, and the measurements of variables used to test the hypotheses.

### **3.4. Data and Method**

#### **3.4.1 Sample and Data Collection**

The sample is constructed using a set of audit proposals submitted by CPA firms in a governmental RFP process. See details about the sample and data collection in Section 2.4.1.

#### **3.4.2. Linguistic Methods**

Similar to Study 1, Study 2 utilizes LIWC to capture and count the occurrences of the words related to the constructs of interest (i.e., service quality attributes in audit proposals). The linguistic variables of interest in the current study relate to auditors'

independence, relationship marketing, and competence. The first two attributes are defined in Study 1 Table 2.1; the third attribute is listed in Table 3.1, which provides the associated definition, the dictionary words, and associated internal reliability statistics. See discussions about the linguistic methods, dictionary development and validation, and procedures in Study 1 Section 2.4.2 and Appendix A.

< Insert Table 3.1 here >

### **3.4.3. Discrete Choice Modeling**

This study examines the predictive power of several quality attributes in explaining auditor selection decisions in audit procurement practices. Government clients make a choice between two or more CPA firms who submit audit proposals; thus, each audit proposal represents a discrete choice in its corresponding choice set. Discrete choice modeling (DCM) attempts to analyze decision maker's preferences amongst a set of alternatives (Train 2007). It is widely applied in marketing research to examine customer choice between products and services. Assuming decision makers to be utility maximizers, DCM identifies patterns in choices and models how different consumers respond to competing products. Therefore, a discrete choice model is more appropriate than a logistic regression model in the analysis of this study.

#### **3.4.3.1. Model 1: Audit Service Quality Attributes and Auditor Selection**

Model 1 examines how audit quality attributes in proposals predict auditor choice in a RFP process (H1). The dependent variable, *Winning*, is a binary variable indicating whether an audit proposal is successful (i.e., the CPA firm was selected). *Winning* equals 1 when an auditor receives a contract for an audit proposal. As there are only two possible outcomes for a bidding CPA firm —success or failure— in a RFP process, the

dependent variable in this study has a Bernoulli distribution, in which  $n=1$  (success) occurs with probability  $p$  and  $n=0$  (failure) occurs with probability  $q=1-p$ . In this study, I modeled the probability of *Winning* as a function of several independent variables of interest including include *INDP*, *COM*, *RM*, *Top100*, *ExpYr*, and *SPEC*. The first three linguistic variables were measured by the percentage of the words related to the word categories of independence, competence, and relationship marketing (a combination dictionary of cooperation, trust, and client satisfaction). *Top100*, an indicator of whether an audit firm is listed as a Top100 CPA firm by *Accounting Today*, is a proxy for firm reputation. Team expertise, *ExpYr*, is measured as number of years of lead partner's auditing experience. *SPEC* is an indicator for industry specialization.

A proposed firm is considered a specialist in government audits if the firm reported in the audit proposal that it had audited similar governmental entities and/or provided a list of numerous audited government clients (i.e., a minimum of 10 government clients in the past 5 years). Controlling variables include predecessor auditor (*Prior*), gender of audit engagement partners (*Gender*), geographic distance between auditor and client (*Distance*), and proposed audit fees (*Fees*). *Prior* equals to 1 if a proposed auditor was a predecessor auditor, which is included in the model to control for the prior relationship between auditor and client. *Gender*, measured as a percentage of female audit partners in the engagement, controls for the potential gender effect on auditor selection. Choi, Kim, Qiu, and Zang (2012) found an association between geographic proximity and audit quality. Therefore, the geographic distance between auditor and client was controlled in the selection model as I hypothesized that the government clients will select an auditor who is perceived to provide quality audit.

Following prior research (Choi et al. 2012), I measured *Distance* by taking into account the actual geographic distance between state auditor offices and the audit engagement offices. Specifically, I calculated the number of miles between the two locations using the zip code of the offices. Lastly, I controlled for audit fee and the length of audit proposals by including the variables, *Fees* and *WC*, in the model, which are measured as the natural logarithm of proposed audit fees and raw number of words in audit proposals. Model 1 is as listed below:

Winning<sub>ij</sub> ~ Bernoulli ( $p_{ij}$ ),  $p_{ij} \in \{0, 1\}$

$$\text{logit}(p_{ij}) = \beta_0 + \beta_1 * \text{INDP}_{ijk} + \beta_2 * \text{COM}_{ijk} + \beta_3 * \text{RM}_{ijk} + \beta_4 * \text{Top100}_k + \beta_5 * \text{ExpYr}_{ijk} + \beta_6 * \text{SPEC}_{ijk} + \beta_7 * \text{Prior}_{ijk} + \beta_8 * \text{Gender}_{ijk} + \beta_9 * \text{Distance}_{ijk} + \beta_{10} * \text{Fees}_{ijk} + \beta_{11} * \text{WC}_{ijk}$$

where for state  $i$ , engagement  $j$ , and firm  $k$ :

- Winning* = 1 if the proposal is a winning proposal, and 0 otherwise;
- INDP* = simple count of the words related to the word category of Independence, divided by the number of words ignoring articles (wc);
- COM* = simple count of the words related to the word category of Competence, divided by wc;
- RM* = simple count of the words related to the word category of Cooperation, Trust, and Client Satisfaction, divided by wc;
- Top100* = 1 if the audit firm is listed as a Top100 CPA firm by Accounting Today, and 0 otherwise;
- ExpYr* = number of years of lead audit partner's auditing experience;
- SPEC* = 1 if the firm is identified as a specialist in government auditing, and 0 otherwise;
- Prior* = 1 if the firm is the predecessor auditor, and 0 otherwise;
- Gender* = % of female partners in the engagement;
- Distance* = Natural logarithm of geographic distance (in miles) between auditor and client;
- Fees* = Natural logarithm of proposed audit fees; and
- WC* = Natural logarithm of raw number of words per audit proposal.

### 3.4.3.2. Model 2 and 3: State's Political Competition and Corruption Index

Model 2 examines whether the between-state variations in political competition moderate the ability of the IVs identified in Model 1 to predict auditor choice (H2a). I adopted Klarner's (2013) modified Ranney Index<sup>33</sup> and computed the average of the 2000-2010 data as the measurement for each state's level of political competition (*PC*). The modified Ranney measures range from 0.5 to 1; higher values represent higher levels of competitiveness. *PC* is entered into Model 2 as a variable interacting with the IV's of interest in Model 1. Considering the sample size and the statistical power of the model, I removed two control variables, *Gender and Distance*, from Model 2, which were not significant predictors in Model 1. Model 2 is specified as below.

Winning<sub>ij</sub> ~ Bernoulli ( $p_{ij}$ ),  $p_{ij} \in [0, 1]$

$$\begin{aligned} \text{logit}(p_{ij}) = & \beta_0 + \beta_1 * INDP_{ijk} + \beta_2 * COM_{ijk} + \beta_3 * RM_{ijk} + \beta_4 * Top100_k + \beta_5 * ExpYr_{ijk} + \\ & \beta_6 * SPEC_{ijk} + \beta_7 * Prior_{ijk} + \beta_8 * Fees_{ijk} + \beta_9 * WC_{ijk} + \beta_{10} * PC_i + \beta_{11} * INDP_{ijk} * \\ & PC_i + \beta_{12} * COM_{ijk} * PC_i + \beta_{13} * RM_{ijk} * PC_i + \beta_{14} * Top100_k * PC_i + \beta_{15} * ExpYr_{ijk} * \\ & PC_i + \beta_{16} * SPEC_{ijk} * PC_i + \beta_{17} * Prior_{ijk} * PC_i + \beta_{18} * Fees_{ijk} * PC_i \end{aligned}$$

where for state *i*, engagement *j*, and firm *k*:

*PC* = An average score of the 2000-2010 Modified Ranny index

The definitions of the remaining variables are the same as described in Model 1.

