

Client Perceptions of Auditor Characteristics and Auditor-Related Behaviors Predict Client  
Acceptance of Public Sector Audit Recommendations

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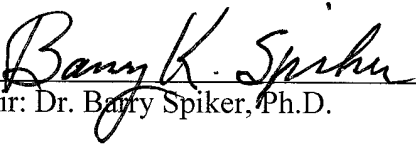
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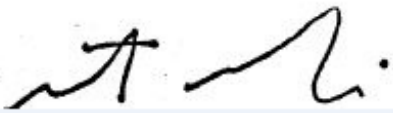
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## Abstract

Local government auditing has been under scrutiny due to findings of substandard audit quality. Some infamous cases local government frauds have pointed to the need for greater oversight and use of audit findings. The results of audits do not come to fruition if local governments do not implement auditor recommendations. The purpose of this non-experimental, quantitative study was to determine whether the perceptions of local government managers' in Minnesota concerning audit quality predicted their adoption of audit recommendations. Minnesota was the study location because manager perceptions of state led audits with consistent standards across municipalities could be used, thus, minimizing some potential confounding variables. A 7-point Likert survey was used to collect data from managers who were recruited through a professional organization. A sample of 54 allowed for adequate power for a regression analysis; the goal was to determine whether adoption of recommendations was predicted by perceived audit quality as proxied by operationalizing three auditor behaviors: due diligence of the auditors, quality control measures taken by the auditors, and relationships with the clients. These relationships were tested using four hypotheses: each of the three predictors proved to have a simple linear relationship with the outcome variable of auditor adoption of recommendations; for the fourth hypothesis, these three predictors jointly and significantly predicted the outcome variable. However, in the multiple regression, due diligence of the auditors did significantly contribute to the explained variance in the outcome variable. Although due diligence is associated with behavioral attributes of quality, a conclusion was that due diligence might not play a role in manager adoption of recommendations in the context of state led audits. One practical implication is that the perception of local governments could be improved concerning state auditor relationships with local managers and auditee knowledge of quality control by state

auditors. Localities across the country may use differing audit procedures and standards, and along with other contextual variables, these may influence manager perceptions of audit quality and tendency to adopt recommendations. Future studies might be devised to examine localities nationwide where contextual variables which may confound results are well-controlled similarly this study.

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## Chapter 1: Introduction

Ineffective financial oversight and management within state and local governments has been an ongoing concern for researchers (Aikins, 2013, 2012; Deis & Byus, 2016; Matkin, 2010b; Modlin, 2016; Sneed, Sneed, & Boozer, 2015), the federal government Government Accounting Office ([GAO];1986, 2007, 2012, 2016), and state and local governments (Aikins, 2013; Cagle & Pridgen, 2015; Modlin, 2016; Sanger, 2013). As reported by the GAO and the President's Council on Integrity and Efficiency (PCIE) Report, 34% of local governments audits examined were substandard (Deis & Byus, 2016; GAO, 2007; Matkin, 2010b; PCIE, 2007). It remains debatable as to whether this situation has improved given that some studies show improvement (Carslaw, Pippin, & Mason, 2012; López & Peters, 2010; Modlin, 2016) where others show none for the quality of local government audits (Aikins, 2015; Fitzgerald & Giroux, 2014; GAO 1986,1989, 2016; López & Peters, 2010; Samelson, Lowensohn, & Johnson, 2006). External auditing is an important component of effective oversight of local governments; however, the effectiveness of these audits depends on the effectual use of auditor recommendations. It is unclear how consistently local managers choose to implement these recommendations (Aikins, 2012; Alzeban & Sawan, 2013, 2015; Knechel, Krishnan, Pevzner, Shefchik, & Velury, 2012; Kilgore, Harrison, & Radich, 2014; Samelson et al., 2006).

Of the many factors that can influence audit effectiveness and quality, some characteristics of the auditors and the process influenced managers' perceptions and satisfaction with the value and quality of an audit (Aikins, 2012, 2015; Alzeban & Sawan, 2015; Carcello, Hermanson, & McGrath, 1992; Behn, Carcello, Hermanson, & Hermanson, 1997). In both the public and private sectors, negative auditee perceptions and satisfaction may decrease their

adoption of recommendations (Aikins, 2013, 2012; Alzeban & Sawan, 2015; Burton, Emett, Simon, & Wood, 2012; Samelson et al., 2006).

Local governments are subject to different types of audit depending upon state and federal regulations: internal local audits, external independent audits initiated by the local and state managers (Khumawala, Marlowe, & Neely, 2014; Ruppel, 2016), and mandated federal audits per the U. S. Single Audit Act of (1984, [1996]; Cagle & Pridgen, 2015) that are implemented by the states. The Single Audit Act (1984, [1996]) mandates at least one audit every year to determine whether federal dollars allocated to local governments are under effective internal control. In contrast, federally mandated auditing in the private sector is more comprehensive than for the local public sector. Congress enacted the Sarbanes Oxley Act (SOX, 2002) to ensure transparency in reporting and oversight, partly by enforcing that top leadership personally certify the accuracy of financial information, and by requiring involvement of independent external auditors (Deis & Byus, 2016; Malik, 2014; Sneed et al., 2015; SOX, 2002). However, the SOX legislation does not extend to state and local governments, and local government managers are not personally responsible, as are corporate leaders (SOX, 2002). Because the risks of litigation may be lower for local municipalities, the potential penalties due to SOX regulation may press private sector audits to higher quality and fuller implementation of recommendations (Defond & Zhang, 2014; Franzel, 2014; López & Peters, 2010; Malik, 2014). As a result, local manager's tendency to discount auditor recommendations may be greater than in the private sector. A better understanding of these issues through research is needed; however, differences in auditing requirements and procedures across states and localities make comparisons and generalizations difficult (Aikins, 2012; Cagle & Pridgen, 2015; Khumawala et al., 2014; Modlin & Stewart, 2014).

## Background

The increased interest in financial accountability for local public-sector government is appropriate given public awareness of needs for local fiscal responsibility. Poor auditing practices (Aikins, 2012; Carslaw et al., 2012; Elder, Lowensohn, & Reck, 2015; GAO, 1986, 1989, 2007, 2012, 2016; PCIE, 2007; López & Peters, 2010; Modlin & Stewart, 2014; Sneed et al., 2015), and related cases of fraud have brought these issues to public awareness (Beckett-Camarata, 2014; Denison & Gibson, 2013; Elder & Yebba, 2017; Modlin & Stewart, 2014; Phillips & Dorata, 2013; Wells & McFadden, 2010). Some notable cases of fraud were a part of the motivation for past regulatory changes and attention to the cost-effectiveness of local government spending (Beckett-Camarata, 2014; Denison & Gibson, 2013; Wilbanks, Hermanson, & Sharma, 2017; Wells & McFadden, 2010). One case of such fraud was a scandal over property tax assessments in Washington D.C. (Wells & McFadden, 2010). Employees in local government embezzled approximately fifty million dollars from this system. This was possible because internal accounting controls over applications for reimbursements of overpayment claims were nearly non-existence, and effective auditing did not take place.

In response to fraud, malfeasance, and lack of oversight, there have been changes in the federal regulatory environment for the public and private sectors over the last several decades (Single Audit Act of 1984 [1996]; SOX, 2002). Some documentation of poor auditing practices for the public sector comes from the GAO and the Whitehouse via a PCIE study (GAO, 2007; PCIE, 2007), where federal auditors examined a nationwide sample of local government audits to assess their quality. Their efforts showed that approximately 47% of sampled audits were of unacceptable quality (Carslaw et al., 2012; PCIE, 2007). The ongoing GAO evaluations of the effectiveness of the Single Audit Act (1984, 1996) (GAO, 1986, 1989, 2007 2016; U.S.

Department of Labor, 2006) for improvements in local auditing, suggest that more oversight and higher quality of audits are needed at local levels. However, there are widely varying practices from state to state as to how state departments function and the procedures they use (Aikins, 2012; Cagle & Pridgen, 2015; Carslaw et al., 2012; Rich & Zhang, 2014; Samelson et al., 2006), and this decreases effective comparisons across jurisdictions as to assessment of local auditing quality (Khumawala et al., 2014). Some states require local internal audits, external audits of local governments and state-led audits in addition to or for compliance with the Single Audit Act of 1984 (1996). Partly for this reason, the study included mandated audits carried out by state teams to facilitate a consistent assessment of auditing effectiveness across localities for that state.

There is debate as to whether the quality of local government audits have improved since the Single Audit Act was enacted (Cagle & Pridgen, 2015; Carslaw et al., 2012; Elder et al., 2015; GAO, 1989, 2016; López & Peters, 2010; Sneed et al., 2015). Part of this debate derives from the issues that there are no consensus definitions for auditing quality, satisfaction, and effectiveness (Knechel et al., 2012; Kilgore et al., 2014). In the studies discussed in more detail below (Carslaw et al., 2012; Cagle & Pridgen, 2015; Kilgore et al., 2014; López & Peters, 2010), the numbers of audit findings identified by auditors served as a proxy for audit quality, therefore, defining quality within research purposes. For some study contexts, where the numbers of findings may reflect rigor in the course of an audit, this was a useful way to operationalize audit quality (DeAngelo, 1981; Cagle & Pridgen, 2015; Carslaw et al., 2012; Deis & Giroux, 1992; Kilgore et al., 2014; López & Peters, 2010; Samelson et al., 2006). For example, using the numbers of reportable findings as an indicator of quality/effectiveness, Carslaw, Pippin, and Mason (2012) found evidence that auditors who worked for state governments found more reportable items than did private sector CPA auditors hired to carry out mandated single audits

across nine states. Similarly, Cagle and Pridgen (2015) found that public sector auditors working across localities in a single state produced higher quality audits (that is, greater numbers of findings) than did private sector firms performing public auditing. These authors indicated that public sector auditors were effective, and thus, there may be some improvements in local auditing procedures since federal regulations mandated yearly local state audits. However, the presence of regulatory changes in the private sector may have affected the quality of auditing services in the public sector, which makes public auditing quality assessment subject to further interpretation. In contrast to the studies described above showing that local public auditors may produce higher quality audits, López and Peters (2010) found in a nationwide sample that after the enactment of SOX legislation, which was meant to regulate private sector corporate auditing, private external auditors of local governments reported larger numbers of auditing findings than did publically employed state auditors. To assess the quality and effectiveness of these audits, these authors used several variables as predictors of audit quality, including auditor industry experience, and the timeliness of auditor reporting. In the studies by Cagle and Pridgen (2015) and Carslaw, Pippin, and Mason (2012), the authors sampled audits from a limited geographic region, and consequently, any advantage for state audit teams may be due to the knowledge of specific jurisdictions and may not be generalizable. Further, the possible “spill over” effect from federal SOX (2002) legislation, which may have contributed to improvement of external private auditor performance in the public sector (Kimmel, Weygandt, & Kieso, 2011; Matkin, 2010a; López & Peters, 2010; Sneed et al., 2015), was not apparent in some of the studies (Cagle & Pridgen, 2015; Carslaw et al., 2012). The SOX Act (2002) applies only to private sector entities that trade their securities publically. Further, researchers debate the overall effectiveness of SOX within the private sector in itself, and this makes conclusions concerning any sweeping effects

across both sectors less tenable (Coates & Srinivasan, 2014; Knechel, 2015; Malik, 2014; Sneed et al., 2015). Thus, evaluating the impact of regulatory environment on auditing quality is complex given that there may be cross-sector influences of targeted federal regulations, which are exceedingly complicated (Khumawala et al., 2014; Franzel, 2014). The SOX Act (2002) is complex legislation with many parts, and this coupled with potential costliness for implementation (Franzel, 2014; SOX, 2002), has led to much debate as to whether these types of regulations should be implemented at state and local levels (Elder et al., 2015; Knechel, 2015; Phillips & Dorata, 2013; Sneed et al., 2015).

The lack of consensus definition for audit quality may contribute to some researchers' interchangeable use of the terms audit quality, effective audit, and audit satisfaction (Aikins, 2012; Alzeban, 2015; Alzeban & Sawan, 2015; Behn et al., 1997; Carcello et al., 1992; Djati & Payamta, 2013; Modlin & Stewart, 2014; Schroeder, Solomon, & Vickrey, 1986; Samelson et al., 2006; Christensen, Glover, Omar, & Shelley, 2015). Further, stakeholders with different roles in the audit process sometimes have their distinct perceptions of audit quality, satisfaction, and effectiveness (Kilgore et al., 2014; Knechel et al., 2012; Schroeder et al., 1986). In some contexts, the variables such as numbers of findings or years of auditor experience do not capture fuller dimensions of constructs related, such as auditee perceptions of quality and satisfaction with service (Kilgore et al., 2014; Knechel et al., 2012). To study audit quality, some researchers have focused on perceptions of auditees, more so, than directly measured post-audit variables such as counts of audit findings. More specifically, in studies where authors have tested the attributes and dimensions of auditee perceptions of quality, there were few significant distinctions between attributes associated with quality and satisfaction (Behn et al., 1997; Carcello et al., 1992; Samelson et al., 2006). Further, in these seminal studies, there were few

differences between the perceptions of auditees and auditors regarding quality and satisfaction. This result may be important because if the auditee does not perceive the auditors to be competent, then they may not value the audit reports and may not implement the recommendations (Aiken, 2012, 2013; Alzeban & Sawan, 2013, 2015; Kilgore et al., 2014; Knechel et al., 2012; Samelson et al., 2006).

Auditor characteristics studied within the private and public sectors, such as auditor industry experience or expertise and firm size, and level of audit independence, are positively associated with auditor and auditee perceptions of quality (Aikins, 2012; Alzeban & Gwilliam, 2012; Alzeban & Sawan, 2015; Behn et al., 1997; Carcello et al., 1992; Modlin & Stewart, 2014; Samelson et al., 2006). In two seminal studies, Behn, Carcello, Hermanson, and Hermanson (1997) and Carcello, Hermanson, and McGrath (1992) supported perceptions of auditor behaviors as a proxy for quality and effectiveness of auditing. Their findings indicated that greater awareness of client needs, greater involvement of leadership, continuing auditor interactions with an auditee committee, auditor industry expertise, prior experiences with the client and due diligence of field work are all positively associated auditee perceptions of quality and effectiveness. Auditee satisfaction was positively associated with strong working relationships and communications between the auditee leadership and the auditors. In these studies, the perspectives of auditees and auditors were not significantly different, and both were significantly associated with quality and satisfaction. These results are in contrast to evidence supporting that stakeholders tend to have differing perspectives on audit quality (Kilgore et al., 2014; Knechel et al., 2012; Schroeder et al., 1986). Using the behavioral and perceptual quality attributes previously developed for use in the private sector (Behn et al., 1997; Carcello et al., 1992), Samelson et al., (2006) studied the public sector and confirmed results found in studies of



the private sector as described above. These authors emphasized the importance of communication between the stakeholders as pivotal to achieving auditee satisfaction in the auditing process. This result served as part of the motivation for the to determine whether auditor behaviors predicted implementation of audit report recommendations.

Interestingly, the international standards for quality management (ISO), accepted by practitioners to be indicative of auditing effectiveness (Beckmerhagen, Berg, Karapetrovic, & Willborn, 2004; Badura & Saidin, 2013), are intuitively similar to the quality and satisfaction attributes discussed above for auditor behaviors and auditor or auditee perceptions. In the ISO standards, effectiveness is related to the perceived value of an audit (perceived quality and competence of the auditors), the minimization of risks (for example, the numbers of findings or exceptions identified), and the creation of positive organizational culture. These standards emphasize collaboration and clarity between auditors and auditees in each of these steps: 1) planning audit schedule, 2) planning audit process, 3) conducting the audit, 4) reporting on the audit, 5) follow-up issues and improvements. These criteria for audit effectiveness and/or quality are similar to some of the attributes for auditee perceptions of quality and satisfaction as developed in seminal studies described above (Behn et al., 1997; Carcello et al., 1992; Samelson et al., 2006), which are a part of the basis for this proposal. These quality and satisfaction auditor attributes are associated with effectiveness as more specifically defined and interpreted by some authors (Alzeban & Sawan, 2015; Badara & Saidin, 2013; Beckmerhagen et al., 2004; Djati & Payamta, 2013; Ruppel, 2016). Bianchi and Williams (2015) suggested a model of financial and performance management for local government systems that included dynamics of employee behavior in response to attempts to measure effectiveness. The modeling is consistent

with the ISO standards that include behavioral components, but the model is based on a dynamic systems approach that does not require a step-wise analysis of financial performance.

In some studies, constructs defined similarly to those discussed above, but concerning auditors' perceptions of quality and satisfaction, were predictive of adoption public sector audit recommendations. However, these authors do not address the issues from the auditee perspectives (Aikins, 2012; Djati & Payamta, 2013). Other authors also addressed these issues through the views of auditors but did not investigate these issues concerning external auditor behaviors (Alzeban & Sawan, 2015; Djati & Payamta, 2013), and did not do so not within the U.S., leaving the potential for differences in cultural interpretations of auditor behaviors. Through several studies auditor characteristics studied within the private and public sectors, variables such as auditor industry experience or expertise and firm size, and level of audit independence are positively associated with auditor and auditee perceptions of quality (Abbott, Brown, Higgs, 2015; Aikins, 2012; Alzeban & Gwilliam, 2012; Alzeban & Sawan, 2015; Behn et al., 1997; Carcello et al., 1992; Modlin & Stewart, 2014; Samelson et al., 2006).

Researchers propose that auditee implementation of audit findings relates to their perceptions of auditor performance and behaviors. However, there is little research available on these issues within public sector auditing (Aikins, 2012; Alzeban, 2015; Alzeban & Sawan, 2015; Behn et al., 1997; Carcello et al., 1992; Djati & Payamta, 2013; Lenz & Hahn, 2015; Modlin & Stewart, 2014; Schroeder et al., 1986; Samelson et al., 2006). Aikins (2012) found that auditors perceived that auditees valued an auditor's professional status, due diligence, report and recommendation quality, relationships with local government auditees, and the frequency of auditor follow-up actions as evidence of quality. Auditors' perceptions of these factors were significant predictors of auditee adoption of audit recommendations. These results from Aikins

(2012) suggested that the auditor's performance, behavior, and characteristics could be predictive of adoption of recommendations from the auditee's point of view. However, it remains unknown as to whether auditee perceptions of these variables can predict adoption of recommendations, and this is a critical finding to validate. In a study of auditee perceptions of auditing in the public sector, Samelson, Lowensohn, and Johnson (2006) found that auditee satisfaction was positively associated auditor expertise, responsiveness to client needs, professionalism, understanding of client procedures and processes, and with auditees perceived audit quality. Note that these attributes are consistent with international definitions for effectiveness as described above. Within the public sector, researchers have not addressed auditee viewpoints of audit quality and behavioral characteristics of auditors as predictors of auditee tendency to adopt of recommendation (Aikens, 2012; Djati & Payamta, 2013; Modlin & Stewart, 2014).