Model 3 examines whether the between-state variations in corruption moderate the ability of the IVs identified in Model 1 to predict auditor choice (H2b). I measured

<sup>33</sup> The original Ranney Index (Ranney 1976) measures a state's competition between the two major political parties in the United States for the time period of 1962-1973. The modified Ranney Index (Klarner, 2013) averages four components: proportion of state senators who are Democrats, proportion of state house members who are Democrats, proportion of the two-party vote that the Democratic candidate got in the last election, and an indicator for unified party control (0 = unified Republican control, 1 = unified Democratic control, .5=neither).

public corruption (*COR*) using the Corruption Risk Report Card<sup>34</sup> released by the Center for Public Integrity (2012). The Center for Public Integrity primarily investigates three concepts: (1) the existence of public integrity mechanisms that promote public accountability and limit corruption, (2) the effectiveness of those mechanisms, and (3) the access that citizens have to those mechanisms. The report card examines the risk of corruption, not the level of actual corruption, in each state government. That is, a state with a higher integrity score in the report card has a lower level of perceived risk of corruption. Similar to Model 2, I interacted the variable *COR* with the IV's of Model 1 in Model 3. Model 3 is specified as below.

Winning<sub>ij</sub> ~ Bernoulli ( $p_{ij}$ ),  $p_{ij} \in [0, 1]$

$$\begin{aligned} \text{logit}(p_{ij}) = & \beta_0 + \beta_1 * \text{INDP}_{ijk} + \beta_2 * \text{COM}_{ijk} + \beta_3 * \text{RM}_{ijk} + \beta_4 * \text{Top100}_k + \beta_5 * \text{ExpYr}_{ijk} + \\ & \beta_6 * \text{SPEC}_{ijk} + \beta_7 * \text{Prior}_{ijk} + \beta_8 * \text{Fees}_{ijk} + \beta_9 * \text{WC}_{ijk} + \beta_{10} * \text{COR}_i + \\ & \beta_{11} * \text{INDP}_{ijk} * \text{COR}_i + \beta_{12} * \text{COM}_{ijk} * \text{COR}_i + \beta_{13} * \text{RM}_{ijk} * \text{COR}_i + \\ & \beta_{14} * \text{Top100}_k * \text{COR}_i + \beta_{15} * \text{ExpYr}_{ijk} * \text{COR}_i + \beta_{16} * \text{SPEC}_{ijk} * \text{COR}_i + \\ & \beta_{17} * \text{Prior}_{ijk} * \text{COR}_i + \beta_{18} * \text{Fees}_{ijk} * \text{COR}_i \end{aligned}$$

where for state  $i$ , engagement  $j$ , and firm  $k$ :

*COR* = Integrity score per Corruption Risk Report Card

The definitions of the remaining variables are the same as described in Model 1.

### 3.5. Results

Descriptive statistics and correlations among the variables are presented below, followed by the main results of hypotheses testing.

<sup>34</sup> States were graded on 330 statements about the laws and practices that promote open, accountable state government and deter corruption. These statements are used as Corruption Risk Indicators, which are grouped into 14 areas of state government oversight. Overall grades are based on the average grades in the major areas, and the reporting and research to score the indicators were conducted during the summer 2011.

### 3.5.1. Descriptive Statistics

Table 3.2, Panel A reports descriptive statistics on the variables retrieved from the audit proposals and the interaction variables. The linguistic-based variables are measured as word percentages (percentage of matched words against the number of all words in a given proposal). The word categories, Independence (*INDP*), Competence (*COM*), and Relationship Marketing<sup>35</sup> (*RM*), are constructed to capture auditors' service quality attributes in audit proposals. Among these variables, the mean values suggest that CPA firms more frequently use words related to relationship marketing, followed by competence and independence, in audit proposals. The lead partners in the proposals have an average of 22 years working experience in auditing (*ExpYr*). The mean value of *Gender* indicates that there are more male partners than female partners in the proposals. The percentile measure of geographic distance (*Distance*) suggests that most of the proposed CPA firms are located near to clients (i.e., 75% of the firms are within approximate 100 miles away from clients). The average proposed audit fee is \$395,955. The range of the proposed fees (*Fees*) is widespread: the lowest proposed fee is about \$12,000 and the highest is about \$6.4 million, which suggests high variability in the size and/or the complexity of the engagements in the sample. The percentile measure further indicates that the majority of proposed audit fees are relatively small (i.e., 75% of the sample is below \$260,000). In fact, only 24 proposed fees are above \$1 million. The political competition measure (*PC*) in the study has a mean value of 0.85, which is not statistically different from that of the 50 states ( $p=0.62$ ) for the period from 2000 to 2010. It indicates that the states included in the study do not tend to have higher or lower levels

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<sup>35</sup> The word category of Relationship Marketing is a combination dictionary of Cooperation, Trust, and Client Satisfaction as discussed in Study 1.

of political competition as compared to the out-of -sample states. The state integrity scores (*COR*) in the study have an average of 68.52 and range from 52 to 87, which are comparable to the 50 states' scores with a mean of 68.22 and a range of 49 to 87.

The normality tests (skewness and kurtosis) indicate that the variables, *Distance*, *Fees*, *WC* and *COR* are not normally distributed. For example, the distribution of *Distance* is highly skewed (Skewness = 6.247) with heavy tails (Kurtosis = 53.572). In addition, histograms of the variables, *INDP*, *COM*, *Distance*, *Fees*, *WC*, and *COR*, indicate outliers at the right end of the distributions. Therefore, before modeling, these variables are transformed by winsorizing at the 95% percentile and/or by taking natural logarithms. Panel B reports the transformed data. The skewness and kurtosis values indicate that the variables are normally distributed after transformation, which are then used in the subsequent analyses. Panels C and D present the descriptive statistics for the variables retrieved from the winning and unsuccessful proposals, respectively. The mean values of the proxies for auditors' competency (*COM* and *ExpYr*) are slightly higher in the winning proposal group than those in the unsuccessful group. In addition, the mean value of the proposed audit fee is lower in the winning proposal group. Panels E and F present the composition of the sample by the existence of a prior relationship between auditor and client. An auditor is considered a predecessor auditor if the firm had served the client in the prior year(s) preceding the RFP. Compared to the non-predecessor group, predecessor auditors seem likely to state less *INDP* but more *RM* in their proposals, have more experiences (higher *COM* and *ExpYr*), propose a higher audit fees (higher *Fees*), and locate closer to the client (lower *Distance*). It is consistent with the expectation that a prior relationship between auditor and client would reduce auditor independence and



induce the auditor to emphasize on relationships between the parties. The lower proposed audit fees for the non-predecessor group suggests that auditors may charge less service fees (i.e., lowballing) to attract new clients.

< Insert Table 3.2 here >

Table 3.3 reports the correlations among the variables of interest. *Winning* is positively correlated with the indicator, *Prior*, for predecessor auditor. As suggested in Study 1, Top100 CPA firms are more likely to use words related to the relationship marketing (*RM*) attributes in their proposals. In addition, the positive correlations between *Top100* and *COM* and *SPEC* indicate that those firms' proposals emphasize auditors' competence and industry specialization. *Top100* also positively correlated with proposed audit fees (*Fees*), which is consistent with the literature in price premium in the audit market. The correlation results between *PC* and *COR* are mixed. Spearman correlation matrix indicates a positive association between these two variables, suggesting that a state with a higher political competition is perceived to be less corrupted. However, this positive association is not significant in the Pearson correlation matrix. I further ran statistical tests to examine multicollinearity of the variables. Collinearity diagnostics indicate that there is no multicollinearity among the IVs of *INDP*, *COM*, *RM*, *ExpYr*, *Top100*, *Prior*, *SPEC*, *Fees*, *WC*, *PC*, and *COR* (i.e.,  $VIF < 2.5$  in all tests).

< Insert Table 3.3 here >

### 3.5.2. Test of Hypotheses

H1 predicts that government clients will choose an auditor whose audit proposal reflects more perceived audit service qualities. By fitting a discrete choice model to the dataset of auditor choices, I examined whether the following features have predictive

powers in explaining the auditor selection decision: independence (H1a), relationship-marketing attributes (H1b), competence (H1c), firm reputation (H1d), team expertise (H1e), and industry specialization (H1f). Table 3.4 reports the results of three discrete choice models. In Column (1), the sample size is 288, which includes the data points that have proposed audit fee information<sup>36</sup>. Model 1a reports a significant result for competence (*COM*: coefficient = .957;  $p = .034$ ), which suggests that a CPA firm is more likely to be selected if its audit proposal states more competence. Therefore, H1c is supported. However, as the remaining variables of interest are not significant, H1a, H1b, H1d, H1e, and H1f are not supported. Besides, the result for *Prior* is significant, which suggests that government clients are more likely to select a predecessor auditor if not prohibited by policies. The Hosmer-Lemeshow test, a statistical test for goodness of fit for logistic regression models, indicates that Model 1a has adequate fit and is correctly specified ( $p=.182$ ). In addition, Nagelkerke's Pseudo  $R^2$  suggests that the model explains roughly 16.5% of the variation in the outcome.

Forty-four data points were removed from Model 1a due to missing fee data. The fee information is not available because in some states a cost proposal is not opened when a CPA firm's technique proposal fails to pass the evaluation criteria and thus is disqualified from further evaluation. As *Fees* is not a significant predictor in Model 1a, I removed it from Model 1b and included the 44 data points for an analysis. As reported in Column (2), the sample size increased to 332 (288+44), and the results are consistent with those of Model 1a. Column (3) reported the results with imputed fee data. Multiple Imputation (MI) is a statistical technique that replaces each missing value with a set of

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<sup>36</sup> See Sample Characteristics in Table 2.4.

plausible values that represent the uncertainty about the right value to impute (Rubin 1987). Assuming the missing values are missing at random, I utilized MI to generate imputed data for the missing fee values, and the results of the five stimulated complete datasets are combined to produce pooled estimates as reported for Model 1c. The pooled results are consistent with those of Model 1a and 1b, except that Fees become significant in the imputed model.

< Insert Table 3.4 here >

H2 hypothesizes that a higher level of political competition in a state will increase a government client's need for quality audit in that state. The prediction is that the coefficients of the interaction terms (e.g., *PC*\*quality attribute) will be significantly positive. However, Model 2a in Table 3.5 reports no significant results for the interaction terms, which suggest that variations in the levels of the states' political competition do not affect the effect of perceived audit service qualities on auditor selection decisions. Like Model 1b, Model 2b in Column (2) using the 332 data points reports the results consistent with those of Model 2a. The imputed datasets also report non-significant results (untabulated). Therefore, H2a is not supported. The Hosmer-Lemeshow test of goodness of fit indicates that Model 2a (b) has adequate fit ( $p > 0.05$ ). In addition, Nagelkerke's Pseudo  $R^2$  suggests that the model explains roughly 21.3% (19.9%) of the variation in the outcome.

H3 hypothesizes that a client in a state with a lower perceived corruption risk will be more likely to demand a high quality audit. The prediction is that the coefficients of the interaction terms (e.g., *COR*\*quality attribute) will be significantly positive. However, Model 3a (n=288) and 3b (n=322) in Table 3.5 reports no significant results for all of the

interaction terms, except for *COR\*Prior* (coefficient = -.169,  $p=.037$ ; coefficient = -.216,  $p=.004$ ). The negative coefficient indicates that government clients who are in a state with a lower level of perceived corruption risk are less likely to select a predecessor auditor, compared to those in the states with a higher level of perceived corruption risk. The overall results suggest that variations in the levels of the states' perceived corruption risk do not affect the effect of perceived audit service qualities on auditor selection decisions. The imputed datasets also report consistent results (untabulated). Therefore, H3 is not supported. The Hosmer-Lemeshow test of goodness of fit indicates that Model 3 has adequate fit ( $p>.05$ ). In addition, Nagelkerke's Pseudo  $R^2$  suggests that the model explains roughly 21.4% (21.3%) of the variation in the outcome.

### 3.5.3. Supplemental Analysis

To address the potential issues associated with the nested structure of the proposal dataset, I ran generalized linear mixed models to test the study hypotheses. After controlling for the random effects of Engagement within State, State, and CPA firm, the mixed models report similar results as discrete choice models<sup>37</sup>. In Table 3.6 Panel A, the results for Model 1 indicate that auditor competence (*COM*: coefficient=0.17;  $p=0.04$ ) and preexisting client-auditor relationships (*Prior*: coefficient=0.30;  $p<0.01$ ) predict auditor selection decisions. Likewise, Model 2 in Table 3.6 Panel A reports no significant results for the interaction terms of political competition and perceived audit service qualities. Lastly, the results for Model 3 reported in Table 3.6 Panel A are similar to those reported by the discrete choice modeling: the interaction term, *COR\*Prior*, also has a significant negative coefficient value. As discussed in Chapter 2, Panel B in Table 3.6

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<sup>37</sup> I ran mixed effect models for both samples ( $n=288$  and  $332$ ). The results for both samples are similar; the numbers reported in Table 3.6 are based on the sample of 332.

reports the parameter estimated for the random effects in the linear mixed models. The estimated parameters reported here indicate that both *FirmRC* and *StateRC* account for the variance of the random effects, but not significantly.

Due to the small sample size and numerous predictors in the models, I used G\*Power to estimate the archived power with a post hoc analysis. Based on an omnibus multiple regression power analysis, the statistical power of the models is adequate (>90%), given input parameters of a medium effect size, an alpha value of 0.05, a total sample size of 288, and 18 predictors.

### **3.6. Discussion, Limitations, and Summary**

This study examines audit proposals to reveal whether audit service quality attributes signaled in audit proposals explain government clients' selection of auditor. The results suggest that auditor competence predicts auditor selection in a government RFP process when the signals are embedded in the text of audit proposals (i.e., linguistic descriptions of auditor competence). There are no significant results for the measures of auditor competence in terms of the number of years of lead partners' working experience in auditing and the number of government clients of an audit firm. The linguistic literature provides a possible explanation for the predictive power of the linguistic-based measure observed in this study. For example, Berry, Hiller, Mueller and Pennebaker (1997) examine the effect of individuals' verbalizations on social perception<sup>38</sup> of others. Specifically, they use LIWC to investigate the relations between individual differences in word selection and first impressions. They find that the language dimensions account for significant proportions of the variance in impressions of the individuals beyond that explained by nonlinguistic predictors (i.e., nonverbal expressiveness). Consistent with

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<sup>38</sup> Refers to how people form impression of and make inferences about other people.

previous work on person perception (e.g., Feingold 1992), their findings indicate the linguistic dimensions are significant predictors of perceived competence. Moreover, some practitioners believe that words matter as much as numbers or even more in business because the words a company shares can fully express its underlying beliefs and cultures (e.g., Rittenhouse 2013; Williams 2013). To sum up, the linguistic category of auditor competence are likely to influence clients' impressions of a firm and further affect their auditor selection decisions.