### **Statement of the Problem**

The GAO reported a significant portion (34%) of local governments received unacceptable auditing services (GAO & PCIE, 2007; [National Single Audit Sample Report]). Local government auditing has been a continuing concern as to quality and implementation of audit recommendations (Aiken, 2012; Alzeban & Sawan, 2015; GAO, 2012, 2016; Matkin, 2010b; Sneed et al., 2015). The problem addressed in this study is that local government managers sometimes do not adopt and implement audit recommendations (Aikins, 2012; Alzeban & Swain, 2015). Lack of adoption of recommendations may occur if auditees' perceptions of quality and satisfaction were low (Aiken, 2013; Lenz & Hahn 2015; Knechel et al., 2012; Kilgore et al., 2014; Samelson et al., 2006); thus, reducing the potential effectiveness of an audit (Aikins 2012; Djati & Payamta, 2013; Modlin and Stewart (2014). Modlin and

Stewart (2014) found that researchers have not addressed the lack of implementation of audit findings from the auditee point of view and I have not found any peer-reviewed sources, address this issue within the public sector. Analyzing this problem from the auditors' viewpoints, Aikins (2012) found several variables that predicted managers' adoption of internal auditor recommendations: auditor's professional status, due diligence, action items, recommendations, relationships with clients, and follow-up actions by auditors. These results from Aikins (2012) point to the possibility that these variables concerning auditor performance and characteristics may also be predictive of auditee adoption of recommendations when examined from the auditee's viewpoints. Audit practices and types of audits can vary across states and locales, as can local managers perceptions of their context (Aikins, 2012; Cagle & Pridgen, 2015; Carslaw et al., 2012; Rich & Zhang, 2014; Samelson et al., 2006). Thus, local managers' quality perceptions and implementation of recommendations, and hence effectiveness of auditing, are not well understood (Aikins, 2012; Alzeban & Gwilliam 2012; Alzeban & Sawan, 2013, 2015; Carslaw et al., 2012; Djati & Payamta, 2013; Modlin & Stewart, 2014; Warming & Jensen, 1998). Insights into local government managers' reticence to accept auditor recommendations may contribute to understanding public audit quality and effectiveness.

### **Purpose of the Study**

The purpose of this non-experimental, quantitative study was to determine whether the perceptions of local government managers' in Minnesota concerning audit quality predicted their adoption of audit recommendations. To define audit quality and adoption of recommendations, I used some of the variables used by Aikins (2012), which are behavioral attributes of the auditor that proxy for audit quality. These predictor variables were operationalized for perceived audit quality: due diligence of the auditors, quality control measures taken by the auditors, and

relationships with the clients. To collect data, I used an internally valid, 7-point Likert-style survey (Aikins, 2012) that was developed from prior studies to measure auditor behaviors that proxy for quality (Samelson et al., 2006; Schroeder et al., 1986). I constructed a regression model using the predictors of the dependent variable, adoption of audit recommendations. A predictor variable included by Aikins (2012) was auditor independence and auditor professional status. I excluded these variables because Minnesota does not affiliate specific auditor teams with localities and the constituencies of these teams are consistent and predetermined by the State Auditors' Office (Minnesota Office of the State Auditor, 2016). The state deems these auditors as professionally competent and they are similar in professional status regardless of the specific team involved in a local audit. I am not comparing the perceived independence of auditors or professional status to local internal auditors or state team auditors across localities, and these variables are not relevant to the study. The definitions for the variables are in Table 1. State mandated audits may have qualities of internal and external audits (Cagle & Pridgen, 2015; Modlin & Stewart, 2014; Rich & Zhang, 2014). By using audits conducted by the state, which have consistent standards as set by Minnesota's State Office of Auditing, variables are controlled which would be associated with differing standards for internal auditing across independent local municipalities (Rupple, 2016); therefore, this variable of audit type need not be considered in this study. For the study, use of state-led audits provides control for the influence of several variables associated with perceptions of quality and satisfaction for external audits. These include external audit firm size, audit costs, and auditor professional status (Carslaw et al., 2012; Deis & Giroux, 1992; Modlin & Stewart, 2014; López & Peters, 2010; Lowensohn, Johnson, Elder, & Davies, 2007; Samelson et al., 2006). Within Minnesota where standards are set by the state office of auditing, the office regulates costs and the consistency with audit team

constituencies. There are 1015 independent municipalities subject to state audit. A power analysis yielded an estimated sample size of 77 for a linear regression with three predictors (power of 0.8, type one error of 0.05, and medium size effect, G-power software; Faul, Erdfelder, Buchner, & Lang, 2009). The participants were recruited as volunteers through a professional organization: Minnesota Government Financial Officers Association (MFOA). I took a study sample of 54 senior financial managers of local governments from the population of 1015 local municipalities within Minnesota, which are those required to obtain a state audit based on the municipality budget size.

### **Nature of the Study**

The purpose of this quantitative, non-experimental study is to determine whether local government managers' perceptions of audit quality can predict their adoption of audit recommendations. This goal can be accomplished using a quantitative design because it allowed for hypothesis testing and generalizability of the results (Vogt, Gardner, & Haeffele, 2012). I used a multiple regression analysis because this allowed for testing of a predictive relationship between the variables of interest. Qualitative methods are not as useful for this study because the goal is not to explore details of individuals' personal experiences (Vogt et al., 2012; Miles, Huberman, & Saldaña, 2014).

The aim of this study was to examine auditee perceptions of state-mandated audits/auditors, and auditee implementation of the recommendations across the state of Minnesota. The participants were financial managers in local county and municipal jurisdictions that participated in a state-led audit within the last two years. After obtaining NCU internal review board approval, the participants were recruited as volunteers through a link on the MFOA website. I selected 54 local managers from those who volunteered. The volunteers came from

among the population of 1015 local municipalities within Minnesota, which are required to obtain a state audit based on the municipality budget size. This estimated sample size is based on a power analysis, which yielded an estimated sample size of 77 for a linear regression with three predictors (power of 0.8, type one error of 0.05, and medium size effect, G-power software; Faul et al., 2009). The actual power of the statistical test for the model was 1.0. To collect these data, I used an internally valid, 7-point Likert-style survey similar to that used in a previous investigation (Aikins, 2012). The predictor variables were behavioral attributes of auditors which have been used in other studies as proxies for perceived audit quality (Aikins, 2012; Kilgore et al., 2014): due diligence of the auditors, quality control measures taken by the auditors, and relationships with the clients (Aikins, 2012; Samelson et al., 2006). The dependent variable is the adoption of auditor recommendations as described in Table 1. To collect data, I used an internally valid, 7-point Likert-style survey (Aikins, 2012) that was based on prior surveys measuring behavioral attributes of auditors as a proxy for quality (Samelson et al., 2006; Schroeder et al., 1986). The survey was tested for internal consistency and found to be reliable (Aikins, 2012).

The test of the regression model demonstrated the strength of the relationship between these predictors and the dependent variable in the context of local public-sector auditing in Minnesota. Due diligence of auditors is known to predict auditee satisfaction and perceptions of quality in both the private and public sectors (Behn et al., 1997; Carcello et al., 1992; Samelson et al., 2006). However, the relationship between perceived due diligence and adoption of auditor recommendations is unexplored by researchers within the public sector. Researchers have established that auditee perceptions of auditor quality control/planning procedures and auditor-

client relationships influence client's overall perceptions of quality (Aikins, 2012; Behn et al., 1997; Carcello et al., 1992; Samelson et al., 2006).

After obtaining NCU IRB approval, senior managers within local governments were access an online survey. Using an anonymous online survey, I solicited members of the Minnesota Government Financial Officers Association by passive recruiting through their website. In states where there are no mandated standards across jurisdictions and mandated state team-led audits, local internal auditors and private CPA firms may conduct audits by regulations that differ across localities (Aikins, 2012; Cagle & Pridgen, 2015; Carslaw et al., 2012; Rich & Zhang, 2014; Ruppel, 2016; Samelson et al., 2006). Due to these potential differences in local auditing standards, I am choosing to examine state-led audits within Minnesota. Minnesota's State Office of Auditing has set standards for state-mandated audits, and by examining only state-led audits, I can reduce the impact of differing standards across independent local municipalities. By examining state audits, several potential confounding and control variables are controlled inherently; these include audit team size, cost, (Carslaw et al., 2012; López & Peters, 2010; Samelson et al., 2006), auditor independence, and auditor professional status (Aikins, 2012; Cagle & Pridgen, 2015; Rich & Zhang, 2014). States with mandated local auditing typically regulate the consistent use of resources and costs across municipalities, audit team constituencies, and auditor professional standards (Behn et al., 1997; Modlin, 2016; Ruppel, 2016). Further, I am not comparing the perceived independence of auditors or professional status of state team auditors across localities; therefore, these variables have little relevance to the study.



## Research Questions

The research question I used in this quantitative study was:

**RQ1.** Do the perceptions of local government managers of audit quality, as measured by their perceptions of auditor due diligence, auditor quality control, and quality of auditor-client relationships predict local government adoption of government state auditor's recommendation?

## Hypotheses

**H1<sub>0</sub>.** Local government managers' perception of audit quality as measured by auditor due diligence does not significantly predict adoption of state audit recommendations

**H1<sub>a</sub>.** Local government managers' perception of audit quality as measured by auditor due diligence does significantly predict adoption of state audit recommendations

**H2<sub>0</sub>.** Local government managers' perception of auditor quality as measured by auditor quality control does not significantly predict adoption of state audit recommendations.

**H2<sub>a</sub>.** Local government managers' perception of audit quality as measured by auditor quality control does significantly predict adoption of state audit recommendations.

**H3<sub>0</sub>.** Local government managers' perception of audit quality as measured by the quality of auditor-client relationships does not significantly predict adoption of state audit recommendations.

**H3<sub>a</sub>.** Local government managers' perception of audit quality as measured by the quality of auditor-client relationships does significantly predict adoption of state audit recommendations.

**H4<sub>0</sub>.** The predictors auditor due diligence, auditor quality control, auditor client relations do not jointly and significantly predict adoption of state auditor recommendations.

**H4<sub>a</sub>.** The predictors auditor due diligence, auditor quality control, auditor client relations do jointly and significantly predict adoption of state auditor recommendations.

## Significance of the Study

Research concerning the quality of local government auditing is driven by the prevalence of fraud in local government (Denison & Gibson, 2013; Phillips & Dorata, 2013; Sneed et al., 2015; Wells & McFadden, 2010), and evidence for poor auditing practices (Carslaw et al., 2012; GAO, 1986, 1989, 2007 2016; PCIE, 2007; U.S. Department of Labor, 2006). There is more research devoted to the private sector than to public sector audit quality, and it remains unclear as to whether private-sector audit quality research extrapolates fully to the public sector (Aikins 2012; Modlin & Stewart, 2014; Knechel et al., 2012; Samelson et al., 2006). Through this research, additional knowledge concerning influences on quality/satisfaction of public auditing, and specifically, more understanding of the relationships between auditee perceptions of quality/satisfaction and auditor characteristics and behaviors was found.

Federal regulation through the SOX act (2002) mandates that recommendations from private sector audits of corporate and publicly held entities must be implemented within a specified period (SOX, 2002). However, within the public sector there are no federal regulatory requirements that auditor recommendations be implemented, and state and local requirements vary across localities, with some having no specified requirement (Aikins, 2012; Cagle & Pridgen, 2015; Carslaw et al., 2012; Rich & Zhang, 2014; Samelson et al., 2006). These conditions suggest that local government auditees may adopt and implement auditor recommendations less frequently and less fully than private sector leadership may (Aikins, 2012). The aim of the research was to understand the relationships between auditor characteristic and behaviors and the tendencies for these auditees to adopt recommendations.

As discussed above, auditee perceptions of auditor characteristics and behaviors can influence the perceived quality of an audit (Alzeban & Sawan, 2015; Behn et al., 1997; Carcello

et al., 1992; Modlin & Stewart, 2014; Samelson et al., 2006). Aikins (2012) studied the auditor perceptions of these influences on auditees but not the perceptions of auditees. The dependent variable in this study was auditee tendency to implement audit recommendations. Some researchers found that the perspectives on audit quality differ depending on the role of stakeholders and the specific variable and/or dimension of a variable (Behn et al., 1997; Carcello et al., 1992; Kilgore et al., 2014; Knechel et al., 2012; Schroeder et al., 1986). Thus, some evidence suggests that auditors and auditees have similar perspectives on the influences the composite of quality and satisfaction variables (Aikins, 2012; Behn et al., 1997; Carcello et al., 1992). Researchers have suggested that if auditees do not implement auditor recommendations, then an audit cannot be successful regardless of audit quality (Aikins, 2012, 2013; Djati & Payamta, 2013). The relationships between adoption of recommendations and factors related to perceptions of audit quality and auditor characteristics for the local government sector are not well-understood (Aikins, 2012; Alzeban & Gwilliam 2012; Alzeban & Sawan, 2013, 2015; Djati & Payamta, 2013; Kilgore et al., 2014; Modlin & Stewart, 2014; Warming & Jensen, 1998). Further, the justification for the study of local public-sector auditing comes from acknowledging that technical details for local government auditing are specialized (Samelson et al., 2006). Given the SOX regulations (2002) also may set public and private auditing considerations apart due to complex (Carslaw et al., 2012; Knechel, 2015; Knechel et al., 2012; Matkin, 2010b; López & Peters, 2010) this supports that more research within the public sector may reveal differences in perceptions of audit quality in particular context of this study. In the public sector, auditee perceptions of an auditor's experience influenced their views of auditor quality (Alzeban & Sawan, 2015; Behn et al., 1997; Carcello et al., 1992; Modlin & Stewart, 2014; Samelson et al., 2006), and this suggests that auditors should be well matched to the job. Only state-led

government audits were a part of this study, and this leads to an examination of auditing under conditions where auditor expertise is better controlled with other auditor related factors under examination.

### **Definitions of Key Terms**

**Auditee satisfaction.** Perception of the audit client that the audit adds value to the organization reduces risks and helps in achieving goals (Carcello et al., 1992).

**Auditor recommendations.** These are courses of action suggested by the auditor in line with the objectives of the audit based on data collected during the audit (Aikins, 2012).

**Internal audit.** Audits carried out as an independent function within the organization to provide management with assurance that an organization's risk management, governance, and internal control processes are operating effectively (Alzeban et al., 2015).

**External audit.** This audit is an outside statutory auditors' examination of the financial statements prepared by the organization. The purpose is to provide an opinion to shareholders on the reliability and credibility of these statements (López & Peters, 2010).

**Single Audit Act (1984).** Known as the OMB A-133 audit, Single Audit Act (1984) is an examination of an entity that expends \$750,000 or more of received for its operations (Single Audit Act, 1984).

**Sarbanes and Oxley Act (2002).** A law passed by the U.S. Congress to protect shareholders and the public from accounting errors and fraudulent practices in the organizations, and to improve the accuracy of corporate reporting (SOX, 2002).

## Summary

Ongoing reporting from the GAO and the PCIE Report showed that an unacceptable fraction of audits for local governments was substandard (Matkin, 2010b; GAO, 2007; PCIE, 2007). It is unclear as to whether this problem has improved because there are mixed results from studies of the quality of local government audits (Aikins, 2015; Carslaw et al., 2012; GAO 1986, 1989, 2016; López & Peters, 2010; Samelson et al., 2006). Federal regulations, most notably The Single Audit Act (1984, 1996) for state and local governments and SOX mandates particular procedures and controls as may be appropriate for each type of audit. However, it remains debatable as to the effectiveness of these levels of regulation for each level of government (Carslaw et al., 2012; Knechel, 2015; Malik, 2014; Sneed et al., 2015).

Behavior and characteristics of the auditors and audit processes can influence auditee perceptions of quality and satisfaction of an audit (Aikins, 2012, 2013; Alzeban & Sawan, 2015; Behn et al., 1997; Carcello et al., 1992). Negative perceptions of auditor interactions with auditees and their characteristics may decrease auditees' adoption of recommendations in both the public and private sectors, (Aikins, 2012, 2013; Alzeban & Sawan, 2015; Burton et al., 2012; Samelson et al., 2006). However, there is much less available research concerning public sector audits than for the public sector (Aikins, 2012; Alzeban, 2015; Alzeban & Sawan, 2015; Behn et al., 1997; Carcello et al., 1992; Djati & Payamta, 2013; Lenz & Hahn, 2015; Modlin & Stewart, 2014; Samelson et al., 2006; Schroeder et al., 1986). The purpose of this quantitative, non-experimental study is to determine whether local government managers' perceptions of audit quality can predict their adoption of audit recommendations. This purpose addresses the problem in this study concerning that local government managers sometimes do not adopt and implement audit recommendations (Aikins, 2012; Alzeban & Swain, 2015).

## Chapter 2: Literature Review

State and local governments have been under increasing scrutiny regarding financial oversight and accountability (Aikins, 2012; Carslaw et al., 2012; Elder et al., 2015; GAO, 1986, 1989, 2007, 2012, 2016; López & Peters, 2010; Modlin & Stewart, 2014; Sneed et al., 2015). This scrutiny is due in part to public concerns over fraud and financial pressures from the most recent recession (Denison & Gibson, 2013; Phillips & Dorata, 2013; Sneed et al., 2015; Wells & McFadden, 2010). Consequently, regulation of auditing procedures and audit quality have been of increased interest to researchers (Aikins, 2013, 2012; Elder et al., 2015; López & Peters, 2010; Matkin, 2010b; Modlin & Stewart, 2014; Sneed et al., 2015). Moreover, the federal government (Government Accounting Office [GAO] 1987, 2007, 2012, 2016; Matkin, 2010b), state and local governments (Aikins, 2013, 2012; Cagle & Pridgen, 2015; Modlin & Stewart, 2014; Sneed et al., 2015) have a vested interest in audit quality and effectiveness. However, audit quality is a concept with no clear consensus definition among researchers (Kilgore et al., 2014; Knechel et al., 2012). Further, the stakeholders in the audit process can have different perceptions definitions of audit quality in some specific circumstances; and therefore, researchers should be cognizant of how they measure quality within specific contexts (Behn et al., 1997; Carcello et al., 1992; Kilgore et al., 2014; Knechel et al., 2012; Schroeder et al., 1986). Significant constructs that emerged from the study of audit quality are the perceptions of satisfaction, auditor characteristics, and the behavioral attributes of auditors and auditees (Aikins, 2012, 2013; Alzeban & Gwilliam, 2012; Alzeban & Swain, 2015; Behn et al., 1997; Cagle & Pridgen, 2015; Carcello et al., 1992; Christensen et al., 2015; Johnson, Lowensohn, Reck, & Davies, 2012; Kilgore et al., 2014; Knechel et al., 2012; Lowensohn et al., 2007; Modlin & Stewart, 2014; Samelson et al., 2006; Schroeder et al., 1986; Warming-Rasmussen & Jensen, 1998). As is

discussed in detail within this review, researchers have considered concepts of quality and satisfaction as distinct constructs (Bansal & Taylor, 2015; Caruana, Money & Berthon, 2000), but through my analyses of the research, I argue below that these are difficult concepts to distinguish in research practice. The study concerned auditee perceptions of audit quality and satisfaction, and how these may predict auditee adoption of recommendations. Acceptance, adoption, timeliness of implementation, and client recommendations are issues for auditing in both private and public sector; however, less research information is available for the local public sector (Aikins 2012; Alzeban & Swain, 2015; Burton et al., 2012; Carslaw, Mason, & Mills, 2007; Carslaw et al., 2012; Malik, 2014; Matkin, 2010a, 2010b; Modlin & Stewart, 2014; Phillips & Dorata, 2013; Rice & Weber, 2012; Sneed et al., 2015).