The study also finds that government audit clients are more likely to hire a predecessor auditor, which suggests that they desire to have a long-term relationship with the auditor. This tendency may explain a non-significant result for auditor independence as studies generally suggest that ongoing auditor-client relationships make it difficult for auditors to maintain the appropriate level of independence (e.g., Church et al. 2015). Although the current study does not provide a conclusive finding on proposed audit fees (i.e., not significant in the original model but become significant in the imputed model), the negative coefficients in both models suggest that government audit clients would select a lower bidder. Lastly, there are no results indicating whether political competition and perceived risk of corruption would affect audit procurement quality in the public sector. A possible reason for the non-significant results is that both political competition and perceived risk of corruption are measured at a higher, broader level (i.e., statewide scope) and thus may not directly influence officials' decision-making at a lower level, i.e., in their choices of auditors.

In addition to the limitations of the linguistic approach discussed in Chapter 2, two caveats should be considered when evaluating the reported findings. First, the present

study does not measure audit clients' perceptions of auditors' service qualities based on their readings of audit proposals. In other words, there is no direct evidence that higher frequency of words related to a certain attribute is associated with (or cause) higher client perceptions of that attribute of an auditor. Therefore, the study cannot address the issue of causality between perceived audit service qualities and auditor selection decisions.

Second, the study measures firm reputation with a dichotomized variable (i.e., whether a firm is recognized as a Top100 CPA firm or not), which likely results in information loss (Shinkins 2013). One can argue that the Big N audit firms are much more reputable than the rest of the Top100 CPA firms, and those non-Big N-Top100 CPA firms are not necessarily enjoy more reputation than non-Top100 CPA firms. Another measurement issues are related to the measure of perceived risk of corruption, which is calculated based on various components that may not be completely relevant to the audit procurement practices in question (e.g., state insurance commissions, lobbying disclosure, redistricting process, civil service management). The use of the imprecise measure may lead to unreliable estimates of the effect of corruption on audit procurement quality.

To conclude, this study uses a textual analysis program, LIWC, to examine the associations between the linguistic cues related to perceived audit service attributes in audit proposals and governmental clients' auditor selection decision. The study contributes to the literature in the following ways. First, the study results show a positive relation between a linguistic-based measure of auditor competence and auditor choice. This is consistent with a proposition that procurement practices in the public sector should inform a governmental client in selecting a competent supplier (Raman and Wilson 1994). Second, the results indicate that a prior client-auditor relationship is likely

to affect auditor selection outcome. Regulators should weigh the benefit of a close client-auditor relationship (i.e., familiarity) against the related cost (i.e., loss in objectivity) in considering the need for mandatory auditor rotation. Lastly, the current study contributes by extending our understanding of the nature of an auditor proposal and its role in governmental audit procurement practices.



Table 3.1: Constructed Word Categories and Validity Statistics

<b>Category (Abbreviation)</b>	<b>Definition (Source)</b>	<b>List of words*</b>	<b>Alpha (Binary/ raw)**</b>
Competence (COM)	“...is derived from a synthesis of education and experience.” "Attainment and maintenance of a level of understanding and knowledge that enables a member to render services with facility and acumen.” (AICPA ET section 56 Article V)	ability; able; appropriate; appropriateness; capability; capable; capacity; certificate; certification; certified; competence; competency; competent; educated; education; educational; experience; experienced; expert; expertise; familiar; familiarity; knowledge; knowledgeable; license; licensed; profession; professional; proficiency; proficient; qualification; qualified; qualify; skill; skilled; skillful; specialist; specialize; specialty; sufficient; superior; train; trained; training.	0.765/ 0.435

\* See the development of the word lists in Appendix A.

\*\* As suggested by the LIWC2007 Manual, the alpha reliability is calculated based on the binary and uncorrected methods. The binary method converts the usage of each of the single words within a given text into either a 0 (not used) or a 1 (used one or more times). The uncorrected method is based on the percentage of total words that each of the category words is used.

Table 3.2: Descriptive Statistics

	Mean	Std. Dev.	Min	Max	25th	50th	75th	Skew	Kurtosis
<b>Panel A: Entire Sample (N=288)</b>									
INDP	.167	.099	.000	.500	.090	.160	.230	.590	.321
COM	1.402	.407	.610	3.170	1.123	1.370	1.650	.566	.898
RM	2.221	.831	.610	4.560	1.490	2.115	2.800	.527	-.339
ExpYr	22.420	7.598	3.000	44.000	16.000	20.000	29.000	.416	-.198
Gender	.258	.301	.000	1.000	.000	.000	.500	.774	-.318
Distance	84.365	152.647	1.000	1667.000	5.500	45.550	106.000	6.247	53.572
Fees	\$395,955	903,048	12,450	6,437,721	50,550	105,443	258,375	3.914	16.308
WC	6,795	5,655	654	37,664	3,794	5,617	7,353	3.197	12.359
PC	.854	.037	.760	.930	.820	.860	.860	-.191	.922
COR	68.531	5.324	52.000	87.000	66.000	67.000	74.000	.321	2.449
<b>Panel B: Transformation</b>									
INDP_W	.163	.091	.000	.340	.090	.160	.230	.182	-.770
COM_W	1.390	.376	.610	2.110	1.123	1.370	1.650	.080	-.654
Dist_In	69.747	74.960	1.000	231.200	5.500	45.550	106.000	.966	-.427
Fees_In	11.766	1.328	9.429	15.678	10.831	11.566	12.462	.791	.466
WC_Wln	8.587	.607	6.483	9.852	8.241	8.633	8.903	-.405	1.097
COR_W	68.281	4.693	52.000	75.000	66.000	67.000	74.000	-.599	.854
<b>Panel C: Winning Proposal Sample (N=82)</b>									
INDP	.159	.102	.000	.430	.078	.150	.240	.504	-.266
COM	1.468	.407	.620	3.170	1.208	1.385	1.658	1.096	2.896
RM	2.165	.866	.950	4.560	1.475	2.000	2.733	.830	.356
ExpYr	23.280	8.079	10.000	44.000	17.750	22.500	29.000	.464	-.174
Gender	.260	.313	.000	1.000	.000	.000	.500	.844	-.222
Distance	80.794	98.219	1.000	548.000	5.800	47.550	112.000	2.139	6.478
Fees	\$378,632	882,776	12,450	4,579,000	39,750	88,538	275,784	3.647	12.874
WC	7,273	6,922	1,146	37,664	3,858	5,124	7,611	3.010	9.436
<b>Panel D: Unsuccessful Proposal Sample (N=206)</b>									
INDP	.170	.097	.000	.500	.100	.160	.230	.646	.618
COM	1.376	.405	.610	2.760	1.070	1.355	1.658	.370	.012
RM	2.243	.817	.610	4.230	1.505	2.190	2.838	.401	-.596
ExpYr	22.078	7.391	3.000	44.000	16.000	20.000	29.000	.372	-.256
Gender	.257	.297	.000	1.000	.000	.000	.500	.746	-.350
Distance	85.787	169.713	1.000	1667.000	5.250	44.100	101.500	6.203	48.649
Fees	\$402,851	913,023	14,400	6,437,721	54,900	115,615	254,794	4.032	17.779
WC	6,605	5,071	654	37,119	3,772	5,684	7,143	3.149	13.389