One of the most significant differences between private and public auditing is the federal and state regulations as mandated by state and federal statutes (Malik, 2014; Matkin, 2010a, 2010b; Sneed et al., 2015). The federal SOX legislation (SOX, 2002) provides for specific regulations of the implementation of audit recommendation of the private corporate sector. However, much of the focus of researchers studying the private sector auditing concerns effectiveness of SOX, and if this legislation is appropriate for the public sector. Less attention is devoted to details of why clients do not follow through with recommendations in the public sector (Phillips & Dorata, 2013; Malik, 2014; Matkin, 2010b; Rice & Weber, 2012; Sneed et al., 2015). Because SOX regulations do not apply to the public sector (SOX, 2002), and issues of fraud and poor oversight, remain, some have argued that SOX regulations should apply to the public sector (Matkin, 2010b; Sneed et al., 2015). For example, evidence supports that managers in the local governments were sometimes slow and did not implement internal, external, and state auditor recommendations (Aiken, 2012, 2013; Alzeban & Sawan, 2013, 2015; Carslaw et

al., 2007; Modlin & Stewart, 2014). The problem addressed in this proposal concerns the inconsistent or incomplete adherence to auditor recommendations by local government officials. If auditees do not implement recommendations, then an audit cannot be fully successful regardless of audit quality (Aikins, 2012, 2013). However, as explained below, researchers have not fully explored the relationship between adoption of recommendations and perceptions of audit quality and auditor characteristics for the local government sector (Aikins, 2012; Alzeban & Gwilliam 2012; Alzeban & Sawan, 2013, 2015; Djati & Payamta, 2013; Modlin & Stewart, 2014). The consequences of not addressing these issues include the potential for fraud in local governments, increased public concerns, and as a result of these issues, there can be potential for increasing taxes within states and local municipalities (Baber, Gore, Rich, & Zhang, 2013; Denison & Gibson, 2013; Phillips & Dorata, 2013; Wells & McFadden, 2010). Therefore, it is of interest to explore examples of fraud, the regulatory environment for local public auditing, and compare this to outcomes related to private corporate sector auditing.

Because auditing requirements across localities can vary according to type and purpose of local government audits (Aikins, 2012; Cagle & Pridgen, 2015; Carslaw et al., 2012; Rich & Zhang, 2014; Samelson et al., 2006), for the study, it was useful to sample local managers perceptions under similar contexts. Sampling participants across jurisdictions with consistent auditing procedures and requirements can reduce the influence of confounding variables (Cagle & Pridgen, 2014; Elder et al., 2015; Jakubowski, Jakubowski, & Huh, 2002). The purpose of this non-experimental, quantitative study was to determine whether the perceptions of government managers' perceptions of audit quality and some auditor characteristics can predict their adoption of audit recommendations from state-mandated audits in Minnesota. Thus, by focusing on state-led audits across localities within the same state, I reduced some



inconsistencies and influences of confounding variables. Through this review, I explained and related to the purpose of the study with the constructs of audit quality, that is, auditee perceptions of quality and satisfaction, and auditee perceptions of auditor characteristics and behaviors. Specifically, this literature review includes: 1) the need for oversight and regulation of public sector auditing and its relationship to local fraud; 2) federal regulation of private and local public sector auditing; 3) audit quality and its definitions; 4) relationship of audit quality and auditee satisfaction; 4) auditee perceptions of audit quality, satisfaction, and variables related to auditor characteristics.

The literature review derived from scholarly and peer-reviewed articles. I searched online databases and the NCU library to find these articles. The databases included were EBSCOhost, Google Scholar (scholar.google.com), ProQuest, SAGE Journals Online, Science Direct, Taylor & Francis Online, and Web of Science. Keywords and phrases employed in the search were audit quality, audit satisfaction, implementation of audit recommendations, audit compliance, external audit, internal audit, public sector audit, private sector audit, SOX Act (2002), Single Audit Act (1984, 1996), fraud in public sector, audit effectiveness, financial oversight, and audit committee.

### **Need for Oversight and Regulation of Public Sector Auditing**

Due to continuing concerns over the adequacy of state and local audits, Congress passed the Single Audit Act (1984, 1996), with the intent to improve auditing procedure and regulate oversight across state and local governments nationwide. These concerns arise from the GAO, via the PCIE study (GAO, 2007; PCIE, 2007), which examined a sample of government audits for quality issues. They concluded that less than 50 percent of sampled audits were of acceptable quality; they cited approximately 16% of audits as unreliable, and the remaining 36% were

categorized as unacceptable (Carslaw et al., 2012; PCIE, 2007). These findings raised concerns as to the quality of local government audits, in part, because the 2007 PCIE study was performed well after the Single Audit Act (1984, 1996) had been put into legislation and implemented (Elder et al., 2015; Modlin & Stewart, 2014). This observation and the ongoing GAO evaluations of the effectiveness of the Single Audit Act (1984, 1996) (GAO, 1989, 2007, 2016), suggested that more oversight is needed at the state and local levels. Although there is evidence of some improvements in the quality of government audits since the Single Audit Act (1984, 1996; Elder et al., 2015; GAO, 1989, 2016; López & Peters, 2010), the interpretation of results is limited by bound the specific variables studied. Differences across states and localities' procedures (Aikins, 2012; Cagle & Pridgen, 2015; Carslaw et al., 2012; Rich & Zhang, 2014; Samelson et al., 2006), size and budget of a local government (Single Audit Act, 1984, 1996), and specific operational definitions chosen by a researcher can influence the outcomes of a study. For example, as discussed below, how authors defined audit quality can affect the apparent success or effectiveness of an audit (Cagle & Pridgen, 2015; Elder et al., 2015; Kilgore et al., 2014; López & Peters, 2010). In the case of the PCIE single audit study, the evaluations of the local audits sampled were made down to details of how well the auditors met specific fundamental elements for internal accounting control, whether the auditors adequately tested for auditees' compliance, and whether the auditors demonstrated sufficient understanding of a local auditees processes and areas of risk (PCIE, 2007). This is a far deeper analysis than is found in much of the research concerning audit quality. For example, a common measure of audit quality is to report only the numbers of findings (i.e., the exceptions, material weaknesses, and/or reportable issues) in an audit report (DeAngelo 1981; Cagle & Pridgen, 2015; Carslaw et al., 2012; Kilgore et al., 2014; López & Peters, 2010). Using counts of the numbers of reportable

exceptions is consistent with auditing standards within typical local government parameters and researchers have demonstrated these as correlated with audit quality and effectiveness (Cagle & Pridgen, 2015; Carslaw et al., 2012; Deis & Giroux, 1992; Fitzgerald & Giroux, 2014; Kilgore et al., 2014; López & Peters, 2010; Samelson et al., 2006). Because a goal of this study is to provide information to fill the gap in the literature concerning the perceptions of government auditees concerning auditor behavioral attributes of quality and satisfaction as predictors of implementation, counting of auditing exceptions as a measure of quality is not as specifically relevant to the study. As part of this literature review that follows, I explored research results concerning auditor behavioral attributes of quality to provide the basis for the study in local public sectors (Aikins, 2012; Alzeban, 2015; Alzeban & Sawan, 2015; Behn et al., 1997; Carcello et al., 1992; Djati & Payamta, 2013; Modlin & Stewart, 2014; Schroeder et al., 1986; Samelson et al., 2006).

Samelson et al., (2006) summarized their justification for focusing on auditing in the local public sector as related to “the technical requirements of government auditing are sufficiently specialized that private-sector audit quality research findings may not generalize to the government audit sector” (Samelson et al., 2006, p. 18). In general, from results found across these sectors and circumstances, auditee perceptions of auditor expertise and credentials affect perceptions of quality (Alzeban & Sawan, 2015; Behn et al., 1997; Carcello et al., 1992; Modlin & Stewart, 2014; Samelson et al., 2006). Due to the technical nature of public sector audits, and the distinctive state level procedures and regulations (Aikins, 2012; Cagle & Pridgen, 2015; Carslaw et al., 2012; Rich & Zhang, 2014; Samelson et al., 2006), a case can be made for state level auditing carried out by those trained and expert in local government auditing. Further, evidence supporting an association of auditor expertise with auditee perceptions of quality

(Aikins, 2012; Alzeban & Gwilliam, 2012, Alzeban and Sawan, 2015; Modlin & Stewart, 2014; Samelson et al., 2006), can also be argued as support for the use of state auditors. This logic has encouraged local governments to create state auditing departments for these reasons apart from the mandatory implementation of the Single Audit Act (1984, 1996).

**Fraud, Regulation, and Financial Oversight of Local Government.** Some distinctive cases of local government fraud and malfeasance have brought attention and public awareness to the potential inadequacy of local auditing and the need for continued regulation (Denison & Gibson, 2013; Phillips & Dorata, 2013; Matkin, 2010a, 2010b; Rich & Zhang, 2014; Wells & McFadden, 2010). In these cases of fraud, the differences in circumstances and procedures, which exist between locations, point to the need to research these issues at the local level (Denison & Gibson, 2013). For example, in the District of Columbia's Office of Tax and Revenue, embezzlement of \$50 million occurred due to officials who manipulated property tax assessments over 20 years. The auditors of this office exhibited poor internal control over applications for property tax refunds. This flaw in the system allowed an employee to funnel fraudulent applications through the system and to defraud the district of approximately \$50 million dollars (Sneed et al., 2015; Wells & McFadden, 2010). The lack of structural reporting in place within this particular system and the lack of adequate support staff portended this employee's ability to commit this fraud with criminal intent.

In a case study of Jefferson County Alabama, Denison and Gibson (2013) showed that local county management incompetence led to significant financial losses. This case differs from the District of Columbia property tax scandal because it was not due to criminal intent of an individual. This county suffered a bankruptcy after the county board voted to convert 94% of its fixed rate debt bonds into adjustable rate issues with multiple interest rate swaps (Denison &

Gibson, 2013). At time leading up to the 2008 financial crisis in the U. S., this was a more common strategy for businesses than local governments, but this strategy balanced risk and growth under appropriate circumstances for either private or public entities. However, as this recent economic crisis accelerated, the county experienced a decrease in revenues, making this financial leveraging risky and leading to the bankruptcy of the county. The bankruptcy resulted primarily from poor financial decision-making by a county board with little experience and oversight (Denison & Gibson, 2013; Sneed et al., 2015). In a similar but much larger case, Orange County California went bankrupt after a two-billion dollar loss due to overinvestment in stock derivatives during the mid-1990s (Matkin, 2010b). Unlike the Jefferson County case, this county had an independent oversight committee in place that appeared to be adequate in its expertise; however, bad advice from the local financial community led to a risky investment strategy (Matkin, 2010b).

Local school districts have presented challenges to state governments regarding external and internal financial control and potential fraud (Carslaw et al., 2007; Elder & Yebba, 2017; Phillips & Dorata, 2013). As is clear from the District of Columbia case, a lack of oversight and quality auditing procedures may leave room for fraudulent activity on the inside of a local government school district (Elder & Yebba, 2017). In general, if auditors find few errors then less scrutiny from the public occurs on fraud, and malfeasance can become endemic; a case from the Roslyn New York school district illustrates this circumstance (Elder & Yebba, 201). Misappropriations of approximately 13 million dollars within the Roslyn, New York school district resulted from a nearly complete lack of oversight by local auditors. This incident led to the New York State comptroller's request for a substantial change in state budget allocation for auditing, as an attempt to prevent this kind of gross negligence (Elder & Yebba, 2017).

Since this case occurred within New York State, there has been a public outcry for more regulation and investigation by the legislative bodies to ensure accountability (Elder & Yebba, 2017). New York State has implemented mandatory audit committees to oversee local school districts financial reporting; audit committee regulation can contribute to fraud reduction (Spreen & Cheek, 2016; Vollmer, 2016; Zhang & Rich, 2016). Reporting of audit exceptions across New York districts has increased, and this may represent more rigorous and effective auditing with improved financial oversight after the scandal (Elder & Yebba, 2017; Phillips & Dorata, 2013). After the publicity of this case, Carslaw, Mason, and Mills (2007) used archived data from the Federal Audit Clearinghouse to study the auditor and audit characteristics that might be useful to situations like those with the New York state districts. Their goal was to identify school districts, which may require more rigorous audit examination. These authors showed a high percentage of school audit reports, 32 to 41%, should have received detailed attention to ensure accuracy, and that state and some district officials contributed to slowed audit processes, and delayed financial statement reporting (Carslaw et al., 2007).

The costs associated with increased oversight can be formidable for local governments; however, in several national level studies, the use of local oversight committees introduced an improvement in financial control (Matkin, 2010a, Rich & Zhang, 2014; Zhang & Rich, 2016). Oversight or audit committees contribute to monitoring of quality by providing independent reconciliation/evaluation of auditor reports, and to increasing perceived quality of the audit for the auditees, auditors, and potentially the public (Alzeban & Swain, 2015; Ghafran & O'Sullivan, 2013; Kilgore et al., 2014; Phillips & Dorata, 2013; Tepalagul, & Lin, 2015). In one local example from the New York school districts, Phillips and Dorata (2013) reported that the state followed evidence-based practices to install audit committees with a clear degree of

independence to enhance quality in practice, and this enhanced public perception of quality also. In a study of municipalities across the U.S., Rich and Zhang (2014) confirmed that local audit committee oversight contributed to fewer problems with local audit reporting and better financial control with positive public perceptions of oversight.

Evidence based method that researchers have used to detect fraud in local governments and the private sector is the use of data analytics. These are mathematical techniques used to detect unlikely patterns in dollar amounts transferred between accounts (Mantone, 2013). These techniques may give speed, cost-effectiveness, and efficiency to large scale auditing; however, these techniques have not yet been widely used in practical settings. If the costs of sophisticated monitoring and overseeing overrun those of projected losses from fraud, then these costs may deter from officials from acting on the situations. This can lead to misunderstanding by the public as to why officials may not endorse some forms of oversight, or conversely, it may lead to heightened public concerns over the costs of oversight after officials have implemented procedures.

Whether it is from actions that are costly regulatory actions or from lack of action by public officials, public concerns can continue fraud (Matkin, 2010a, 2010b; Phillips & Dorata, 2013; Sinason, 2000). The presence of an audit committee can lead to increased acceptance of internal auditor recommendations in local government (Alzeban & Swain, 2015; Ghafran & O'Sullivan, 2013; Zhang & Rich, 2016). Overall, the convergence of these pressures concerning fraud and oversight has led to the far greater implementation of audit committees across state and local levels of government (Rich & Zhang, 2014; Matkin, 2010a). The study took place in Minnesota where local audit committees are mandatory, and state guidelines do exist for their formulation and their procedures (Minnesota Office of the State Auditor, 2016).

In light of these examples of fraud, there are remaining concerns about audit procedures, auditors' characteristics, and their impact on public managers' adoption of corrective actions to address the issues identified (GAO, 2007, 2016; Aiken, 2012). Congress enacted The Single Audit Act (1984, 1996) as a part of Federal government action to alleviate some of these concerns at the local level. This act ensures that federal dollars allocated to local governments are due for audit once per year. However, this mandated audit is limited to federal monies of a specified amount received by the locality, and unless a state has a policy for yearly audit under broader provisions, then some localities may not receive mandated audits on a regular basis. Some states do have additional yearly requirements, for statewide audits, performed at a wider scope than just federal allocations to local budgets, but the details of these procedures vary from state to state (Aikins, 2012; Cagle & Pridgen, 2015; Carslaw et al., 2012; Rich & Zhang, 2014; Samelson et al., 2006). Some consider the Virginia Joint Legislature Audit and Review Commission as a model state organization in terms of the thoroughness of the state auditing process. This organization has saved the state millions of dollars by regulating local audit committees and performing regular mandatory single audits by State teams across all jurisdictions. They have to found incidents of fraud and malfeasance before it became public knowledge. This kind of proactive approach can reduce costs and provide public reassurance (Bowman & Kearney, 2017).

**Federal Regulation of Private Sector Audits: Implications for Public sector.** As it has been with local government fraud scandals described above, some famous cases of fraud in the private sector encouraged federal legislation and oversight (Carcello & Nagy, 2004; Elder & Yebba, 2017; Knechel, 2015; Mantone, 2013; Matkin 2010a, 2010b). The Enron scandal and subsequent investigation of the Arthur Anderson accounting firm led to public interest and the



need to protect consumers from the fraudulent activities, which the highest levels of management within these firms had sanctioned (Matkin, 2010a; Sneed et al., 2015). To curb issues of fraud and malfeasance by top leadership within the private sector, Congress enacted the SOX Act (2002). Under this act, top leadership within private sector firms are personally and legally responsible for certifying to the accuracy of their firm's financial information. The act also provides that independent external auditors, with mandatory rotation periods (i.e., changes in auditing teams/firms), must be involved in the auditing process (Elder, 2015; Kimmel et al., 2011; Matkin, 2010a; Sneed et al., 2015; SOX, 2002). This is a complex act with many different parts and functional outcomes for its implementation, much of which is beyond the scope of this review. For the study, it was important to note that the personal responsibilities assigned to top executives and the legal and financial costs for firms in the private sector is thought to have increased the incentives for these firms to implement auditor recommendations (Burton et al., 2012; Kimmel et al., 2011; Matkin, 2010a; Sneed et al., 2015).

Because there are many components to the SOX Act (2002), researchers and federal regulators have measured its effectiveness in many ways. For example, there is some suggestion that SOX (2002) has contributed to decreasing in fraud (Sneed et al., 2015; Barac & Van Staden, 2014; Vollmer, 2015). However, these authors noted that internal audit reporting of weaknesses in internal control processes could lead to revisions of issued financial statements, and revisions of financial often far lag overt recognitions of audit weaknesses (Pizzini, Lin, & Ziegenfuss, 2014; Rice & Weber, 2012). Regulations under SOX (2002) require leadership to address the reportable findings along specified timelines procedures, but sometimes this does not occur. In this case, firms can manipulate the timing of the release of the revised and accurate financial statements, and this manipulation could lead to financial gain (Blankley, Hurtt, & MacGregor,

2015; Rice & Weber, 2012). This situation is similar to that with local school districts where slow auditing processes and reporting contributed to delay or lack of implementation of audit findings by local managers (Carslaw et al., 2007; Denison & Gibson, 2013; Phillips & Dorata, 2013; Wells & McFadden, 2010). Thus, leading to the potential for increased costs for districts, and this in itself may be malfeasance. Because state and local regulations and processes vary widely according to local needs, a single federal act similar in complexity to SOX may be difficult to apply across school districts and governments nationwide (Carslaw et al., 2012; Phillips & Dorata, 2013). Overall, there is some debate about SOX effectiveness (Coates & Srinivasan, 2014; Sneed et al., 2015) and some have found state team government auditors to be more effective at the local level (Carslaw et al., 2012). Some researchers have concluded that the presence of SOX has improved the accuracy and implementation of audit reporting in the private sector and when private sector (CPA) firms audit the public sector (Knechel, 2015; López & Peters, 2010; Malik, 2014; Rice & Weber, 2012; Sneed et al., 2015). As mentioned above, others conclude that legislation as complex as SOX may not be appropriate for local government oversight, as it remains unclear as to which parts of the act are most useful for the public sector (López & Peters, 2010; Sneed et al., 2015).

On the contrary, there has been some continued discussion among researchers to suggest that the state and local governments should adopt SOX legislation (Sneed et al., 2015). The recognition that there has been a growing need to increase local taxes to cover waste and fraud within the states has fueled this discussion (Bovine, 2005; Sneed et al., 2015; Vollmer, 2016). Under SOX, publicly held entities in the private sector are required to implement financial oversight committees (Franzel, 2014; SOX, 2002; Matkin, 2010a, 2010b). The example described above from New York state school districts showing that mandated audit committees

for local districts can lead to improved rigor in finding audit exceptions (Phillips & Dorata, 2013), suggests that a move toward requiring local committee oversight will provide some relief from potential for fraud (Wilbanks et al., 2017). Not only at the school district level, but some state and local governments have also instituted oversight committees across other levels of government, and there is some evidence that committees may improve financial control, as well as, raise taxpayer confidence (Matkin, 2010a; Phillips & Dorata, 2013). The state governments of Illinois, Texas, and California have passed new SOX type regulations to cover nonprofits and charitable entities within these states. The legislators of these states considered these measures to defray the potential for future tax increases and believe that this may be the case.