Table 3.2 (continued)

	Mean	Std. Dev.	Min	Max	25th	50th	75th	Skew	Kurtosis
<b>Panel E: Predecessor Auditor Sample (N=62)</b>									
INDP	.151	.099	.000	.430	.070	.145	.210	.774	.144
COM	1.454	.459	.670	3.170	1.158	1.425	1.703	1.048	2.246
RM	2.232	.885	.610	4.510	1.565	2.105	2.823	.557	-.081
ExpYr	23.048	7.867	10.000	40.000	17.750	21.500	28.250	.345	-.653
Gender	.274	.343	.000	1.000	.000	.000	.500	.919	-.296
Distance	70.908	81.176	1.000	244.000	3.300	34.150	118.500	.910	-.726
Fees	447,457	844,036	12,450	4,579,000	57,550	162,963	373,888	3.460	12.616
WC	6,718	6,059	654	32,317	3,429	5,256	6,891	2.595	7.418
<b>Panel F: Non-Predecessor Auditor Sample (N=226)</b>									
INDP	.171	.098	.000	.500	.100	.160	.240	.553	.440
COM	1.388	.391	.610	2.760	1.115	1.360	1.640	.323	.024
RM	2.218	.817	.800	4.560	1.458	2.125	2.800	.518	-.421
ExpYr	22.248	7.532	3.000	44.000	16.000	20.000	29.000	.436	-.036
Gender	.253	.289	.000	1.000	.000	.000	.500	.692	-.436
Distance	88.057	166.948	1.000	1667.000	5.725	50.050	105.250	6.024	47.140
Fees	381,826	919,859	14,400	6,437,721	48,844	97,663	224,588	4.033	17.270
WC	6,816	5,553	795	37,664	3,878	5,624	7,523	3.425	14.412

## Variable Definitions:

- Winning = 1 if the auditor is awarded with a contract, and 0 otherwise;
- INDP = Self-constructed category of independence. Simple count divided by the number of words ignoring articles (%), winsorizing at 95%;
- COM = Self-constructed category of competence. Simple count divided by the number of words ignoring articles (%);
- RM = Self-constructed category of relationship marketing attributes (cooperation, trust, and client satisfaction). Simple count divided by the number of words ignoring articles (%);
- ExpYr = Number of years of lead partner's working experience in auditing;
- Gender = % of female partners in the engagement;
- Distance = Distance (in miles) between the offices of state auditor and CPA firm;
- Fees = Proposed audit fees retrieved from proposal;
- WC = Raw number of words per audit proposal
- PC = 2000-2010 average Ranney measures of political competitiveness
- COR = State integrity scores

Table 3.3: Cross-Correlation Matrix<sup>a</sup>

	Winning	INDP	COM	RM	ExpYr	Top100	Prior	SPEC	Fees	Distance	Gender	PC	COR	WC
Winning	1.000	-0.052	0.084	-0.059	0.020	-0.059	.311**	0.018	-0.084	0.037	0.018	0.021	0.103	0.010
INDP	-0.051	1.000	-.214**	.224**	0.016	-0.013	-0.074	-0.066	-0.012	-.178**	-0.101	-.120*	-.213**	.131*
COM	0.089	-.204**	1.000	.259**	-0.070	.132*	0.034	0.014	-.143*	0.002	.114*	.425**	.117*	-.339**
RM	-0.037	.189**	.271**	1.000	-0.062	.543**	0.010	.260**	-0.080	-.421**	0.041	.209**	-.127*	-.127*
ExpYr	0.038	0.019	-0.071	-0.082	1.000	-0.016	0.010	.135*	-0.077	0.000	-0.079	0.007	-0.014	-0.005
Top100	-0.059	-0.016	.123*	.518**	-0.031	1.000	-0.011	.430**	.160**	-.279**	0.008	.195**	.183**	.233**
Prior	.311**	-0.064	0.038	0.013	0.022	-0.011	1.000	0.037	0.114	-0.038	0.009	.139*	.190**	-0.029
SPEC	0.018	-0.079	0.009	.228**	.133*	.430**	0.037	1.000	-0.030	-.137*	-0.043	0.005	0.040	.233**
Fees	-0.068	0.028	-.156**	-0.091	-0.091	.199**	0.095	-0.026	1.000	0.089	-0.012	-0.012	.241**	.332**
Distance	0.036	-.197**	0.070	-.331**	-0.052	-.166**	-0.001	-0.101	.137*	1.000	.120*	-.137*	.195**	0.002
Gender	0.022	-.115*	0.099	0.042	-0.087	-0.028	0.033	-0.081	-0.046	.197**	1.000	-.140*	0.027	-0.036
PC	0.006	-0.082	.383**	.156**	-0.020	0.089	0.083	-0.036	-0.103	-0.095	-.146**	1.000	.330**	-.332**
COR	0.097	-.135*	0.070	-.148**	-0.033	0.072	.169**	-0.083	.302**	.239**	0.021	.128*	1.000	0.017
WC	0.035	.111*	-.331**	-0.090	-0.002	.271**	-0.046	.226**	.359**	0.031	-0.027	-.311**	0.003	1.000

<sup>a</sup> This table provides correlations among the variables used in subsequent tests. Spearman (Pearson) correlations are above (below) the diagonal.

\*\*,\* Indicate two-tailed significance at the 0.01 and 0.05 levels, respectively.

Variable Definitions:

Winning = 1 if client management helps to select the auditor, and 0 otherwise;

INDP = Self-constructed category of independence. Simple count divided by the number of words ignoring articles (%).The data is transformed by winsorizing at the 95% percentile.

COM = Self-constructed category of competence. Simple count divided by the number of words ignoring articles (%).The data is transformed by winsorizing at the 95% percentile.

RM = Self-constructed category of relationship marketing attributes (cooperation, trust, and client satisfaction). Simple count divided by the number of words ignoring articles (%).

ExpYr = Number of years of lead partner's working experience in auditing.

Table 3.3 (Continued)

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Variable Definitions (continued):

- Top100 = 1 if the audit firm is listed as a Top100 CPA firm by Accounting Today, and 0 otherwise.  
Prior = 1 if the firm is the predecessor auditor, and 0 otherwise.  
SPEC = 1 if the firm is identified as a specialist in government auditing, and 0 otherwise.  
Fees = Natural logarithm of proposed audit fees;  
Distance = Distance (in miles) between the offices of state auditor and CPA firm. The data is transformed by winsorizing at the 95% percentile.  
Gender = Percentage of female partners in the engagement;  
PC = 2000-2010 average Ranney measures of political competitiveness  
COR = State integrity scores. The data is transformed by winsorizing at the 95% percentile.

Table 3.4: Perceived Service Qualities and Auditor Selection Decision

Column	(1) N = 288 Model 1a		(2) N= 332 Model 1b		(3) N =332 MI Model 1c	
Parameter	$\beta$	p-value	$\beta$	p-value	$\beta$	p-value
Intercept	-4.620	.138	-7.222	.006	-4.934	.082
INDP	0.109	.951	-.307	.844	.010	.995
COM	0.957	<b>.034</b>	.940	<b>.029</b>	.919	<b>.037</b>
RM	-0.049	.834	-.038	.870	-.091	.692
ExpYr	0.014	.447	.011	.558	.009	.631
Top100	-0.652	.114	-.596	.113	-.423	.274
Prior	1.539	<b>.000</b>	1.635	<b>.000</b>	1.772	<b>.000</b>
SPEC	0.234	.479	.146	.648	.067	.837
Fees	-0.204	.101			-.337	<b>.004</b>
Distance	0.000	.931	.000	.971	.001	.786
Gender	-0.001	.912	.001	.898	-.001	.895
WC	0.636	<b>.032</b>	.525	.047	.727	<b>.011</b>
R Square	0.165		0.159		-	
Classification	75.0		78.0		-	

Variable Definitions:

- INDP = Self-constructed category of independence. Simple count divided by the number of words ignoring articles (%). The data is transformed by winsorizing at the 95% percentile.
- COM = Self-constructed category of competence. Simple count divided by the number of words ignoring articles (%). The data is transformed by winsorizing at the 95% percentile.
- RM = Self-constructed category of relationship marketing attributes (cooperation, trust, and client satisfaction). Simple count divided by the number of words ignoring articles (%).
- ExpYr = Number of years of lead partner's working experience in auditing.
- Top100 = 1 if the audit firm is listed as a Top100 CPA firm by Accounting Today, and 0 otherwise.
- Prior = 1 if the firm is the predecessor auditor, and 0 otherwise.
- SPEC = 1 if the firm is identified as a specialist in government auditing, and 0 otherwise.
- Fees = Natural logarithm of proposed audit fees.
- Distance = Distance (in miles) between the offices of state auditor and CPA firm. The data is transformed by winsorizing at the 95% percentile.
- Gender = % of female partners in the engagement.
- WC = Natural logarithm of raw number of words per audit proposal.

Table 3.5: State Political Competition, Corruption Risk, and Audit Procurement Quality

Column	(1)		(2)		(3)		(4)	
	N = 288		N= 332		N = 288		N= 332	
	Model 2a		Model 2b		Model 3a		Model 3b	
Parameter	$\beta$	p-value	$\beta$	p-value	$\beta$	p-value	$\beta$	p-value
Intercept	-109.65	.029	-55.51	0.02	25.51	0.30	10.67	0.39
INDP	24.98	.577	55.34	0.17	9.71	0.72	13.12	0.51
COM	28.26	.058	24.15	0.08	-4.75	0.45	-3.60	0.52
RM	6.57	.402	2.86	0.68	-6.34	0.14	-6.48	0.07
ExpYr	0.24	.645	0.20	0.70	-0.19	0.52	-0.36	0.17
Top100	-10.13	.405	-5.87	0.56	-1.65	0.76	0.74	0.86
Prior	-6.70	.431	-7.44	0.37	13.39	<b>0.02</b>	16.65	<b>0.00</b>
SPEC	15.98	.080	11.82	0.18	6.57	0.19	4.34	0.29
Fees	3.41	.279			-1.33	0.41		
WC	0.64	.058	0.45	0.12	0.68	<b>0.03</b>	0.59	<b>0.04</b>
PC	121.76	<b>.037</b>	57.43	<b>0.04</b>				
PC by INDP	-29.46	.573	-65.42	0.16				
PC by COM	-31.99	.066	-27.12	0.10				
PC by RM	-7.64	.400	-3.34	0.68				
PC by ExpYr	-.27	.664	-0.22	0.71				
PC by Top100	10.89	.443	6.20	0.60				
PC by Prior	9.66	.329	10.72	0.26				
PC by SPEC	-18.54	.085	-13.84	0.18				
PC by Fees	-4.23	.255						
COR					-0.46	0.19	-0.26	0.12
COR by INDP					-0.15	0.69	-0.21	0.46
COR by COM					0.084	0.35	0.06	0.43
COR by RM					0.09	0.14	0.10	0.07
COR by ExpYr					0.00	0.48	0.01	0.15
COR by Top100					0.02	0.85	-0.02	0.74
COR by Prior					-0.17	<b>0.04</b>	-0.22	<b>0.00</b>
COR by SPEC					-0.09	0.20	-0.06	0.32
COR by Fees					0.02	0.48		
R Square	0.21		0.20		0.21		.21	
Classification	74.3		77.7		75.7		75.7	

Table 3.5 (Continued)

Variable Definitions:

INDP	=	Self-constructed category of independence. Simple count divided by the number of words ignoring articles (%). The data is transformed by winsorizing at the 95% percentile.
COM	=	Self-constructed category of competence. Simple count divided by the number of words ignoring articles (%).The data is transformed by winsorizing at the 95% percentile.
RM	=	Self-constructed category of relationship marketing attributes (cooperation, trust, and client satisfaction). Simple count divided by the number of words ignoring articles (%).
ExpYr	=	Number of years of lead partner's working experience in auditing.
Top100	=	1 if the audit firm is listed as a Top100 CPA firm by Accounting Today, and 0 otherwise.
Prior	=	1 if the firm is the predecessor auditor, and 0 otherwise.
SPEC	=	1 if the firm is identified as a specialist in government auditing, and 0 otherwise.
Fees	=	Natural logarithm of proposed audit fees.
Distance	=	Distance (in miles) between the offices of state auditor and CPA firm. The data is transformed by winsorizing at the 95% percentile.
Gender	=	% of female partners in the engagement.
WC	=	Natural logarithm of raw number of words per audit proposal.
PC	=	2000-2010 average modified Ranney measures of political competitiveness; and
COR	=	State integrity score winsorized at 95%.



Table 3.6: Results From Linear Mixed Effect Models

<b>Panel A: Estimates of Fixed Effects</b>						
Column	<b>Model 1</b>		<b>Model 2</b>		<b>Model 3</b>	
Parameter	$\beta$	p-value	$\beta$	p-value	$\beta$	p-value
Intercept	-0.44	0.42	-18.61	0.04	4.67	0.33
INDP	0.01	0.97	4.71	0.49	1.21	0.80
COM	0.17	<b>0.04</b>	4.98	<b>0.05</b>	-1.05	0.34
RM	0.00	0.99	1.23	0.36	-1.01	0.18
ExpYr	0.00	0.34	0.06	0.53	-0.03	0.58
Top100	-0.11	0.18	-1.56	0.46	-0.41	0.67
Prior	0.30	<b>0.00</b>	-1.14	0.45	2.27	<b>0.02</b>
SPEC	0.04	0.54	2.14	0.15	0.98	0.29
Fees	-0.04	0.12	0.55	0.32	-0.14	0.62
Distance	0.00	0.92				
Gender	0.00	0.90				
WC	0.10	0.07	0.09	0.11	0.10	0.08
PC			21.27	<b>0.04</b>		
PC by INDP			-5.51	0.49		
PC by COM			-5.62	0.06		
PC by RM			-1.41	0.36		
PC by ExpYr			-0.06	0.55		
PC by Top100			1.66	0.50		
PC by Prior			1.70	0.33		
PC by SPEC			-2.45	0.16		
PC by Fees			-0.69	0.29		
COR					-0.07	0.28
COR by INDP					-0.02	0.78
COR by COM					0.02	0.26
COR by RM					0.01	0.18
COR by ExpYr					0.00	0.52
COR by Top100					0.00	0.74
COR by Prior					-0.03	<b>0.05</b>
COR by SPEC					-0.01	0.30
COR by Fees					0.00	0.72