These efforts to install regulations similar to SOX (2002) within the states is thought to contribute to assure taxpayers acceptance of tax increases, in that taxpayer may be more accepting of tax increases if they believe that regulatory actions will curb malfeasance and waste of their tax dollars (Sneed et al., 2015). There is evidence that is issuing re-statements of financial reports from localities, which may stem from less serious circumstances than fraud (for example, errors and slowness to respond to auditor recommendations), can lead to increased costs of future debt issues due to the implications of fraud (Baber et al., 2013; Henke & Maher, 2016; Matkin, 2010a; Modlin, 2016). For example, Baber, Gore, Rich, and Zhang (2013) found that debt-issues by local governments were costlier after the local managers had issued re-statements of the financial statements of their jurisdiction. The costlier debt links to potential tax increases for the local taxpayer and in some cases, disciplinary actions for elected and appointed officials (Baber et al., 2013; Modlin, 2016). In a survey study, Fitzgerald and Giroux (2014) found no significant relationship between debt costs, financial restatements and the presence of audit committees. The relationships between increased oversight, its benefits, and the costs

associated with lack of strong internal controls are complex (Fitzgerald & Giroux, 2014; Park, Matkin, & Marlowe, 2016). For example, the presence of weak internal controls is associated with lower adherence to standards (Fitz or Rich, Ruppel, 2016), and these conditions are associated with higher debt cost financing for a municipality (Baber et al., 2013; Henke & Maher, 2016; Park et al., 2016). In contrast, other results showed that governance through audit committee did not predict lower debt costs (Zhang & Rich, 2016). However, the costs of enacting regulations like SOX, and investigating and enforcing disciplinary actions can be an impediment to acceptance and implementation of new regulations. In a quantitative study set in North Carolina, Modlin (2016) found that higher levels of manager involvement or responsiveness to audit exceptions in state-led external audits and larger internal audit staffing predicted lower numbers of exceptions to financial statements and lower debt costs. These circumstances point to the need for more study of why local officials may delay or chose not to implement audit recommendations that conceivable would forestall the need for more extensive regulation similar to SOX (Reinstein, Abdolmohammadi, Tate, & Miller, 2014).

The SOX act mandates periodic rotations of external CPA audit teams (SOX, 2002; Reinstein et al., 2014). After the implementation of the SOX Act (2002) for the private sector, researchers showed a lowered correlation between auditor rotation, and auditor and auditee perceptions of quality than before its implementation (Kilgore et al., 2014; Litt, Sharma, Simpson, & Tanyi, 2014). However, some researchers do not uniformly support this; as in the case of largest CPA firms, the appearance of periodic firm change remains strongly correlated with auditee perceptions of quality (Abbott et al., 2015; Knechel et al., 2012; Lenz & Hahn, 2015). In the public sector, many local governments regulate auditor independence (that is, separation of the auditors from the direction of auditee leadership) through mandatory private

audit firm rotations for external audits, mandatory local internal audit team rotations, and state audit team rotations (Elder et al., 2015). Thus, auditor rotation and perceived auditor independence are related.

Congress enacted the SOX (2002) requirements to regulate corporations and publicly traded companies within the private sector, but the implementation of SOX within the private sector may have had consequences for the auditing procedures and the characteristics of public auditing of local governments (Knechel, 2015; Knechel et al., 2012; Matkin, 2010ab; López & Peters, 2010; Sneed et al., 2015). The presence of the SOX requirements for external auditor rigor in the private sector may well have “spilled over” into the government audit process where external auditors from private auditing firms are sometimes employed (López and Peters, 2010; Matkin, 2010a; Sneed et al., 2015). To study the potential implications of SOX influences for the governmental sector, López and Peters (2010) examined whether differences in external audit quality between public and private sectors exist in the “post-SOX” era (2004 to 2006). Using a nationwide sample, they found that external CPA firms were more likely to find substantial internal control issues within local governments than were government auditors (López & Peters, 2010). López and Peters (2010) note that their results are in contradiction with older studies, which indicated that external audits of local government, were not always more accurate than local internal or external auditors (GAO, 1986; Brown & Raghunandan, 1995; Jakubowski et al., 2002). Their results suggested that SOX had a positive influence on local government financial oversight and this supports the idea of implementing SOX type regulations at the state level (Elder et al., 2015; Phillips & Dorata, 2013), which then may help to reinforce the local official implementation of audit findings.

In contrast to the results from López and Peters (2010), Carslaw, Pippin, & Mason (2012), using data across only nine states, showed that state auditors demonstrated greater rigor than private audit firms did. In this study, state auditors found greater numbers of reportable conditions with local auditees and did the work more swiftly than did private auditing firms. The authors attributed this to auditor industry experience within the public sector. Private auditing firms hired to perform local audits were sometimes costly alternatives to state-led audits (Carslaw et al., 2012; Deis & Byus, 2016). Carslaw, Pippin, & Mason (2012) sampled from localities across states where there may or may not have state auditors, and where there may or may not be requirements for more than a single audit as defined by the Single Audit Act (2002). These authors used a regression analysis to generate their results, however, unlike López and Peters (2010), they did not use control variables to indicate differences in use of state teams and private auditors within each locality. Carslaw, Pippin, and Mason (2012) did not account for these specific differences among localities and states' audit circumstances, and this may have biased their results to appear different from López and Peters (2010). Further, Cagle and Pridgen (2015) found a result similar to Carslaw, Pippin, and Mason (2012) in that state auditors produced higher quality audits, as defined by the numbers of reportable findings made, as compared to private auditors. However, their sample consisted of localities within one state, and this points to the idea that knowledge of local procedures may be an advantage for state led audit teams as compared to private audit firms.

As mentioned above, contradictions in the results from these studies could also arise from the experience levels of auditors. For example, if a local government only used private auditing services then it could easily be that the private auditors have less experience with the state and local requirements than would an auditor employed by the state. Auditees could perceive

external private auditors as of lesser quality (Behn et al., 1997; Carcello et al., 1992; Carcello & Nagy, 2004; Lowensohn et al., 2007; Samelson et al., 2006). Carslaw, Pippin, and Mason (2012) conceded that they did not control for all of the potential differences between states and localities and it is unclear how well the results generalize. Further, the authors did not account for differences in audit procedures between the states that may lead to apparent delays in the process, and I conclude this too could have led to delays and reduced effectiveness of audits.

Across previous studies examined, the impacts of SOX on private/external audits at the local level are still an open question (Coates & Srinivasan, 2014; Knechel, 2015; López & Peters, 2010; Malik, 2014; Sneed et al., 2015), as are the advantages of state teams over private auditing at the local level. To reduce the influences of these variables for the study, I studied only local government audits within one state where state-led audits are mandatory, cost-regulated, the professional standing of the audit teams were consistent and regulated, and the size and composition of the audit teams were consistent for teams on site visits.

### **Definitions for Audit Quality**

Audit quality has been a topic of research within a large body of literature; however, there is no consensus definition and measure of audit quality (Kilgore et al., 2014; Knechel et al., 2012). Definitions of audit quality depend upon the stakeholder viewpoint and the context of its use (Behn et al., 1997; Carcello et al., 1992; Kilgore et al., 2014; Knechel et al., 2012; Schroeder et al., 1986). Knechel, Krishnan, Pevzner, Shefchik, and Velury (2012) have summarized the research on this issue: “To start, it is important to note that the perception of audit quality can depend very much on whose eyes one looks through. Users, auditors, regulators, and society—all stakeholders in the financial reporting process—may have very different views as to what constitutes audit quality, which influenced the type of indicators one might use to assess audit

quality” (Knechel et al., 2012, p. 1). Historically, researchers have relied upon definitions of audit quality, which centered on the idea that auditors who deliver quality audits are more likely to find inaccuracies in accounting and reporting of financial statements, and the probability of errors would constitute a lack of quality (DeAngelo, 1981; Kilgore et al., 2014; Knechel et al., 2012). Because it is difficult to observe these likelihoods, researchers have relied on direct and indirect proxies for the construct of quality, as described in reviews by Kilgore, Harrison, and Radich, (2014) and Knechel, Krishnan, Pevzner, Shefchik, & Velury (2012). An example of a direct proxy is the measure of how closely an auditor follows generally accepted accounting standards (GAAS) for an audit (Kilgore et al., 2014; Knechel, 2015) or in the case of public audits, government accounting standards (GAS; Samelson et al., 2006; Ruppel, 2016). For purposes of comparisons across studies, proxies, such as the numbers or frequencies of noncompliant findings, are often a useful measure of outcomes for audit quality (Cagle & Pridgen, 2015; Carslaw et al., 2012; DeAngelo, 1981; Deis & Giroux, 1992; Kilgore et al., 2014; López & Peters, 2010; Samelson et al., 2006). Similarly, Deis & Giroux (1992) and Carcello, Hermanson, and McGrath (1992) found that a number of auditing hours was an effective proxy for quality. Direct measures based on the outcomes of audits may avoid the fact that we cannot measure the probability of inaccuracy in many cases (DeAngelo, 1981; Brown & Raghunandan, 1995; Kilgore et al., 2014; Knechel et al., 2012).

As discussed in the introduction of this literature review, within the PCIE single audit report for local public audits, the GAO used detailed evaluations of audits to determine effectiveness of local single audits, and this reflected a definition for the quality of auditing (GAO, 1989; PCIE, 2007) that is often atypical in most research studies. Within research studies, counts of reportable/non-compliance findings are a common measure of audit quality



(DeAngelo 1981; Cagle & Pridgen, 2015; Carslaw et al., 2012; Kilgore et al., 2014; López & Peters, 2010). Researchers found positive correlations between numbers of audit findings and results from more detailed methods evaluating audit procedures, decisions, and outcomes (DeAngelo 1981; Cagle & Pridgen, 2015; Carslaw et al., 2012; Kilgore et al., 2014; López & Peters, 2010). According to DeAngelo (1981), using of counts of reportable and non-compliant findings is consistent with his idea that quality derives from a higher probability of disclosing conditions or weaknesses. By tracking and counting the numbers of reported issues (or audit letters per Modlin & Stewart, 2012), researchers have a measure audit quality that is distinct and can be measured independently or along with post-audit auditee perceptions (Cagle & Pridgen, 2015; Carslaw et al., 2012; Kilgore et al., 2014; López & Peters, 2010). Industry use of management systems standards for auditing procedures, offers another approach to defining audit quality, satisfaction, and effectiveness (Badura & Saidin, 2013; Djati & Payamta, 2013; Beckmerhagen et al., 2004; Lenz & Hahn, 2015). These standards offer a normative approach, such that results from these kinds of approaches are readily compared than across studies where quality is not well defined (Badura & Saidin, 2013; Beckmerhagen et al., 2004; Ruppel, 2016). As is discussed further below, internationally recommended management systems standards (ISO) for the implementation of auditing systems have parallel some of the non-normative empirical findings of variables associated with quality, satisfaction, and effectiveness.

Other indirect proxies of quality are auditor characteristics, i.e., variables associated with perceptions of the auditor or team quality, but not associated with specific auditor behaviors. These include audit-firm size, auditor qualifications, industry experience, audit costs, and firm reputation (Aikins, 2012; Behn et al., 1997; Carcello et al., 1992; Carcello & Nagy, 2004; Carslaw et al., 2012; Deis & Giroux, 1992, Johnson et al., 2012; López & Peters, 2010;

Samelson et al., 2006). Auditor tenure and auditor independence or firm/government rotation policies are characteristics that often set the stage for client relationships but are not specific to auditor behaviors (Aikins, 2012; Behn et al., 1997; Carcello & Nagy, 2004; Elder et al., 2015; Fontaine, Letaifa, & Herda, 2013; Litt et al., 2015; Lowensohn et al., 2007; Samelson et al., 2006; Tepalagul & Lin, 2015). Researchers in this field have validated these particular variables as significant to some distinctive study contexts (Kilgore et al., 2014; Knechel et al., 2012).

Some definitions of audit quality include behavioral attributes of the auditors (Behn et al., 1997; Christensen et al., 2015; Kilgore et al., 2014). Indirect perceptions of quality that are behavioral attributes, include frequency and clarity auditor communications with auditees, and responsiveness to client needs as in scheduling of meetings, and understanding client needs (Aikins, 2012; Alzeban and Sawan, 2015; Behn et al., 1997; Carcello et al., 1992; Samelson et al., 2006; Schroeder et al., 1986). Consistent with the purpose of this study, these kinds of behavioral attributes are a part of the independent variables that I used to predict implementation levels of audit recommendations. An example of an indirect behavioral attribute of quality, and thought by some as an outcome of successful and effective auditing, is the auditees' degree of implementation of audit recommendations. This is an understudied variable (Aikins, 2012; Alzeban & Gwilliam, 2012; Alzeban & Sawan, 2013, 2015) and is the dependent variable for the study. I presented further evidence for the relevance of these variables in sections that follow (see section Audit Quality and Satisfaction).

Definitions of audit quality depend upon particular stakeholder(s) perspectives (Behn et al., 1997; Carcello et al., 1992; Kilgore et al., 2014; Knechel et al., 2012; Schroeder et al., 1986), and this may be more important for perceptions of auditor behavior. For example, researchers have found auditees interpret measurements for quality, such as numbers of reportable findings

and adherence to GAS (Samelson et al., 2006) or GAAP (DeAngelo, 1981; Kilgore et al., 2014; Knechel, 2015; Ruppel, 2016), less subjectively than behaviorally related variables (Kilgore et al., 2014; Knechel et al., 2012; López & Peters, 2010; Samelson et al., 2006). Auditor behavioral variables appear as more subjective, as compared to characteristics such as audit rotation policy or auditor credentials (Kilgore et al., 2014; Knechel et al., 2012).

**Empirical Tests for Proxies of Audit Quality.** Schroeder, Solomon, and Vickrey (1986) advanced understanding of definitions for quality using perceptions of stakeholders to develop constructs for auditor characteristics and behaviors. They formulated survey techniques to capture perceptions of audit quality for both auditees and auditors. They examined the quality perceptions of private sector audit partners of the large private CPA firms, and audit committee members of Fortune 500 companies. Their results included the rank of importance for 15 dimensions of audit quality as perceived by these participants. These quality dimensions included some auditor/team characteristics (skill and experience level, independence level), firm characteristics (specialization/experience, policy for team rotation, fees), and auditor/team behaviors (communication with the auditee, independence exhibited, planning and conduct of the audit process, and level of attention given to client needs). An important outcome at this time of this study was the significance of auditor behaviors as correlated with auditee perceptions of quality. The overall conclusions from Schroeder, Solomon, and Vickrey (1986) included that the auditors and auditees agreed on the relative importance of most all dimensions of quality. This contrasts with the conclusions of DeAngelo (1981), who showed that perspectives of different stakeholders were often distinct. Schroeder, Solomon, and Vickrey (1986) showed that correlations between auditee perspectives related to the auditor and team characteristics and behaviors were greater than those correlations with audit firm characteristics and policies.

Several authors have used and modified Schroder, Solomon, and Vickrey's (1986) survey as a basis to develop seminal studies of audit quality attributes and perceptions in the private sector (Behn et al., 1997; Carcello et al., 1992). More recently, for studies of auditor and auditee perceptions of quality in the public sector the surveys, which evolved from those seminal studies, have proven useful (Aikins, 2012; Alzeban & Gwilliam, 2012; Alzeban & Sawan, 2015; Samelson et al., 2006). Thus, results from Schroeder, Solomon, and Vickrey (1986) and other seminal studies list above, which point to the similarity between auditor and auditee perceptions of quality regarding auditor behavioral attributes, are relevant to the study because it supports the purpose of this proposal: to determine whether specific behavioral attributes predicted adoption of auditor recommendations. Further, across those studies discussed above, the consistent the use of similar surveys, and some consistencies in results across sectors and type of stakeholders pointed to the reasonable use of similar approaches and tools as a basis for the study. I considered these studies further through additional comparisons of Schroeder, Solomon, and Vickrey (1986) with more recent studies below.

Research performed by others after Schroeder, Solomon, and Vickrey (1986) allowed further modification of the survey used in this study and to the development of new surveys and constructs and in different contexts. For example, Schroeder, Solomon, & Vickrey (1986) used large audit firms within one large U.S. city as the population for their study. Carcello, Hermanson, and McGrath (1992) expanded upon this study by using a national level sample of Fortune 500 corporates and large CPA firms. These authors had two goals: identifying direct and indirect proxies and attributes of quality, and to determining how these differ depending upon the stakeholder point of view. They found differences among participant groups of audit partners, preparers, and users of reports as to what they perceived as most important

attributes/variables related to quality from a behavior perspective. Carcello, Hermanson, and McGrath (1992) found that audit team and firm experience with the client, industry expertise, responsiveness to client needs, and compliance with the general standards (competence, auditor independence, and due diligence) of GAAS were all of the significant factors underlying perceptions of audit quality across stakeholders. However, these authors' results differed from prior studies in that distinct groups of stakeholders did indicate differing levels of perceived importance for attributes related their perceptions of quality. In this study, the quality attributes included some indirect proxies for auditor behaviors and a direct proxy in the meeting of specific GAAS rules. Both users of the audits and preparers placed equal importance on the adherence to GAAS and responsiveness to clients. Behavioral constructs, such as the construct of responsiveness of auditors to the clients, were more significant to perceptions auditees, as were audit firm or team characteristics.

A criticism of Carcello, Hermanson, and McGrath (1992) work is that the authors relied more on their perceptions of attributes found in the literature than through a systematic review of the literature (Warming-Rasmussen & Jensen, 1998). As described below, these authors did use quantitative methods to establish the factors or attributes of interest; however, the lack of certainty by some regarding the definitions and choices of attributes behavioral attributes suggested these attributes and relationships to quality deserved further study.

The differences in the results by Carcello, Hermanson, and McGrath (1992) and Schroeder, Solomon, and Vickrey (1986) are not fully attributable participants because these participants bore similarity: stakeholders in private auditing, large CPA firms, and large corporate clients. The larger sample size and geographic breadth of participants in the Carcello, Hermanson, and McGrath (1992) study likely contributed to some differences between their

results and those of other studies. Other researchers have recognized that examining these issues in different geographic areas (Khumawala et al., 2014) and sampling over larger areas can lead to distinctive results between studies (Deis & Giroux, 1992; Cagle & Pridgen, 2015; Jakubowski, 2008; Schroeder et al., 1986). However, both of these studies (Carcello et al., 1992; Schroeder et al., 1986) support that auditor behavioral attributes as perceived by the clients may be similar and useful to predict quality, even if all of these variables are not consistently ranking with the same importance across different shareholders' perspectives and differing contexts. These studies included some or all of these shareholders and contexts: private sector internal and external auditors, audit team leaders, managers of audit departments, corporate financial managers, and corporate investors. Warming-Rasmussen and Jensen (1998) did not find that shareholders had very much in common as to which characteristics and behavioral attributes were important for audit quality. However, they focused on characteristics and behaviors related specifically to ethics, and other authors did not (Behn et al., 1997; Carcello et al., 1992; Schroeder et al., 1986). Carcello, Hermanson, and McGrath (1992) stressed engagement and communication from auditors to users/auditees. Warming-Rasmussen and Jensen's (1998) dimensions of quality focused on more upon ethical behaviors by auditors. In the direct comparisons of these attributes, only perceived auditor skepticism and auditor industry experience were significant within both of these studies. Warming-Rasmussen and Jensen (1998) attributed these differences in part to cultural factors (their study was performed in Denmark, (Dicle & Usluer, 2016), and their criticism of Carcello, Hermanson, and McGrath (1992) depended on their interpretations of literature as starting point to develop the quality attributes and to compare perceptions of distinct stakeholders. However, as mentioned above, these authors performed a factor analysis to distinguish these dimensions as significantly

distinctive significantly; generally, a factor analysis is an acceptable method for making these conclusions (Field, 2013). Warming-Rasmussen and Jensen (1998) sought out perceptions of the auditees/users first, as the basis to identify quality attributes before they compared the relative importance of these across users in Denmark. However, before this Dutch study, Behn, Carcello, Hermanson, and Hermanson (1997) had validated the most of the dimensions for behavioral attributes for audit quality, as defined similarly by Carcello, Hermanson, and McGrath (1992). This replication of results by Behn, Carcello, Hermanson, and Hermanson (1997) reduces the criticisms cast on the prior study, which consisted the methodology of their literature search. When cultural factors are also considered, it is even less clear as to how to compare these studies in the U.S. and Denmark because ethics can be relative across cultures (Alzeban, 2015; Dicle & Usluer, 2016).

More recently, Aikins (2012) studied dimensions of quality perception within the public sector, based on studies of the private sector (Behn et al., 1997; Carcello et al., 1992), and public sector (Samelson et al., 2006). Aikins (2012) included dimensions related to quality perception, such as the overall attention given by the auditor to the audit process, the planning and due care is given to the process, and the communications between the auditor and auditees (Carcello et al., 1992; Samelson et al., 2006). Aikins (2012) studied these from the view of local public-sector auditor's beliefs concerning how auditees value quality and whether this predicted auditee acceptance of the auditor recommendations. Schroeder, Solomon, and Vickrey (1986), and more recent authors (Carcello et al., 1992; Knechel et al., 2012; Warming-Rasmussen & Jensen, 1998), found that auditor views of auditees' perceptions of quality were consistent with auditee responses on most of the dimensions of quality. This suggests that Aikins (2012) findings for public sector auditor's views of local government managers' perceptions of quality may be a

useful to formulate the study. As noted above, the Schroeder, Solomon, and Vickrey (1986) study preceded major changes in federal regulations across both the private and public sectors, and some have demonstrated that after passage of SOX regulations there was an increase in private auditor's rigor when performing public audits (Aikins, 2015; Carslaw et al., 2012; GAO 1987, 1989, 2016; López & Peters, 2010). However, it remains debatable as to whether SOX regulations have increased and led to differences in auditor and auditee perceptions of quality in either the public or private sectors (Coates & Srinivasan, 2014).

**Audit Quality and Satisfaction: Seminal Studies.** In general, across industries and business contexts, the constructs of service quality, customer satisfaction, and perception of the service provider are related but distinct concepts (Bansal & Taylor, 2015). In broader context, perception of service quality was defined as the customer judgement as to the excellence of a product. Similarly, the satisfaction derived from how well their experience matched their expectations and the experience of satisfaction contains attributes of quality (Bansal & Taylor, 2015; Caruana et al., 2000). Some researchers have sought to distinguish these concepts in the context of auditing research (Behn et al., 1997; Caruana et al., 2000; Christensen et al., 2015; Samelson et al., 2006; Warming-Rasmussen & Jensen, 1998). These authors along with others continue to use these constructs interchangeably to indicate perceptions of quality (Aikins, 2012; Carcello et al., 1992; Carcello & Nagy, 2004; Kilgore et al., 2014; Modlin & Stewart, 2014; Schroeder et al., 1986; Samelson et al., 2006). In a study based on a generic definition of quality as related to any general service industry, Caruana, Money, and Berthon (2000) found a significant relationship between perceived audit quality and satisfaction, and they found that the clients perceived value of audit service moderated this relationship. These authors did find a significant relationship between quality and satisfaction, moderation of these variables, but they



considered no other studies of auditing research to develop their constructs for auditing quality, satisfaction, and value; they made no comparisons or interpretations of their results within the existing body of auditing literature. Given these authors used generic definitions for these variables, it is unclear how to interpret the relevance of their results for the field of auditing research. As illustrated by interchangeable use of these variables by auditing researchers mentioned above, many authors have continued to treat auditee satisfaction as attributes of quality and discuss these as essentially equivalent constructs within their findings (Knechel et al., 2012).

The seminal studies of audit quality as described above from Schroeder, Solomon, and Vickrey (1986) and Carcello, Hermanson, and McGrath (1992) did not explore distinctions between quality and satisfaction, but they, as well as Caruana, Money, and Berthon (2000), did lay some groundwork for this topic in auditing research. As reviewed by Kilgore et al., 2014 (2014), examining potential distinctions between audit quality and satisfaction allowed some subsequent investigators to develop proxies for quality and satisfaction that better fit the context for their particular studies. In a seminal study of large private audit firms, Behn, Carcello, Hermanson, and Hermanson (1997) studied audit quality with a focus on “aspects of audit quality drive client satisfaction” (Behn et al., 1997, p. 7). This study is important because these authors used regression modeling and a systematic meta-analysis of the literature to guide their investigation, whereas, Carcello, Hermanson, and McGrath (1992) had previously used the literature to formulate analyses less systematically. Carcello, Hermanson, and McGrath (1992) did use a factor analysis in their efforts to discern the attributes of quality that were most significant, but their search of the literature was less systematic than subsequent authors. Despite these differences and criticisms, both Behn, Carcello, Hermanson, and Hermanson (1997) and

Carcello, Hermanson, and McGrath (1992) developed similar themes: audit team characteristics were more important to predict perceived audit quality than were firm characteristics. In the sections above, the variables and underlying auditor characteristics were not considered as behaviorally based. However, it is important to note in this direct comparison that an overall result the authors of these studies validated behaviorally based attributes, such as responsiveness to client needs, effective and ongoing interaction with the management and audit committee, due diligence of fieldwork conduct, industry expertise, and prior experience with the client were all positively associated with auditee satisfaction. High levels of perceived auditor skepticism were negatively associated with auditee satisfaction even though skepticism is a valued characteristic of auditors within their profession (Behn et al., 1997). Comparisons of Behn, Carcello, Hermanson, and Hermanson (1997) with these prior studies strengthen the idea that auditor attributes underlying quality and satisfaction are of relevance among auditors, auditees, and may be across other stakeholders. As discussed below, there are only a few studies that have extended these kinds of results from the private to the public sectors (Aikins, 2012; Modlin & Stewart, 2014; Samelson et al., 2006), and thus, extended the study of behavioral measures for quality and satisfaction as means to understand audit quality.

**Quality, Satisfaction, and Effectiveness in the Public Sector.** As described above, researchers exploring perceptions of audit quality and satisfaction have used these terms synonymously, and sometimes did not operationalize these. The seminal studies of audit quality and satisfaction attributes as used by Behn, Carcello, Hermanson, and Hermanson (1997) and Carcello, Hermanson, and McGrath (1992) were associated with similar samples of participants (financial managers in large corporations). In order to determine whether similar results exist across both private and public-sector auditing, and to better understand any relationship between

quality and satisfaction, Samelson, Lowensohn, and Johnson (2006) extended the results from prior studies (Schroeder et al., 1986; Carcello et al., 1992; Behn et al., 1997), by investigating attributes of quality and satisfaction within the public sector. Unlike these prior studies, Samelson, Lowensohn, and Johnson's (2006) explicit goal was to test whether attributes and characteristics of auditor quality predicted auditee satisfaction by using a regression model. In contrast with conclusions of Caruana Money & Berthon (2000), who assumed that quality and satisfaction would be distinct for auditing service studies, Samelson, Lowensohn, and Johnson (2006) showed that most of the same sets of characteristics and attributes significantly predicted both quality and satisfaction, without considering potential complex relationships between the two variables. The results reinforced that in some cases it is appropriate to use quality and satisfaction attributes interchangeably.

Samelson, Lowensohn, and Johnson (2006) found that audit quality and satisfaction were associated with auditor characteristics and behavioral attributes with multiple dimensions: auditor industry or government experience, auditor expertise, responsiveness to client needs, due professional care or diligence, and prescribed conduct of fieldwork. In the more recent studies of the public sector, other authors used similar constructs or attributes and also used quality as synonymous with satisfaction in their studies (Aikins, 2012; Modlin & Stewart, 2014). Modlin & Stewart (2014) found that 'buy-in' on recommendations from the auditees predicted their satisfaction with audits. Aikins's (2012) purpose was to examine some of these issues from the auditor's viewpoint using auditor behavioral attributes from Samelson, Lowensohn, and Johnson (2006). Aikins (2012) showed that auditor's perception of whether a government manager would adopt audit recommendations was predicted by the auditor's perceptions of some auditees views and behaviors. Aikens (2012) found adoption of recommendations was predicted by

auditor professional designation (credentials, experience level), due diligence (audit planning and rigor in the process), client relations (such as regularity and clarity of communications), documentation, tracking and follow-up for implementation of audit recommendations and agreed upon action plans. The results suggest that auditors should consider these factors when planning procedures that might affect adoption of the recommendations; however, the results do not point directly as to how the local managers may view these factors.

Unlike these results from the seminal studies in the private sector (Carcello et al.1992; Behn et al., 1997) and the public sector (Deis & Giroux, 1992) in which auditor skepticism was established as an important characteristic of auditors, Samelson, Lowensohn, and Johnson (2006) found no relationship between the degree of external auditor skepticism and manager's perceptions of quality and satisfaction in the public sector. Because internal auditors tend to weigh skepticism heavily as a positive trait for other auditors (Castro, 2013; Knechel et al., 2012; Barac & Van Staden, 2014), Aikins (2012) dismissed the use of auditor skepticism as a part of his study concerning public sector internal auditors' process and their perceptions of auditees' acceptance of audit recommendations. Therefore, auditor perceptions may contain bias toward their predispositions when the auditors assessed how and why auditees judge quality and satisfaction attributes for auditors. There are many constructs and attributes used in research from both the private and public sectors (Knechel et al., 2012; Modlin & Stewart, 2014) and Aikin's (2012) example showed how careful choice of these matters in the context of studies. Therefore, based on these studies, it was less important to consider this variable for the study, which included state led the public-sector audits. Recent findings from Modlin & Stewart (2014) concerning local public-sector audits were consistent with Samelson, Lowensohn, and Johnson (2006) in that auditor experience and expertise were predictors of auditee's satisfaction with

external auditors. However, they did not examine skepticism and did not address why. Modlin & Stewart (2014) did consider variables concerning auditor responsiveness to client needs, which included their consideration in scheduling and timing of reporting, and they found a similar positive association between these variables and auditee satisfaction. Modlin and Stewart (2014) considered other variables not included by Samelson, Lowensohn, and Johnson (2006, but where the variables were similar between these studies the results were consistent. These results taken together indicate the relevance for behavioral attributes of auditors for predicting the satisfaction of auditees in the form of adoption of auditor recommendation.

As described above, Aikins (2012) adopted quality and satisfaction attributes from Samelson, Lowensohn, and Johnson (2006), in his study of the influences of local government auditors' process on the perceptions of auditees. Unlike Samelson, Lowensohn, and Johnson (2006), the goal of his study was in part to determine whether auditor perspectives of auditee beliefs could predict auditee acceptance/implementation of recommendations. Aikins (2012) addressed this as a means to assess whether auditors had insight into effective auditing from the auditee point of view. Aikins (2012) found that the core dimensions or attributes of quality and satisfaction, as defined by Samelson, Lowensohn, and Johnson (2006), did predict implementation of recommendations. These significant predictors included the auditor characteristics and behaviorally based quality and satisfaction attributes as mentioned above and here: audit quality/satisfaction was associated with auditor industry/government experience, auditor expertise, responsiveness to client needs, due professional care or diligence, prescribed conduct of fieldwork, and exercise of skepticism. In this case, Aikins (2012) used implementation of recommendations as a dependent variable, and he used this in the sense of audit effectiveness. This author did not explicitly define the use of the term effectiveness. As

discussed below this limits the interpretation and relevance of this construct as a variable or dimension of quality to use in the study. There are few studies of public sector auditing which consider behaviorally based quality and satisfaction attributes, and Aikins (2012) study contributed to the formulation of independent variables and attributes for the completed study: auditor due diligence, auditor quality control measures, and the multi-dimensional auditor relationships with clients.

Determining the effectiveness of an audit is a stated goal of many in the auditing research. The term effectiveness used sometimes by researchers in studies of auditing quality, both in research on the public and private sectors (Barac & Van Staden, 2014). Researchers who study internal auditing more frequently use this construct with clear operational definitions but in studies of external auditing, it is often less used and less well defined (Aikins, 2012; Alzeban, 2015; Alzeban & Sawan, 2013; 2015; Alzeban & Gwilliam, 2012; Dicle & Usluer, 2016; Djati & Payamta, 2013; López & Peters, 2010; Modlin & Stewart, 2014; Warming-Rasmussen & Jensen, 1998). Lack of clear definition of effectiveness and the tendency to use it synonymously with quality and satisfaction tends to be the case with studies related to auditor characteristics and behavioral attributes of quality. In their seminal study, Behn, Carcello, Hermanson, and Hermanson (1997) aimed to discriminate the dimensions of quality/satisfaction perceptions of financial officers in the private sector and used the term effectiveness, where operationalizing behaviorally based attributes or dimensions for quality and satisfaction. These authors used the word effectiveness as a part of the scaling of survey items about interactions between auditor and auditee (for example, rating the effectiveness of communications between auditor and auditee is an attribute of both quality and satisfaction). However, they did not explicitly define

effectiveness or make it distinct from quality and satisfaction. In this case, it is a descriptive scale for their quality and satisfaction constructs.

Among researchers studying quality, there is no consensus and rigorous definition of audit effectiveness, as associated with behavioral dimensions of quality and satisfaction. Researchers have sometimes used effectiveness synonymously with quality, satisfaction, and generically with the idea of successful audit outcomes (Badura & Saidin, 2013; Beckmerhagen et al., 2004; Knechel et al., 2013; Rice & Weber, 2012; Simon & Bernardo, 2015). For example, effectiveness may be associated with adherence to academically accepted procedures, local government or private firm procedures and regulations, and GAAS (Kilgore et al., 2014; Knechel, 2015). In a study of local public auditing, Carslaw, Pippin, and Mason (2012) used the numbers of audit findings to indicate the effectiveness of state auditing and found a positive association between numbers of findings and adherence to GAAS and local requirements. These examples appear as more objective than behavioral attributes for measures of effectiveness, but in either case, some researchers also use these variables interchangeably with quality.

Most germane to the study are the few studies in the area of public sector auditing where researchers have suggested that implementation of recommendations as related to for audit effectiveness, quality, and satisfaction (Aikins, 2012; Alzeban, 2015; Alzeban & Sawan, 2013, 2015; Alzeban & Gwilliam, 2012; Djati & Payamta, 2013). Aikins (2012) considered the implementation of recommendations by the auditees, in this case, managers of local government entities, as a pivotal step in producing a high-quality audit, and as discussed above used the concept of effectiveness synonymously with quality. Aikins (2012, 2013) and Alzeban & Sawan (2013, 2015) presented a logical deduction for the idea that effectiveness results from an audit performed with high quality because satisfied auditees will be inclined to implement

recommendations that are carefully prepared, explained, presented with clear follow-up plans to help the auditee implement than on a prescribed time line. However, it was clear that the authors of these studies made no explicit definition and operationalization of effectiveness as a construct.

In the study of internal auditing, measuring effectiveness is often associated with principles of management systems. Generally, practitioners of quality management systems (QMS) adhere to international standards organization consensus practices (ISO standards) for their particular function within an organization: these consist of systems for managing risks and quality of products and services as prescribed by some widely accepted professional standards (Badura & Saidin, 2013; Beckmerhagen et al., 2004; Ruppel, 2016). Researchers and managers, who adhere to management systems approaches to auditing, typically use ISO standard operationalized definitions of effectiveness: value added to an organization, the minimization of operational risks, and creations of positive organizational culture as constructs underlying effectiveness (Alzeban & Sawan, 2013; Badura & Saidin, 2013; Beckmerhagen et al., 2004; Simon & Bernardo, 2015). In contrast, many who study behavioral attributes of quality and satisfaction do not explicitly define effectiveness using the ISO standards (Badura & Saidin, 2013; Beckmerhagen et al., 2004; Simon & Bernardo, 2015). However, the tenets of ISO process are similar to behavioral constructs and attributes in that they include collaboration and clarity between auditors and auditees in each of these steps: 1) planning audit schedule; 2) planning audit process; 3) conducting the audit; 4) reporting on the audit; 5) follow-up issues and improvements. For example, Aikins (2012) and Samelson (2006) specified that client relationships, and communications included that auditors' scheduling of the audit process and gathering of information should be collaborative with the auditees, and auditors should make verbal and written communications clear to the auditees. Alzeban and Sawan (2013) and Djati



and Payamta (2013), explicitly sought to determine whether ISO/QMS standards were used as a part of internal auditing processes within the local public sector. The measures of quality/satisfaction reflected QMS process in both studies, but neither found that process control procedures based on ISO were in formally in place within the governments studied. Thus, even though researchers in the area of behavioral attributes for quality and satisfaction of audits have rarely operationalized effectiveness as a distinct construct, some attributes and dimensions of quality and satisfaction appear similar to accepted QMS standards and may form a basis for using effectiveness in congruence with validated quality and satisfaction attributes.

Consistent with the suggestion above, Djati and Payamta (2013) sought to define audit effectiveness within a study that included behavioral attributes of quality. The goal of these authors was to develop a new approach for understanding and researching internal audit effectiveness in the public sector by using quality attributes/dimensions of satisfaction as an evaluation of effectiveness. They intended to define effectiveness regarding QMS and used constructs of quality and satisfaction as developed by Samelson, Lowensohn, and Johnson (2006) as independent variables to predict effectiveness. As described above for ISO, the local government under study had no provisions in place to formally accept the ISO/QMS standards for auditing processes and procedures, these authors surveyed managers/users of internal audits to determine whether well-established behavioral attributes and auditor characteristics associated with quality and satisfaction predicted their perceptions of effectiveness reflective of ISO/QMS by. As is consistent with QMS standards (Badura & Saidin, 2013; Beckmerhagen et al., 2004; Lenz & Hahn, 2015; Simon & Bernardo, 2015), they used value added to the organization, reduction of risk, and enhanced organizational culture as variable dimensions or attributes for effectiveness. Djati and Payamata's (2013) regression model predicted QMS effectiveness

significantly by using established quality and satisfaction attributes. However, the authors introduced a lack of clarity in the study when they used the term satisfaction in place of effectiveness when describing the dependent variables in the regression model. In their explanations, these authors used effectiveness as synonymous with satisfaction throughout the study, and these lead to some confusion between their results and those from other studies on audit quality and satisfaction where effectiveness was not distinctively defined (Behn et al., 1997; Carcello et al., 1992; Samelson et al., 2006; Aikins 2012).