Table 3.6 (Continued)

<b>Panel B: Estimates of Covariance Parameters</b>			
	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
Residual	0.175	0.178	0.173
EngRC(StateRC)	0.000	0.000	0.000
StateRC	0.005	0.008	0.007
FirmRC	0.009	0.003	0.008

Variable Definitions:

- INDP = Self-constructed category of independence. Simple count divided by the number of words ignoring articles (%). The data is transformed by winsorizing at the 95% percentile.
- COM = Self-constructed category of competence. Simple count divided by the number of words ignoring articles (%). The data is transformed by winsorizing at the 95% percentile.
- RM = Self-constructed category of relationship marketing attributes (cooperation, trust, and client satisfaction). Simple count divided by the number of words ignoring articles (%).
- ExpYr = Number of years of lead partner's working experience in auditing.
- Top100 = 1 if the audit firm is listed as a Top100 CPA firm by Accounting Today, and 0 otherwise.
- Prior = 1 if the firm is the predecessor auditor, and 0 otherwise.
- SPEC = 1 if the firm is identified as a specialist in government auditing, and 0 otherwise.
- Fees = Natural logarithm of proposed audit fees.
- Distance = Distance (in miles) between the offices of state auditor and CPA firm. The data is transformed by winsorizing at the 95% percentile.
- Gender = % of female partners in the engagement.
- WC = Natural logarithm of raw number of words per audit proposal.
- PC = 2000-2010 average modified Ranney measures of political competitiveness; and
- COR = State integrity score winsorized at 95%.

## Chapter 4: Conclusion

Although procurements for audit services are common in the public sector, we know little about how audit firms communicate with prospective clients in a RFP process and on what basis government clients select auditors for audit services. This dissertation consists of two studies investigating audit proposals submitted for government audit engagements. The first study examines CPA firms' impression management strategies that can exemplify a firm's commercial and/or professional values. In the past decades, intensified competition in audit markets induces increasing awareness of commercialization (Humphrey and Moizer 1990) and results in adoption of relationship marketing-oriented strategies (Reid 2008). Researchers indicate that commercialization carried out by marketing activities has become a norm in professional service firms. For example, Broberg et al. (2013) find that auditors view marketing activities as an integral part of the auditing profession and build their competitive advantage on those activities (Hodges and Young 2009). Many have raised a concern about the development of commercialization (i.e., focusing on profitability and service to clients) as opposed to professionalism in the audit industry (e.g., Sweeney and Pierce 2004; Sweeney and McGarry 2011). In fact, some view auditors' promotion on value-added audit services and close working relationships with clients as a possible preclusion of auditor independence (Beattie et al. 2000). Therefore, it is important to understand how a firm's marketing materials relate to their professional values and whether the firm's commercial image potentially conflicts with audit independence.

The findings of the first study indicate that auditors use marketing language to impress their prospective clients. Specifically, CPA firms, especially the larger ones, are

likely to project a persona of a cooperative and trustworthy service provider, instead of an independent auditor, in audit proposals. The result resonates with the argument of Suddaby, Gendron, and Lam (2009) that competitive market conditions and organizational pressure may lead audit firms to emphasize commercial gain but discount ethical and independent values. Achieving a proper balance between professional and commercial interests is a challenge for both regulators and practitioners (e.g., Suddaby et al. 2009; Fiolleau et al. 2013). An over-emphasis on auditors' commercial interests would reduce audit quality (e. g., Gendron 2002; Tackett, Wolf, and Claypool 2004; PCAOB 2013). Responding to the PCAOB's concern about a firm's marketing materials, this study provides evidence of auditors' commercial personae embodied in audit proposals. The findings imply that commercial considerations can drive CPA firms' impression management and may jeopardize the perceived independence of CPA firms in a contracting process. The study has important policy and practice implications because the regulators and practitioners may need to reconsider and reevaluate what level and kind of marketing activities are appropriate for "independent" auditors.

The second study of the dissertation discusses audit procurement practices and investigates the procurement quality in the public sector. The quality of government audits should be of interest to stakeholders including political interest groups and taxpayers because auditing provides a control function in monitoring public sector entities (e.g., Bendor 1990; Deis and Giroux 1994). Researchers provide empirical evidence that auditing plays an essential role in enhancing efficiency in the use of public resources, such as optimal resource allocation in government operations (Saito and McIntosh 2010). As audit procurement practices are deemed as a mechanism for ensuring

audit quality (GAO 1986; AICPA 1987), it is important to understand whether auditor selection decisions are made depending on auditors' perceived audit service qualities as recommended by regulators. For example, the GFOA suggests that in an audit procurement process, "the principal factor in the selection of an independent auditor is the auditor's ability to perform a quality audit" and that "in no case should price be allowed to serve as the sole criterion for selection of an independent auditor" (GFOA 2002 p. 2).

This study finds that auditors who evidence competence and qualification in their proposals are more likely to be selected in a RFP process. However, I do not find significant results for other perceived audit service qualities including independence, relationship marketing, firm reputation, team expertise, and industry specialization. On the other hand, the result suggests that a preexisting relationship between auditors and clients predicts auditor selection. Although I cannot comment on the ultimate level of audit quality provided by the selected auditors in my sample, the study results support Fiolleau's et al. (2013) suggestion of a market demand for auditor attributes other than independence. Research suggests that political competition and corruption would affect public officials' behavior and decisions in public resource management (e.g., budgeting, spending); however, this study does not find the impact of these political environment factors on audit procurement quality.

#### **4.1. Limitations**

Several inherent limitations of a word counting approach have been discussed in the early chapters. Language is highly contextual, and a word count program, like LIWC, may fail to capture different context and thus misclassify some words. However, this

issue could be inconsequential as Berry et al. (1997) suggest that the number of misclassifications in LIWC should be small compared with the number of correct classifications. Another major limitation relates to the dataset of audit proposals. Because the proposals obtained were submitted for government audit engagements in 15 U.S. states, the generalizability of the study results may be limited. Lastly, although audit proposals is a key element in a RFP process, other factors (e.g., personal or professional relationships between the parties) may affect a client's auditor choice. Future research can collect information on those ex-ante connections and factor them into the auditor selection model.

#### **4.2. Contributions**

This paper contributes to auditing research in several ways. First, to my knowledge, the dataset of audit proposals is new and unexplored in research. Audit proposals are the key element in a RFP process; this unique data set facilitates our understanding of how CPA firms market their services through impression management. The findings expand the auditing literature investigating auditors' relationship marketing strategies. Second, this study employs emerging corpus linguistic methods to analyze the audit proposals and reveals the promises made by auditors to their public sector audit clients. This paper is among the first to create and validate word categories that capture these critical messages communicated through audit proposals. Third, the first study responds to the PCAOB's call for attention to CPA firms' commercial considerations that may influence audit performance. The results provides insights on how audit firms' impression management, when driven by their commercial interests, can be a potential threat to auditor independence in appearance. This type of the threat has not yet been

widely recognized by the literature or regulations. Although the results are from public audits data, we would expect to see auditors engage in more relationship marketing strategies in the private sector where auditors' commercial interests prevail. Lastly, the second study expands the auditing literature in perceived audit service qualities. To date, research generally surveys audit clients' to assess their perceptions of audit quality attributes. This study directly assesses the links of perceived audit quality attributes at both the firm and individual level to clients' auditor selections. The findings on the power of the language in marketing materials provide implications for practitioners and regulators. Practicing auditors can emphasize their competitive advantages using convincing language but should be also mindful about their marketing language that may leave an impression not intended by the firms. Audit quality has multiple dimensions, and the trade-off among desirable audit attributes has been a difficult issue for regulators (Fiolleau et al. 2013). Regulators should consider ways to constraint or monitor audit firms' intensive marketing activities, which have the potential to impair auditors' independence in fact and/or in appearance.

#### **4.3. Future Research**

The current study examines how CPA firms compose audit proposals as an impression management tool. As the audiences of audit proposals are potential audit clients, CPA firms may create an image with attributes preferred by clients, but not by the public. Future research could investigate other marketing tools (e.g., media, websites, and newsletters) that CPA firms use to communicate with the external public including potential clients, investors, and regulators. In addition, the current study does not directly examine the association between auditor impression management and clients' perceptions

of auditor independence. Future research could employ experiments to investigate the causality of auditors' marketing language and decision makers' perceptions and their auditor choices. The current study examines audit procurement practices by state audit agencies (i.e., an independent party). Future research examining this topic could focus on procurement conducted by audited government entities (i.e., auditee) and investigate whether desirable audit quality attributes that predict auditor selection would be different if the role of decision makers changes. Although the current study does not find an association between the environment factors and audit procurement quality, future research can explore other factors (i.e., auditee characteristics) which may influence the effectiveness of audit procurement practices.



## Appendix

### Development of Word Lists and Dictionary Validation Process

I followed Pennebaker et al.'s (2007) procedures<sup>39</sup> to validate the linguistic constructs. These included the following steps to develop an initial list of words for each word category identified in Table 2.2 and 2.4 and to validate the developed dictionaries through a survey instrument.

*Step 1: Use test observations (i.e., audit proposals) to develop an initial list of words.*

Five test observations were randomly selected from the dataset of 363 observations. I reviewed those five files and removed content to generate an analyzable text file of the proposals. Removed content include cover page, table of contents, images, tables, charts, engagement personnel resume, client references, peer review report, and standard forms required by request-for-proposal (RFP) documents. The removed information is related to either boilerplate (recurring) text from RFP documents (e.g., restatements of text from the RFP) or will be captured by other quantitative measures.

Using an online text analyzer provided by *Online-Utility.org*<sup>40</sup>, I created a word frequency table for each cleaned text file. I then developed initial lists of words for the word categories by reviewing the frequency tables and assigning a word to its corresponding word category. I further expanded the word lists based on several relevant sources, including AICPA Code of Profession Conduct, Organizational Trust Inventory Scale (Cummings and Bromiley 1996), the Pinto and Pinto Cooperation scale (Pinto and Pinto 1990), and online English dictionaries (i.e., Thesaurus.com).

*Step 2: Hire independent judges to validate the reliability of the word dictionaries*

Accounting professionals were recruited to review the preliminary word lists and complete a survey instrument, which requires them to assess the word lists. The instrument consisted of two tasks: Inclusion and Matching. Participants reviewed a definition table for the attributes of interest and had to pass five knowledge check questions before proceeding to the following tasks. Participants completed these two tasks in random order.

1. Inclusion: in this task, judges first reviewed several word lists grouped by category and then decided whether a word in an assigned category should be included or not. Specifically, they determined whether to (1) add words to the category and/or (2) remove an existing word from the category.

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<sup>39</sup> This article is published by LIWC.net, Austin, Texas 78703 USA in conjunction with the LIWC2007 software program.

<sup>40</sup> This website provides several free online software utilities, such as readability calculator and text analyzer, and can be found at <http://www.online-utility.org/text/analyzer.jsp>

2. Matching: in this task, judges reviewed an alphabetized word list and assigned each word in the list to a corresponding category. In addition to the identified word categories, a "none of the above" option is also given.

*Step 3: Analyze the survey responses*

I received nine responses from three professors and six accounting professionals from state audit agencies. To test the degree of agreement among the judges, I performed the following analyses:

1. Performed a correlation analysis of the inclusion data to identify the judges whose responses are highly correlated with the others. Next, I ranked the judges by the sum of their correlation coefficients.
2. Paired judges and, for each pair, converted the matching data to a score of 0 or 1 (1= judges have the same response for a word assignment; 0= otherwise). Summed the scores for each judge and calculated the degree of the agreement among the judges as a percentage (i.e., a judge's score/60<sup>41</sup>). I also ranked the judges by their agreement percentage.
3. Based on the judges' rank in the tasks and taking their work experience and number of proposals reviewed into consideration, I created two pools of judges - one includes 7 judges (the top 7) and the other includes 4 judges (the top 4). The following table shows data for these pools.

	Pool 1	Pool 2
Members	3 professors and 4 professionals	1 professor and 3 professionals
Average r for inclusion data	0.41	0.53
Average % (degree of agreement) for converted matching data	56%	61%
Average # of proposals reviewed	10.1	14.3
Min # of proposals reviewed / judge	3	6
# of years of work experience	24.4	22.5

<sup>41</sup> If a judge's responses completely agree with others', this judge will receive a total score of 60 (1 for each word matching).

#### *Step 4: Finalize the word lists based on survey responses*

I created three sets of word dictionaries. Set A is based on Pool 1 responses; Set B is based on Pool 2 responses; Set C is based on 5 observations of audit proposals (the original word lists). I used the following criteria in developing Set A and B.

1. A word is assigned to a category based on the majority of the judges' responses (i.e., mode) across both the inclusion and matching tasks.
2. If the majority of the judges voted against including a word in a category in the inclusion task, (i.e., the votes for inclusion are 3 or fewer), then I assigned the word to a category using the judges' responses in the matching task.
3. An inconsistency occurs when the modal category, across tasks (inclusion, matching), differs. In these cases, I summed the judges' votes across the tasks (hence  $n = 14$ , i.e.,  $7 \times 2$ ) and assigned the word to the modal category across votes. When there is a tie, i.e., when there were equal votes, counting votes across the matching and inclusion task, I used the judges' responses in the matching task since the matching task requires an explicit choice of category, whereas the inclusion task requires only agreement with a pre-assigned category (i.e., judges had to drag a word to a category instead of simply clicking Yes or No).
4. For set B, when there was a tie across the matching and inclusion votes, I followed the same logic as is described above for Set A, only using the data in set B to resolve the tie. This occurred in 1 out of 62 cases. In cases where the set B data did not allow for the resolution of ties, I used the procedure for set A, and the Set A data, to resolve the tie. This occurred in 2 out of 62 cases.
5. Compared with the original word lists, Set C, there are 16 differences with Set A, and, 14 differences with Set B.

#### *Step 5: Test the internal reliability of the dictionaries*

To test the internal reliability of the specific words within each category, I followed Pennebaker et al.'s (LIWC2007) procedures to calculate Cronbach alphas, both the binary and raw/uncorrected alphas, for each category. For each word dictionary (Set A, B, and C), I created a dictionary file for each word category. Next, I ran LIWC with the dictionary files and used the LIWC outputs to calculate Cronbach alphas in SPSS. The raw or uncorrected alphas are based on the percentage of use of each of the category words within the texts. The binary alphas are computed on the occurrence/non-occurrence of each dictionary word (i.e., converting the usage of each of the dictionary words within a given text into either a 0 (not used) or a 1 (used one or more times)). Based on the results of the Cronbach test, I used the dictionary Set B in my text analysis in this study. The Cronbach alphas reported in Table 2.2 and 2.4 are based on dictionary B.

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