Alzeban and Gwilliam (2012) and Alzeban and Sawan (2015) had the goal of determining attributes of quality and effectiveness as relevant for the public sectors in the Middle East. These authors found that both auditees and auditors perceived that implementation of recommendations were positively associated with quality and positively related to effective auditing (Alzeban & Gwilliam, 2012; Alzeban & Sawan, 2015). Alzeban and Gwilliam (2012) and Alzeban and Sawan (2013, 2015) operationalized effectiveness as a variable similar to QMS standards for internal auditing: auditor ability to plan, contribution to organizational productivity, setting objectives and goals to ascertain consistency of audit results, implementation of internal audit recommendations, evaluating and improving risk management, evaluating internal control systems and making recommendations for follow-up. Even though Alzeban and Gwilliam (2012) used the operational definition for effectiveness similar to international (ISO) standards, the cultural influence on participants' perspective may have influenced some specific results in ways not found in other cultures. I discuss this issue in more detail below.

In a study following up on Alzeban and Gwilliam (2012), Alzeban and Sawan (2015) investigated auditee perceptions of public sector internal auditors, and they emphasized whether auditor characteristics and behaviors predicted perceived levels of implementation. The

independent variables included a) auditor tenure (time on the audit team); b) independence (not reporting through the department for which they audited); c) expertise (level of perceived competence/education and credentials); d) frequency of meetings between auditors and managers, appointment (or dismissal) of the chief of an internal audit team; e) manager support of the internal auditor; and f) systematic formal reviews of work at the formal stages of internal audit process. These variables used by Alzeban and Sawan (2015) and the results found were similar to those associated with audit quality in prior studies (Aikins, 2012; Carcello et al., 1992; Alzeban & Gwilliam, 2012; Kilgore et al., 2014; Samelson et al., 2006), and audit satisfaction (Aikins, 2012; Behn et al., 1997; Modlin & Stewart, 2014; Samelson et al., 2006). A key result supported that auditees implementation of audit recommendations were greater when they perceived higher levels of independence of members of the audit team, higher perceived expertise of the team members, and the increased frequency of meetings between the audit team, the chief auditor, and the auditees (similar to Aikins [2012] client relationships construct). These results support the choice of similar variables for this proposal where the purpose is to predict implementation of recommendations as a function of quality/satisfaction dimensions.

A caveat for interpreting these results is that these studies from Alzeban and Gwilliam (2012), and Alzeban and Sawan (2013, 2015) were performed in Saudi Arabia, and the cultural differences with the U.S. may impact how these results can be generalized (Alzeban, 2015). A key difference lies in the collectivist attitude of middle-eastern countries. Alzeban (2015) found that internal audit quality was acknowledged by Saudi auditors/auditees as an accomplishment of individual auditors much as it is in the U.S.; however, this leaves an acceptance gap for the “an audit quality culture” within the Saudi culture. For example, auditors/auditees more often attributed the variable of auditor expertise as an individual characteristic more than as a group

descriptor. The characteristic of expertise was not associated with auditor quality as often by Saudi auditees in the private and public sectors as it is in the U.S. and other western cultures (Alzeban, 2015). Researchers in middle-eastern cultures found collectivism as positively associated with audit quality and effectiveness (Alzeban, 2015) and this can lead to an interpretation of quality and effectiveness attributes as less positive when viewed by those across collectivist cultures (Dicle & Usluer, 2016). Similarly, Djati and Payamta (2013) studied the perception of quality and effectiveness for internal audit managers of the ministry of Finance in Indonesia. They used factors of the audit process (planning, execution, and included promotion of organizational culture as an outcome. The regulatory environment and cultural standards of behavior differ between Indonesia, the Middle East, and the U.S. For example, the construct of organizational culture differs in Indonesia from these other regions; however, the Indonesian culture is collectivist as is Saudi Arabia when compared to the West. We can expect that the participants from this region to hold collectivist outcomes in mind as they ranked the goals of promotion of organizational culture in relation to other auditor conduct variables (Dicle & Usluer, 2016) highly. The authors did not comment on this issue, and it is not clear how this may have specifically affected their results, but their use of the survey from Samelson, Lowensohn, and Johnson (2006) to collect data on behavioral attributes from researchers with a Western mindset, may have influenced the study outcomes.

### **Audit Quality/Satisfaction and Implementation**

As mentioned above, a potential audit outcome, which may be associated with quality, satisfaction, and effectiveness is the degree of auditee implementation of auditor recommendations (Aikins, 2012; Alzeban & Sawan, 2013; 2015). For the study, I defined the dependent variable to encompass auditee acceptance, adoption, and implementation of audit

findings. For this study, I adopted Aiken's (2012) variables as measures for perceived audit quality/satisfaction, to reflect perceptions of the auditor's characteristics or attributes, their behaviors, and performance. I discuss the choice of Aikins (2012) potential predictor variables for this study and comparisons of their definitions with other studies within this section.

Some potential predictors related to this proposal include those auditor characteristics correlated with quality, satisfaction, where the researchers either used these synonymously with effectiveness or formally defined it. These include industry expertise, experience, tenure, team rotation, auditor independence, and professional education/credentials (Aikins 2012, Alzeban & Gwilliam, 2012; Alzeban & Sawan, 2015, Behn et al., 1997, Carcello et al., 1992, Elder et al., 2015; Fountain et al., 2013; Lenz & Hann, 2015; Litt et al., 2015; Modlin & Stewart, 2014; Samelson et al., 2006; Tepalagul & Lin, 2015). The construct of experience can include experience with the client, with the industry or government, or as years of experience as an auditor. In some cases, these can overlap with the idea of auditor expertise, where the authors may consider expertise to include knowledge of an industry and as discussed above this is important for government/public auditing (Aikins, 2012; Modlin & Stewart, 2014; Samelson et al., 2006). Expertise may also include the level of credentials (CPA) and levels of education (Aikins, 2012; Alzeban & Gwilliam, 2012, Alzeban and Sawan, 2015; Modlin & Stewart, 2014; Samelson et al., 2006). In their studies, concerning internal audit in the public sector, Aikins (2012), and Alzeban and Sawan (2015) found that auditor experience was predictive of perception of audit recommendations implementation. However, the authors defined these slightly differently than Aikins (2012), Alzeban and Sawan (2015) included competence and credentialing together as a part of the experience level perception, and Aikins (2012) broke these dimensions apart on survey items that were not composite for a single variable. Aikins (2012)

included two variables related to professional designation (i.e., credentials) and background, which are not as distinguished in the other study, but nonetheless, the similar dimensions of these variables make clear that there was a positive predictive relationship between perceptions of these types of auditor characteristics and adoption/implementation of recommendations.

Alzeban and Sawan (2015), and Alzeban and Gwilliam (2012) found significant associations between management support of the internal audit and perceived levels of recommendation implementation; however, Aikins (2012) did not address the variable of management support. It is not necessary to include this variable within the study because manager support of their internal audit teams is likely dis-similar to state led auditor relationships to local managers. State-led audit teams do not reside within the audit locality in the way that internal auditors do, and the definition of perceived level of support from managers within the auditee organizational structure is not as relevant for external and state-led auditors. As compared to this aspect of internal auditing, the state-led audit teams function more similarly to external auditors than internal (Cagle & Pridgen, 2015; Carslaw et al., 2012; Elder et al., 2015; Rich & Zhang, 2014).

Auditor tenure can be defined as the length of time working on an audit team (as either internal or external auditor), time employed by a specific firm, and working with a specific client. Auditor tenure or duration of experience with the auditee positively predicted quality and/or satisfaction, and effectiveness (Aikins, 2012; Alzeban & Gwilliam, 2012; Behn et al., 1997; Bell, Causholli, & Knechel, 2015; Carcello et al., 1992; Carcello & Nagy, 2004; Elder et al., 2015; Fountain et al., 2013; Litt et al., 2015; Samelson et al., 2006). Generally, audit tenure was more important to private sector clients (Fountain et al., 2013; Litt et al., 2015) than to local government manager's perceptions of audit quality (Elder et al., 2015; Samelson et al., 2006).

For the study audit, tenure, and rotation can be a controlled given that the State Audit Office in Minnesota sets the auditor tenure and rotation policies across all municipalities subject to state-led audit teams. In Aikins (2012) study of auditor views on auditee perceptions of quality and recommendation compliance, he did not consider auditor tenure as useful for similar reasons.

Auditor independence is usually defined as the degree of separation between the auditor, auditee, and the authority to which auditor must account. Auditor tenure, auditor rotation, and auditor independence are closely related variables and used similarly across studies (Kilgore et al., 2014; Knechel et al., 2012 Tepalagul & Lin, 2015). The related variables auditor rotation and audit tenure, are more frequently associated with quality and satisfaction with audits for private sector clients (Fountain et al., 2013; Rich & Zhang, 2014; Litt et al., 2015; Tepalagul & Lin, 2015) than for local government managers (Elder et al., 2015; Samelson et al., 2006). In general, frequent audit firm and audit team rotations are associated with a change of audit firms, which indicate short tenure. Longer tenure is associated with the perception by both auditors and clients/auditees of decreased independence in the private sector (Fountain et al., 2013; Kilgore et al., 2014; Litt et al., 2015; Tepalagul & Lin, 2015). Fiolleau, Hoang, Jamal, and Sunder (2013) found in the private sector that short tenure could affect auditor/client relations; thus, they showed that objective auditor characteristics affected auditor behavioral variables, such as those related to client relationships. Auditees and auditors valued independence as an indicator lack of coercion and bias; therefore, a perception of a high degree of independence has been associated with a perception of high-quality auditing (Alzeban & Sawan, 2015; Behn et al., 1997; Cagle & Pridgen, 2015; Lenz & Hahn, 2015; Tepalagul & Lin, 2015). Both Aikins (2012) and Alzeban and Sawan (2015) found that the concept of auditor independence was a significant predictor recommendation implementation within the public sector. However, Alzeban and Sawan (2015)

studied this variable in the Middle East, and as discussed above, the definition of independence may differ across cultures (Alzeban, 2015; Dicle & Usluer, 2016). Since the Single Audit Act (1984, 1996), the mandatory use of state-led audits may have decreased the influence of auditor independence as an important contributor to perceptions of audit quality for local managers (Elder et al., 2015). Samelson, Lowensohn, and Johnson (2006) found that rigor of within some local and state requirements for establishing auditor independence likely contributes to the lack of significance auditees give to auditor independence in their perceptions of quality. Auditees in the public sector tended to expect independence would not factor into audit quality because they expected tight regulation. Other studies of auditing for localities with both state led audits, and external audits showed that auditor independence, auditor rotation, and tenure, were not significantly associated with auditee perceptions of quality (Litt et al., 2014; Tepalagul & Lin, 2015). In contrast, the weight of evidence for the private sector supports that independence, rotation, and tenure are all significantly associated with perceptions of audit quality by both the auditor and client (Fountain et al., 2013; Litt et al., 2014; Tepalagul & Lin, 2015). Even with potential differences in quality perceptions across some localities with external audit, by choosing to investigate only state-led audits, the inclusion of the variable of auditor independence for the study seemed less important.

### **Behavioral Attributes of Quality, and Audit Recommendations**

In a foundational study, Behn, Carcello, Hermanson, and Hermanson, (1997) supported the relevance of perceptions of auditor behaviors as proxies for perceived audit quality and effectiveness of auditing. Their findings indicated that greater awareness of client needs, greater involvement of leadership, continuing interaction with an audit committee, auditor industry expertise, prior experiences with the client and conduct of fieldwork are all important to improve



audit effectiveness and improve perceptions of its quality. Their evidence also supported increased satisfaction if there was a strong working relationship between the leadership and the auditor. Overall, communication between the stakeholders was instrumental in achieving satisfaction. As discussed above, I used behavioral attributes and variables developed by Samelson, Lowensohn, and Johnson (2006) and used by Aikins (2012) as a basis for this study, and these attributes, as described above, bear similarity to ISO/QMS standards for quality and effectiveness. Aikins (2012) and Alzeban and Sawan (2015) showed similarly defined constructs were predictive of adoption of recommendations

Because the audit teams tend to consist of relatively few numbers of professionals, the relationships between auditor and auditees, and the attributes of the auditors may be important in assessing audit quality (Kilgore et al., 2014; Schroeder et al., 1986). Constructs used to capture these relationships include responsive to clients, professionalism, understanding of client needs and systems, communication of audit procedures and findings from reports, and follow-up on implementation of recommendations (Aikins, 2011; Behn et al., 1997; Kilgore et al., 2014; Samelson et al., 2006). Within this study, I considered several key variables related to auditor characteristics and audit satisfaction to test their relationships to the adoption of auditor recommendations: due diligence of auditors, quality control, and client relationships (Aikins, 2012; Carcello et al., 1992; Samelson et al., 2006). Some researchers defined and operationalized due diligence, quality control, and client relationships in similar ways. These authors showed that these variables predicted auditee quality/satisfaction and/or quality in both the private (Behn et al., 1997; Carcello et al., 1992; Kilgore et al., 2014), and public sectors (Aikins, 2012; Alzeban & Gwilliam, 2012; Alzeban & Sawan, 2015; Samelson et al., 2006; Kilgore et al., 2014). Audit client adoption of audit recommendations is defined as auditee's

acceptance or “buy-in” of recommendations (Aikins, 2012; Djati & Payamta, 2013), and this was the dependent variable for the study. As discussed above, there is a wealth of evidence supporting that the specific circumstances and attributes of the auditors may be important for auditee acceptance of recommendations, and the evidence merits investigating the relationship between this dependent variable, and the three variables related to auditor characteristics as described above.

### **Summary**

Auditing quality, satisfaction, and effectiveness are the subject of research and public scrutiny and concern (Aikins, 2012; Carslaw et al., 2012; Elder et al., 2015; GAO, 1986, 1989, 2007, 2012, 2016; López & Peters, 2010; Modlin & Stewart, 2014; Sneed et al., 2015). Some of these concerns derive from public consciousness of cases of fraud in local governments and concerns over costs of financing and regulating these governments (Denison & Gibson, 2013; Phillips & Dorata, 2013; Sneed et al., 2015; Wells & McFadden, 2010). In part to avoid fraud and to regulate costs, the federal government has mandated private (Coates, & Srinivasan, 2014; SOX, 2002) and public-sector regulations (Single Audit Act, 1984, 1996) for auditing. These regulations differ substantially between public and private entities; although, stakeholders have reached no consensus, there has been considerable debate on the effectiveness of these regulations and on comparisons of these between public and private sector needs for regulation (Coates & Srinivasan, 2014; Knechel, 2015; Matkin, 2010a, 2010b; Sneed et al., 2015). These issues of fraud and the basis for regulation drive a need for understanding how high quality, effective auditing can take place.

The purpose of this study concerns whether local government auditees’ perceptions of quality and satisfaction predict auditee acceptance, adoption, and timely implementation of

auditor recommendations. The construct of audit quality has no widely accepted definition among researchers (Kilgore et al., 2014; Knechel et al., 2012). However, internationally recommended standards for implementation of management systems (e.g., QMS) audit processes and procedures have similarities with some of the seminal empirical findings concerning the indirect variables, constructs, and attributes associated with quality and satisfaction (Badura & Saidin, 2013; Djati & Payamta, 2013; Beckmerhagen et al., 2004). Other normative approaches to defining audit quality include counting the numbers of audit finding (Cagle & Pridgen, 2015; Carslaw et al., 2012; DeAngelo 1981; Deis & Giroux, 1992; Kilgore et al., 2014; Kilgore et al., 2014; López & Peters, 2010; Samelson et al., 2006) and hours spent on an audit (Deis & Giroux, 1992). However, these approaches do not capture most of the subtleties underlying auditing process.

Many of the definitions/variables under consideration for audit quality are less direct, including attributes of quality/satisfaction associated with auditor behaviors. There is consistency across studies in the variables found to be associated with quality and satisfaction (Aikins, 2012, 2013; Alzeban & Gwilliam, 2012; Alzeban & Swain, 2015; Behn et al., 1997; Cagle & Pridgen, 2015; Carcello et al., 1992; Christensen et al., 2015; Johnson et al., 2012; Kilgore et al., 2014; Knechel et al., 2012; Modlin & Stewart, 2014; Samelson et al., 2006; Schroeder et al., 1986). However, there are differences in the relative significance of these, which depend on the context of the study. For example, stakeholders perceived the relative importance of some variables differently depending on whether participants were from the private sector or public sector and what role they play in the audit process (Lenz & Hahn, 2015; López & Peters, 2010; Sneed et al., 2015). Stakeholders in the audit process can have different perceptions and definitions of audit quality, and therefore, researchers should be cognizant of

how they measure quality within specific contexts (Behn et al., 1997; Carcello et al., 1992; Kilgore et al., 2014; Knechel et al., 2012; Schroeder et al., 1986). As reviewed here, the issue may be especially true when considering studies produced across different cultures (Alzeban, 2015; Dicle & Usluer, 2016; Warming-Rasmussen & Jensen, 1998).

Additionally, I have reviewed the issues of whether researchers need to distinguish between quality and satisfaction in all studies. Evidence supported that customer perception of service quality, and customer satisfactions were distinct constructs within some sub-disciplines of business research, particularly in marketing (Caruana et al., 2000; Bansal & Taylor, 2015). However, researchers working to understand auditing quality have not substantiated a distinction between quality and satisfaction (Behn et al., 1997; Samelson et al., 2006; Warming-Rasmussen & Jensen, 1998). This is partly because the underlying attributes associated with quality overlap substantially with those of satisfaction (Aikins, 2014; Alzeban & Sawan, 2015; Modlin & Stewart, 2014; Samelson et al., 2006). As I determined through my literature review, many researchers continue to use the terms quality, satisfaction, and effectiveness of audits interchangeably and do produce viable results within their studies.

The lack of a consensus definition for audit quality may have contributed to slow development of research on the topic of quality, satisfaction, and effectiveness of auditing (Kilgore et al., 2014; Knechel et al., 2012; Lenz & Hahn, 2015). Studies of public sector auditing related to quality/satisfaction and effectiveness are fewer than on the private sector (Aikins, 2012; Carslaw et al., 2012; Djati & Payamta, 2013; Alzeban & Gwilliam, 2012; Alzeban & Sawan, 2015; Lenz, & Hahn, 2015; Samelson et al., 2006). However, results compared from across studies of both private and public sectors reveal some factors related to

audit quality that are consistently found across studies. This suggests a need for further research concerning the quality of public auditing.

As discussed above, results across studies showed that auditor relationships to clients and client perceptions of auditor behaviors correlated positively with perceptions of audit quality and in some cases with auditee satisfaction (Aikins, 2012; Alzeban & Gwilliam, 2012; Alzeban & Sawan, 2015; Behn et al., 1997; Carcello et al., 1992; Modlin & Stewart, 2014; Samelson et al., 2006; Schroeder et al., 1982). Researchers found that these behavioral attributes were more subjective than direct measures like counts of audit exceptions. Importantly, positive perceptions of an auditor and auditees satisfaction have been positively associated with objective analytics such as numbers of findings reported (Cagle & Pridgen, 2015; Kilgore et al., 2014) and firm size (Carslaw et al., 2012; Deis & Giroux, 1992; Johnson et al., 2012; López & Peters, 2010). This gives assurances that these constructs capture some related dimensions of the variables of interest. To fulfill the study purpose, indirect proxies for audit quality that are attributes of auditor behavior, due diligence of the auditors, quality control measures were taken by the auditors, relationships with the clients, and auditee perceptions of auditor behaviors, were tested to predict the degree of auditee implementation of recommendations.



### Chapter 3: Research Method

According to the GAO, local governments are sometimes receiving unacceptable auditing services. A PCIE report showed that approximately 34% of audits at local levels were deficient (GAO & PCIE, 2007). These reports evoked concern from researchers (Aikins, 2013, 2012; López & Peters, 2010; Matkin, 2010b; Sneed et al., 2015), the federal government (GAO, 1986, 2007, 2012, 2016; Matkin, 2010b), and state and local governments (Aikins, 2013, 2012; Cagle & Pridgen, 2015; Sanger, 2013). Issues contributing to an overall lack of effective auditing are that negative auditee perceptions of audit quality and low satisfaction can decrease the tendency of auditees to adopt of auditor recommendations (Aikins, 2013, 2012; Alzeban & Sawan, 2015; Burton et al., 2012; Samelson et al., 2006). This can lead to less effective financial reporting and fiscal control at the local level. The problem addressed in this study is that local government managers sometimes do not adopt and implement audit recommendations (Aikins, 2012; Alzeban & Swain, 2015). This often occurs when auditees' perceptions of audit quality and satisfaction were low (Aiken, 2013; Lenz & Hahn 2015; Knechel et al., 2012; Kilgore et al., 2014; Samelson et al., 2006); thus, reducing the potential effectiveness of an audit (Aikins 2012; Djati & Payamta, 2013; Modlin and Stewart (2014).

#### Research Methodology and Design

The purpose of this quantitative, non-experimental study is to determine whether local government managers' perceptions of audit quality can predict their adoption of audit recommendations. The aim was to examine auditee perceptions of state-mandated audits and auditors, and the relationship of these variables to auditee implementation of the recommendations in localities across the state of Minnesota. A quantitative design best accomplished this goal because it allowed hypothesis testing and generalizability of the results

(Vogt et al., 2012). However, the participants could be selected randomly or assigned to a control group; thus, the study could not be completed as a true experimental design. To test whether independent variables related to perceptions of audit quality can significantly predict the tendency to implement recommendations. Qualitative methods would not be useful for this study because the goal is not to obtain previously unexplored details of individual experiences (Ingham-Broomfield, 2015; Vogt et al., 2012; Miles et al., 2014) of audit processes and use of audit recommendations.

To collect data concerning senior managers' perceptions of auditing quality, and adoption and implementation audit recommendations, I used survey methods. Financial managers' perceptions of audit quality have been quantified by using Likert-style surveys in prior studies (Aikins, 2012; Behn et al., 1997; Carcello et al., 1992; Djati & Payamta, 2013; Samelson et al., 2006; Schroeder et al., 1986). I used a survey based upon Aikins (2012) 7-point Likert-style survey. I provided internet access through a link to survey monkey so that participants could access the survey. Those managers who have the authority to implement state auditor recommendations within their local governments were selected for participation.

The three predictor variables selected were due diligence of the auditors, auditor quality control, and auditor-client relationships (Aikins, 2012; Samelson et al., 2006). Due diligence of auditors significantly predicts auditee satisfaction and perceptions of quality in both the private and public sectors (Behn et al., 1997; Carcello et al., 1992; Samelson et al., 2006). Auditee perceptions of auditor quality control/planning procedures and auditor-client relationships can influence client's overall perceptions of quality (Aikins, 2012; Behn et al., 1997; Carcello et al., 1992; Samelson et al., 2006). Researchers studying the public sector have not explored the relationship between auditors perceived due diligence and auditees' adoption of auditor



recommendations. Researchers have found that a client's overall perceptions of quality are influenced by perceptions of auditor quality control/planning procedures and auditor-client relationships (Aikins, 2012; Behn et al., 1997; Carcello et al., 1992; Samelson et al., 2006).

In states where there are no mandated standards across jurisdictions and/or mandated state team-led audits, local internal auditors, and private CPA firms may conduct audits by regulations that differ across localities (Aikins, 2012; Cagle & Pridgen, 2015; Carslaw et al., 2012; Rich & Zhang, 2014; Samelson et al., 2006). Due to these potential differences in local auditing standards, I am choosing to examine state-led audits within Minnesota. Minnesota's State Office of Auditing has set standards for state-mandated audits, and by examining only state-led audits, I can reduce the impact of differing standards across independent local municipalities. Potential confounding and control variables, controlled inherently by examining state audits, include audit team size, cost, (Carslaw et al., 2012; López & Peters, 2010; Samelson et al., 2006), auditor independence, and auditor professional status (Aikins, 2012; Cagle & Pridgen, 2015; Modlin, 2016; Rich & Zhang, 2014). By working within a state with mandated local auditing, use of resources and costs across municipalities, audit team constituencies, and auditor professional standards were consistent. The perceived independence of auditors and professional status are associated with perceptions of auditor quality (Aikins, 2012; Cagle & Pridgen, 2015; Rich & Zhang, 2014); however, these variables are not relevant to the study because the state assigns auditors across the localities and they are not members of the local management offices.

The senior managers, who were participate in the survey, have no role in the audit process, when state-led audit processes are underway, therefore, these managers may then provide an assessment of their perceptions of the quality of the audit and auditor

recommendations. All variables were measured on a 7-point scale, as adapted from Aikins (2012). The respondents indicated their agreement and disagreement to survey items that measure composite variables: adoption of auditor recommendations and the predictors, which were constructs of auditor behaviors that proxy for perceived audit quality. Data collected from the survey allowed the following research question and hypotheses to address the problem of local auditor reticence to adopt auditor recommendations:

**Q1.** Do the perceptions of local government managers of audit quality, as measured by their perceptions of auditor due diligence, auditor quality control, and quality of auditor-client relationships predict local government adoption of government state auditor's recommendation?

**Hypotheses.**

**H1<sub>0</sub>.** Local government managers' perception of audit quality as measured by auditor due diligence does not significantly predict adoption of state audit recommendations.

**H1<sub>a</sub>.** Local government managers' perception of audit quality as measured by auditor due diligence does significantly predict adoption of state audit recommendations.

**H2<sub>0</sub>.** Local government managers' perception of auditor quality as measured by auditor quality control does not significantly predict adoption of state audit recommendations.

**H2<sub>a</sub>.** Local government managers' perception of audit quality as measured by auditor quality control does significantly predict adoption of state audit recommendations.

**H3<sub>0</sub>.** Local government managers' perception of audit quality as measured by the quality of auditor-client relationships does not significantly predict adoption of state audit recommendations.

**H3<sub>a</sub>.** Local government managers' perception of audit quality as measured by the quality of auditor-client relationships does significantly predict adoption of state audit recommendations.

**H4.** The predictors auditor due diligence, auditor quality control, auditor client relations do not jointly and significantly predict adoption of state auditor recommendations.

**H4a.** The predictors auditor due diligence, auditor quality control, auditor client relations do jointly and significantly predict adoption of state auditor recommendations.

### **Population and Sample**

The population under study was financial managers of local counties and municipalities in the state of Minnesota. In Minnesota, there are 1015 independent municipalities subject to state audit (US Census, 2010; Minnesota Office of the State Auditor, 2016). Within Minnesota, local municipalities and counties must have a constituent population of 2500 or greater (Single Audit Act 1984 [1996]; Minnesota Office of State Auditor, 2016). The population of local managers will be those who are responsible for interacting with external auditors and receiving and approving audit reports from State auditors, and as such, they are qualified as sample participants.

Volunteers were recruited through the website of MFOA ([www.mngfoa.org](http://www.mngfoa.org)), which has over 500 members. The sample of senior financial managers from local governments was selected from those who volunteered and who were eligible and met the inclusion criteria. The eligibility of participants was purposefully limited in several ways. Participants were selected from local municipalities and counties where a financial manager worked directly with state auditors during a mandated state audit within the last two years. All participants had been employed with their current employer at least three years and had been employed in government finance or accounting for three to five years. All participants had been in one to three state-led audits. The participants were adults ages 18 to 65.

A g power estimate for sample size yielded a result of 77 for a linear regression with three predictors (power of the test  $\geq 0.8$ , type one error or  $\alpha = 0.05$ , and medium size effect; Faul et al., 2009). Authors of prior studies reported a 21% to 50% return rate for surveys when using similar populations and similar surveys (Aiken, 2012; Alzeban & Swain, 2015; Samelson et al., 2006). Even with a return rate as low as 5% to 10%, it was estimated that 77 respondents could be obtainable. I carried out passive recruitment after gaining permission (Appendix A) to use the membership list (approximately 500 members) of the Minnesota Government Financial Officers Association ([www.mngfoa.org](http://www.mngfoa.org)) by posting an invitation to participate on their website (Appendix B). From those who responded to the survey, a sample of 54 senior financial managers from local governments met the eligibility criteria.

### **Materials/Instrumentation**

I used a 7-point Likert-style survey developed by Aikins (2012; Appendix C). Aikins (2012) computed Cronbach's alpha was .789 for all variables measured. According to Nunnally (1978) and Churchill (1979) constructs with a Cronbach's alpha equal to or greater than 0.70 have internal consistency. Therefore, Aikins' (2012) survey has construct validity for variables to be measured in the study.

## Operational Definitions of Variables

The operational definitions for the dependent and independent variables are in Table 1 below.

There are three predictor variables and one dependent variable. The subscale variables, which compose measures of these variable categories, are listed in the table.

Table 1

### *Operationalized Variables*

Variable Name	Operation definition
Dependent Variable	
Adoption of audit recommendations	This is a continuous level variable. Auditee responses to survey items capture their post-audit plans and actions of local government to adopt recommendations. The local government managers' documentation for action plans and implementation of these within deadlines and other questions concerning these activities indicate their degree of acceptance. Aikins (2012) showed the relevance of adoption of recommendations as related to perceptions of audit quality by the <i>auditors</i> of the local public sector.
Independent Variables	
Auditor due diligence	A continuous level variable, defined by survey items assessing client perceptions of the auditor's risk assessment, plan for tracking/ follow-up on issues, and timeliness on follow-ups. Aikins (2012) established a relationship between audit quality and auditor due diligence.
Auditor quality control	This is a continuous level variable defined by client perceptions of their review of the state auditor's work, and any state-level peer review of the auditors' reports. This variable is related to perceptions of audit quality (Aikins, 2012).
Auditor-Client relationships	This is a continuous level variable defined by client perceptions of auditor's understanding of client's communications of risks, auditors' communication of findings before the final report, opportunity to review auditor draft of recommendations before the final report. Aikins (2012) and Samelson et al. (2006) found that client relationships influence perceptions of quality.

## Data Collection and Analysis

Before data collection, appropriate permission was obtained from the professional organization from which participants were recruited (Appendix A). Access to the survey was given through a link posted on the organization's website (Appendix B), and participants were presented with an informed consent form before they were allowed access to the survey (Appendix D). To collect data, I used a 7-point Likert-style survey (Aikins, 2012). Aikins had adapted the survey items from Samelson, Lowensohn, and Johnson (2006) and Schroeder Solomon, & Vickrey, 1986) and Aikins (2012) tested these for reliability as described above. The 7-point scale has values from -3 to +3 and a total score for each construct or independent/predictor variable is computed based on the number of items for each variable. The total score for auditor due to diligence ranges -18 to +18, auditor quality control -18 to +18, auditor client relations -15 to +18; the total score for audit quality is -87 to +87. The dependent variable was measured on a similar subscale with a range of scores -18 to +18.

The survey was hosted by SurveyMonkey and after the survey was closed the data were downloaded into an Excel spreadsheet. The data were then exported into the statistical software package Sigma Plot 13.0. Using SigmaPlot, I tested the four hypotheses using corresponding regression models for the significance level of the  $F$  statistic ( $p \leq .05$ ) and assessment of the  $R^2$ . The procedures allowed for a test of the significance of each predictor regressed against the dependent variable, and all independent variables joint significance as predictors of the dependent variable. The statistical significance of each of the coefficients for the predictor variables were tested with  $t$  tests ( $p \leq .05$ ; Field, 2013).

Given that other researchers have demonstrated the variables, as operationalized and measured by this survey, were continuous (Aikins, 2012; Samelson et al., 2006; Schroeder et al.,

1986), it was expected that the dependent variable satisfied the requirement as a continuous and normally distributed variable. The assumptions for the data used in a multiple regression were formally tested. The Kolmogorov-Smirnov test was used to test the normality of the dependent variable (Field, 2013). If the dependent variable had not satisfied the requirement as a continuous variable, then a logistic regression would have been used. The Durbin-Watson statistic was used to test whether error terms were independent; a value near 2.0 of the statistic indicates no significant correlation between error terms (Field, 2013). The presence of heteroscedasticity or unequal variances in the error terms was tested using the Spearman rank correlation coefficient. Other requirements for linear regression include little or no multicollinearity, and this was tested using the variable inflation factor (VIF; Field, 2013). The assumption of a linear relationship was initially assessed via a scatter plots; the simple linear regressions for each predictor and the outcome variable were also used to make a clear validation of the assumption.

### **Assumptions**

I assume the participants would answer the survey questions honestly. Because the participants received the survey remotely and signed a consent form that indicated confidentiality and anonymity, it was assumed the participant's propensity to respond honestly and openly was enhanced. These participants were financial managers and local municipality employees, who are responsible for overseeing and interacting with state-led audit teams during their visits and for implementing auditor recommendations. I selected these participants from those who meet the requirements for the study and who have responded to an advertisement for members of the auditing profession in the state of Minnesota. The assumption that the survey was administered properly by the use of the established web- based organization, Survey Monkey™ is based on the reputation of the company. All of the selected managers reported that they had had

experience with state auditors within the last two years. The assumption was that the audit procedures had not changed substantially over the last two years and that the audit team constituency is similar. It is also assumed that the survey tools used did accurately reflect the variables due to the validity and reliability of both instruments. This assumption is made because both instruments were tested and shown to be valid and reliable (Aikins, 2012; Samelson et al., 2006).

A quantitative design meets the purpose of the study, and this allows me to collect data relevant to these participants that reflect their perspectives without revealing their identities. By analyzing these data with quantitative methods, the study was consistent and comparable to similar studies, and the results directly contributed to the purpose of this study and the identified gap in the literature (Aikins, 2012; Samelson et al., 2006). The purpose of this non-experimental, quantitative study was to determine whether the perceptions of local government managers' in Minnesota, concerning audit quality predict their adoption of audit recommendations. There are available surveys that capture the data of interest and allow the conduct of a quantitative study (Aikins, 2012; Samelson et al., 2006). A regression model allowed a test whether the quality of interactions and relationships to auditors predicted auditee implementation of recommendations. The assumptions for regression modeling included a normally distributed dependent variable with little or no multicollinearity between variables, no autocorrelation, and homoscedasticity. The use of SigmaPlot allowed for testing these issues to make sure there are no violations of test assumptions (Field, 2013). As described above if these assumptions are unmet then I would have used the appropriate methods to compensate for it. The statistical significance of each of the coefficients for the predictor variables were tested with *t* tests as was prescribed by standard methods. The assumption for the use of *t* tests was that the



data were approximately normally distributed and if they were not then an equivalent non-parametric test would have been used (Field, 2013).

### **Limitations**

I sampled from those managers who have worked with state auditors within the past two years. There is no way to definitively ensure that some participants (auditees) had more or less experience than others did with state led auditing teams in past years; however, explicit selection of managers with experience in the more remote past may lead to the selection of a sample with experience when procedures differed substantially. Restriction to managers in their roles with less than one to three years of experience or with the exact same levels of experience across the entire same of state auditors may limit the sample size and hamper recruiting. Based on state requirements, I have no reason to believe that my assumptions about the participants will lead to serious limitations within this study. The choice of a single state may limit the generalizability of the results; however, the results should not lose interpretability and generalizability due to conflicting and uncontrolled variables that are likely increased when data collected across states that have differences in procedures (Carslaw et al., 2012).

### **Delimitations**

I selected state led audits because these have more uniformity in how they are conducted as compared with external audits of localities by public CPA firms and internal audits that are meant to meet only local provisions (Aikins, 2012; Cagle & Pridgen, 2015; Carslaw et al., 2012; Rich & Zhang, 2014; Samelson et al., 2006). Financial managers were selected from municipalities and counties where the local population qualifies them for state audit per the Single Audit Act (1984) and per state regulations. These are jurisdictions with a population of at least 2500 (US Census, 2010; Minnesota Office of State Auditor, 2015). Under these conditions,

the state of Minnesota requires that regularly scheduled state led audits to be conducted for localities that meet these requirements. By examining only state-led audits, I can reduce the impact of differing standards across independent local municipalities. Several potential confounding variables shown to influence auditee perceptions of quality were controlled by the design of the study: the audit team size, audit costs (Carslaw et al., 2012; López & Peters, 2010; Samelson et al., 2006), auditor independence, and auditor professional status (Aikins, 2012; Cagle & Pridgen, 2015; Rich & Zhang, 2014). State audit teams have state standards set for professional standards, use of resources, allocated costs across municipalities (Behn et al., 1997; Modlin, 2016).

As consistent with the choice of the state-led mandatory audit, I have chosen to stay within a particular state's jurisdictions for the same reasoning. There is variance between states as to how they conduct state led audits (Aikins, 2012; Cagle & Pridgen, 2015; Carslaw et al., 2012; Rich & Zhang, 2014; Samelson et al., 2006). Some studies where multiple states were sampled have reduced generalization because the results are difficult to interpret due to these differences in the state procedures and regulations (Carslaw et al., 2012). To minimize these issues, I have chosen a state with clear operating rules as to their state-run auditing. The participants were selected randomly from those who respond to the advertisement, and this contributes to the generalizability of results. There is a need to apply what is learned from a study such as this to localities where data are collected consistently and can be used by stakeholders.

### **Ethical Assurances**

Procedures for NCU IRB were followed and permissions to recruit through the Minnesota Government Financial Officers Association's website. Participate data were kept

confidential by collecting these data through anonymous online survey and consent was obtained for each selected participant. The participants were de-identified through their participation in the survey, where a unique identifying number was assigned to each. The survey contains no information that specifically identifies the locality where respondents are employed. If needed, the name of the state can remove from the study during the completion of the dissertation manuscript and participants were informed that they could have access to the results if they choose to be. The survey contains no questions or information intended to evaluate the quality of the state's efforts to audit jurisdictions or the quality of the auditees attempts to implement recommendations. The data consists of auditee perceptions of their interactions with auditors. The auditees were not put at risk or in conflict with the state's interests or their employers' interests: participants were not asked to disclose details of inaccuracies, problems with auditing procedures and issues with implementation of recommendations. The participants were fully informed of details of the study and were aware that confidentiality was maintained. The research participants were informed of the voluntary nature and purpose of the study with the right to withdraw at any time through an informed consent form included with each survey (Appendix D). I will keep these data on a computer that only I can access for seven years post-study. The files will never contain identifying information from the participants, and these files will be destroyed after seven years. Any hard copies of any data will be destroyed upon completion of the study.

### **Summary**

The purpose of this quantitative, non-experimental study is to determine whether local government managers' perceptions of audit quality can predict their adoption of audit recommendations. This purpose addresses whether auditee implements auditor

recommendations with reasonable fidelity. A Likert-style survey was being used to measure the variables. Hypotheses were tested to determine auditee perceptions of state auditor due diligence, auditor quality control, and audit client relationships predict auditee implementation of the recommendations in localities across the state of Minnesota. I constructed a regression model to test these hypotheses. The data were tested for violations of regression methods. This quantitative design allows hypothesis testing and generalizability of the results (Vogt et al., 2012). For this regression analysis, a g power estimated of at least 77 participates was be sought as volunteers from a government auditors professional association.

## Chapter 4: Findings

The purpose of this non-experimental, quantitative study was to determine whether the perceptions of local government managers' in Minnesota, concerning audit quality predict their adoption of audit recommendations. Lack of implementation of audit recommendations has been suggested to continuing local government problems with fiscal oversight (Aikins, 2012; Alzeban & Sawan, 2015). Motivation for the research was to understand the relationships between auditor characteristic and behaviors and the tendencies for these local managers to adopt recommendations. Linear regression modeling was used to test these relationships. The predictor variables were constructs for auditor behaviors that proxy for perceived audit quality (Alzeban & Sawan, 2016; Behn et al., 1997; Carcello et al., 1992; Kilgore et al., 2014; Samelson et al., 2006) and were defined as in Aikins (2012): diligence of the auditors (AD), auditor quality control (AQC), and auditor-client relationships (ACR). The dependent variable was the adoption of audit recommendations (ADP) by the auditees.

Financial managers' perceptions of audit quality have been quantified by using Likert-style surveys in prior studies (Aikins, 2012; Behn et al., 1997; Carcello et al., 1992; Djati & Payamta, 2013; Samelson et al., 2006; Schroeder et al., 1986). I used a survey based upon Aikins (2012) 7-point Likert-style survey. Aikin's (2012) modified the survey from several similar surveys from seminal studies on perception of audit quality in the private and public sectors (Behn et al., 1997; Carcello et al., 1992; Samelson et al., 2006; Schroeder et al., 1986). Aikens (2012) and these studies, as well as more recent results (Alzeban & Gwilliam, 2012; Alzeban & Sawan, 2015; Djati & Payamta, 2013), have demonstrated the variables, as measured by this survey are continuous. Aikins (2012) found that all variables used in the survey had Cronbach's alpha computed at .789 or greater. According to Nunnally (1978) and Churchill

(1979) constructs with a Cronbach's alpha equal to or greater than 0.70 have internal consistency. Therefore, Aikin's (2012) version of this survey has construct validity for variables measured in the study. The constructs of the audit quality, which were predictor variables for in the study, were measured from total scores for each construct subscale. The participants were local government financial managers from local governments in Minnesota who were recruited through the MFOA. The participants responded to a link to an online survey to indicate a willingness to participate.

The chapter contains the results of the study including the demographics and tests of assumptions for regression modeling. The results are organized for the test of the research question by organizing findings for each of the four hypotheses tested. The results were followed by the evaluation of the finding and a summary of the chapter.

## **Results**

Three simple regression models and a multiple regression analysis were conducted to test the hypotheses related to the research question: "Do the perceptions of local government managers of audit quality, as measured by their perceptions of auditor due diligence, auditor quality control, and quality of auditor-client relationships predict local government adoption of government state auditor's recommendation?" An a priori power test was performed, and a sample size of 77 was estimated (power of 0.8, type one error of 0.05, and medium size effect, G-power software; Faul et al., 2009). Only 54 participants completed the survey, however, the resulting power of the overall multiple regression models tested was  $\beta = 1.00$  with  $\alpha = .050$ . The sample size was sufficient.

**Demographics.** The participants were adults ages 18 to 65. All participants had been employed with their current employer at least three years and had been employed in government

finance or accounting for at three to five years. All participants had been involved in one to three state-led audits. Therefore, 54 participants were eligible for the study.

**Descriptive statistics.** The total scores for audit quality of each the participants in the sample ( $n = 54$ ) ranged from a low of -24 to a high of 62 with a mean score of 38.48 ( $SD=12.66$ ). The range of values for each subscale item was -3 to +3. A total score was obtained for each participant on each of the predictors and the dependent variable subscales. The range of scores for AD was -9 to +17 (mean of 6.04,  $SD = 6.40$ ), AQC was -8 to + 15 (mean of 5.09,  $SD = 5.31$ ), ACR was -8 to +12 (mean = 4.00,  $SD = 4.60$ ), and for the dependent variable ADP, -7 to +18. mean of 4.98,  $SD = 6.24$ ).

**Tests of the statistical assumptions for the data.** Multiple regression analysis is robust for outcome variables measured on a continuous scale (i.e., interval or ratio) and when the predictor variables are either continuous or categorical (Field, 2013). The instrument used in this study is a 7-Likert scale, and social researchers argue that if the instrument contains multiple items with five to seven response scales, then Likert scale measures can be considered continuous (Field, 2015; Jamieson, 2004). Another assumption for data used in multiple regression is that the residuals are independent. Also, it is assumed that there is a linear relationship between the outcome variable and each of the predictor variable, and a linear relationship between the outcome variables and the predictor variables collectively. The error terms should demonstrate homoscedasticity and be approximately normally distributed. The data for the predictor variables should have low multicollinearity, and there should be no significant outliers and high leverage points. These assumptions were tested as described in the following sections.

**Independence of observations.** To test for independence of the observations, i.e., the residuals have no significant correlation, a Durbin-Watson statistic was computed. Durbin-Watson values close to 2.0 are an acceptable value indicating the error terms are independent or uncorrelated. The Durbin-Watson computed for the overall multiple regression was 2.02, and this value is consistent with independent observations (Field, 2013; SigmaPlot 13.0). Similarly, the Durbin-Watson statistic showed independence of residuals for simple regression relationships between each predictor and the ADP: 1.99 for AD, 2.37 for ACQ; .68 for ACR).

**Linearity.** A linear relationship between each independent variable and the dependent variable is an assumption for the data (Field, 2013). Scatter plots of each independent variable versus the outcome variable appeared to have a linear relationship. The Pearson Correlations between each predictor and the outcome variable were significant: AD with ADP was .46 ( $P = .000$ ); AQC with ADP was .62 ( $P = .000$ ); ACR with ADP was .462 ( $P = .000$ ). These results support the assumption of a linear association between these variables as the basis to perform simple linear and multiple regressions. The regression results confirmed an assumption of linear relationships between each predictor and the outcome variable.

**Homoscedasticity.** Homoscedasticity is the assumption that the distribution of the values of the dependent variable values is approximately similar across values of the predictor variable, i.e., there are equal variances for error terms (Field, 2013). SigmaPlot 13.0 has an option to compute a constant variance statistic which indicates the  $P$  value at which the variance of the residuals is constant. In SigmaPlot, the Spearman rank correlation coefficient is used to test the correlation between the absolute values of the residuals and the observed value of the dependent variable. For the data collected in the study, equal variances can be assumed ( $P = .251$ ).

Homoscedasticity can also be assessed by a visual inspection of a scatter plot of the standardized



predicted values of the regression model against the standardized residuals (Field, 2013). The inspection of the plot was also consistent with equal variances of residuals: the residuals appeared dispersed around a line with no apparent pattern (Field, 2013). Similarly, the constant variance statistic was insignificant for simple regression with each predictor and ADP ( $P = 2.88$  for AD;  $P = 3.01$  for ACQ;  $P = 2.35$  for ACR). The assumptions of homoscedasticity were met.

**Multicollinearity.** To test for multicollinearity, VIF was used to indicate the presence of a significant linear relationship between any two of the predictor variables (Field, 2013). Values of the VIF greater than 10 may indicate collinearity (Field, 2010). None of the VIFs computed for the predictors suggested multicollinearity: AD (VIF = 2.27), AQC (2.37), and ACR (2.45). Further examination of the data was unneeded, and the variables are assumed to have no significant multicollinearity. In other studies, the variable AD, AQC, and ACR have been shown to be independent factors related to audit quality (e.g., Carcello et al., 1992).

**Outliers, high leverage points, and highly influential points.** Outlier data points, high leverage points, and highly influential points can have a negative effect on the fit of the regression (Field, 2013). A visual inspection of plots of the data for each predictor with ADP suggested no significant outliers. The SigmaPlot leverage function was used to detect high leverage points at a level of 2.0 standard errors of the residuals. This statistical function indicated no points of significant high leverage. The computed Cook's distance values were consistent with these results. No significant high leverage points were detected, and the regression of these data can be considered to contain no influential cases.

**Normality.** A test for normality of residuals was performed using Kolmogorov-Smirnov test. The result of this test for the multiple regression indicated no significant deviation from a normal distribution for the residuals ( $P = 0.157$ ). Normality can also be assessed by visual

inspection of a histogram of the values for each independent variable with a normal curve imposed upon the plot (Field, 2013). A visual inspection of this plot revealed no apparent pattern of scattering suggesting a departure from the imposed normal curve.

**Research question one.** The single question for this study was “Do the perceptions of local government managers of audit quality, as measured by their perceptions of auditor due diligence, auditor quality control, and quality of auditor-client relationships predict local government adoption of government state auditor’s recommendation?” To address this question four hypotheses were tested. As represented throughout the chapter, the predictors were AD, AQC, and ACR. The dependent variable was ADP in all the models tested.

**Hypothesis one.** The first null hypothesis was “Local government managers’ perception of audit quality as measured by auditor due diligence does not significantly predict adoption of state audit recommendations.” The hypothesis was designed to test the significance of AD as a predictor of ADP using a simple regression model taking the form:  $ADP_i = \beta_0 + \beta_1 AD_i + \epsilon_i$ , where  $i$  = the  $i$ th participant. The results showed that there was a significant positive association between AD and the outcome variable ADP ( $R = 0.46$ ). However, the predictor AD explained only 21.30 % of the variance in ADP. The model was significant with only the one predictor  $F(1, 53) = 14.10$  ( $P = 0.000$ ). The coefficients for the constant term ( $\beta_0 = 2.26$ ,  $t = 2.150$ ,  $P = .036$ ) and AD were significant ( $\beta_1 = 0.45$ ,  $t = 3.76$ ,  $P = 0.001$ ). Notably, the normality test failed for residuals failed (Kolmogorov-Smirnov test,  $P = .013$ ) and the equal variance test for residuals also failed ( $P = .013$ ); however, the Durbin-Watson test for independent residuals was passed ( $DW = 1.96$ ). The lack of normality for the residuals can affect the estimation of the model coefficients but with a sample size greater than 30 the potential bias for coefficients is minimized (Field, 2013). The lack of homogeneity of variances can introduce bias in the  $t$  test for

coefficient significance, however, the power of the  $F$  test was high (.98), and the coefficient for AD was highly significant.

On the strength of the  $F$  test and significant coefficients, it appears the model confirmed a weak linear relationship between these variables: as AD increases the outcome variable ADP increases. The results led to the rejection of the null hypothesis and acceptance of the alternative hypothesis: local government managers' perception of audit quality as measured by auditor due diligence does significantly predict adoption of state audit recommendations. Therefore, as the level of perceived auditor due diligence increased then the auditee's tendency to adopt audit recommendations increased weakly.

**Hypothesis two.** The second null hypothesis was that "Local government managers' perception of audit quality as measured by auditor quality control does not significantly predict adoption of state audit recommendations." The hypothesis was designed to test the significance of AQC as a predictor of ADP using a simple regression model taking the form:  $ADP_i = \beta_0 + \beta_1 AQC_i + \epsilon_i$ , where  $i$  = the  $i$ th participant. There was a significant association between AQC and ADP ( $R = 0.620$ ). The predictor AQC explained 38.1% of the variance in ADP. The model was significant with  $F(1, 53) = 31.96$  ( $P = 0.000$ ). The model coefficient for the constant term was insignificant ( $\beta_0 = 1.29$ ,  $t = 1.37$ ,  $P = .176$ ), but the coefficient for AQC was significant  $\beta_1 = 0.73$ ,  $t = 5.70$ ,  $P = 0.000$ ). The tests of the model confirmed a linear relationship between these variables. The null hypothesis was rejected, and the alternative can be accepted: local government managers' perception of audit quality as measured by auditor quality control does significantly predict adoption of state audit recommendations. Therefore, as the level of perceived audit quality control increased then the auditee's tendency to adopt audit recommendations increased.

**Hypothesis three.** The third null hypothesis was that “Local government managers’ perception of audit quality as measured by auditor client relations does not significantly predict adoption of state audit recommendations.” The simple regression model took the form:  $ADP_i = \beta_0 + \beta_1 ACR_i + \epsilon_i$ , where  $i$  = the  $i$ th participant. The testing of the third null hypothesis demonstrated a significant association between ACR and ADP ( $R = 0.63$ ). The predictor ACR explained 40.02% of the variance in ADP. The  $F$  test was significant for this model,  $F(1, 53) = 35.01$  ( $P = 0.000$ ). The coefficient for the constant term was insignificant ( $\beta_0 = 1.54$ ,  $t = 1.74$ ,  $P = .087$ ), and ACR’s coefficient was significant and positive ( $\beta_1 = 0.86$ ,  $t = 5.92$ ,  $P = 0.000$ ). The tests of the model demonstrated a linear relationship between these variables. The null hypothesis was rejected, and the alternative is accepted that local government managers’ perception of audit quality as measured by auditor client relations does significantly predict adoption of state audit recommendations. Therefore, as the level of perceived auditor client relationships increased then the auditee’s tendency to adopt audit recommendations increased.

**Hypothesis four.** All three predictors are linearly related to the outcome variable, and all have significant relationships when tested individually. Therefore, an hypothesis for the variables’ joint prediction of the outcomes variable was performed. The fourth hypothesis was stated as “The predictors auditor due diligence, auditor quality control, auditor client relations do not jointly and significantly predict adoption of state auditor recommendations.” To test whether these predictors can significantly predict the outcome variable the following model was tested:  $ADP_i = \beta_0 + \beta_1 AD_i + \beta_2 AQC_i + \beta_3 ACR_i + \epsilon_i$ , where  $i$  = the  $i$ th participant. The constant term is represented by  $\beta_0$ . The term  $\epsilon_i$  represents residual or error terms for the  $i$ th participant.

There was a significant joint association ( $R = .68$ ) between the outcome variable, ADP, and the predictors, AD, AQC, and ACR. These predictors explained 46% of the variance in

ADP. The explained variance was higher in the multiple regression than for any of the simple regression models tested, but this may be due solely to the addition of variables (Field, 2013). The adjusted  $R^2$  was .43, and although the explained variance was slightly lower after addition of all the predictors, the model reflected a similar level of the explanation of variance after adjusting for the addition of variables. The regression model was significant,  $F(3, 50) = 14.38$  ( $P = .000$ ). The model coefficients for the constant and for AD were insignificant (Table 2). However, the coefficients for ACR and AQR were significant. The results suggested that these variables are most important to explain variability in ADP in this joint model. On the strength of the significant  $F$  test and the significant parameters for the predictors AQR and ACR, the null hypothesis is rejected that the predictors auditor due diligence, auditor quality control, auditor client relations do not jointly and significantly predict adoption of state auditor recommendations. The alternative hypothesis that these predictors can significantly predict the outcome variable is accepted. Therefore, as the levels of perceived auditor due diligence, audit quality control, and auditor client relations jointly increased then the tendency to adopt auditor recommendations increased.

**Table 2**

*Regression Coefficients*

<u>Variable</u>	<u>B</u>	<u>SE B</u>	<u>t</u>	<u>P</u>
$\beta_0$	.95	.93	1.02	.311
AD	-.10	.15	-.66	.511
AQC	.44	.19	2.37	.022
ACR	.60	.22	2.73	.009

Note. Constant ( $\beta_0$ ), auditor due diligence (AD), auditor

quality control (AQC), auditor client relations (AQR),

$n = 54$  and  $P$  values are based on a two-tailed  $t$  test with  $\alpha = .05$ .

**Demographics.** The participants were adults ages 18 to 65. All participants had been employed with their current employer at least three years and had been employed in government finance or accounting for at three to five years. All participants had been involved in one to three state-led audits. Therefore, 54 participants were eligible for the study.

**Descriptive statistics.** The total scores for audit quality of each the participants in the sample ( $n = 54$ ) ranged from a low of -24 to a high of 62 with a mean score of 38.48 ( $SD=12.66$ ). The range of values for each subscale item was -3 to +3. A total score was obtained for each participant on each of the predictors and the dependent variable subscales. The range of scores for AD was -9 to +17 (mean of 6.04,  $SD = 6.40$ ), AQC was -8 to + 15 (mean of 5.09,  $SD = 5.31$ ), ACR was -8 to +12 (mean = 4.00,  $SD = 4.60$ ), and for the dependent variable ADP, -7 to +18. mean of 4.98,  $SD = 6.24$ ).

**Tests of the statistical assumptions for the data.** Multiple regression analysis is robust for outcome variables measured on a continuous scale (i.e., interval or ratio) and when the predictor variables are either continuous or categorical (Field, 2013). The instrument used in this study is a 7-Likert scale, and social researchers argue that if the instrument contains multiple items with five to seven response scales, then Likert scale measures can be considered continuous (Field, 2015; Jamieson, 2004). Another assumption for data used in multiple regression is that the residuals are independent. Also, it is assumed that there is a linear relationship between the outcome variable and each of the predictor variable, and a linear relationship between the outcome variables and the predictor variables collectively. The error terms should demonstrate homoscedasticity and be approximately normally distributed. The data

for the predictor variables should have low multicollinearity, and there should be no significant outliers and high leverage points. These assumptions were tested as described in the following sections.

***Independence of observations.*** To test for independence of the observations, i.e., the residuals have no significant correlation, a Durbin-Watson statistic was computed. Durbin-Watson values close to 2.0 are an acceptable value indicating the error terms are independent or uncorrelated. The Durbin-Watson computed for the overall multiple regression was 2.02, and this value is consistent with independent observations (Field, 2013; SigmaPlot 13.0). Similarly, the Durbin-Watson statistic showed independence of residuals for simple regression relationships between each predictor and the ADP: 1.99 for AD, 2.37 for ACQ; .68 for ACR).

***Linearity.*** A linear relationship between each independent variable and the dependent variable is an assumption for the data (Field, 2013). Scatter plots of each independent variable versus the outcome variable appeared to have a linear relationship. The Pearson Correlations between each predictor and the outcome variable were significant: AD with ADP was .46 ( $P = .000$ ); AQC with ADP was .62 ( $P = .000$ ); ACR with ADP was .462 ( $P = .000$ ). These results support the assumption of a linear association between these variables as the basis to perform simple linear and multiple regressions. The regression results confirmed an assumption of linear relationships between each predictor and the outcome variable.

***Homoscedasticity.*** Homoscedasticity is the assumption that the distribution of the values of the dependent variable values is approximately similar across values of the predictor variable, i.e., there are equal variances for error terms (Field, 2013). SigmaPlot 13.0 has an option to compute a constant variance statistic which indicates the  $P$  value at which the variance of the residuals is constant. In SigmaPlot, the Spearman rank correlation coefficient is used to test the

correlation between the absolute values of the residuals and the observed value of the dependent variable. For the data collected in the study, equal variances can be assumed ( $P = .251$ ).

Homoscedasticity can also be assessed by a visual inspection of a scatter plot of the standardized predicted values of the regression model against the standardized residuals (Field, 2013). The inspection of the plot was also consistent with equal variances of residuals: the residuals appeared dispersed around a line with no apparent pattern (Field, 2013). Similarly, the constant variance statistic was insignificant for simple regression with each predictor and ADP ( $P = 2.88$  for AD;  $P = 3.01$  for ACQ;  $P = 2.35$  for ACR). The assumptions of homoscedasticity were met.

**Multicollinearity.** To test for multicollinearity, VIF was used to indicate the presence of a significant linear relationship between any two of the predictor variables (Field, 2013). Values of the VIF greater than 10 may indicate collinearity (Field, 2010). None of the VIFs computed for the predictors suggested multicollinearity: AD (VIF = 2.27), AQC (2.37), and ACR (2.45). Further examination of the data was unneeded, and the variables are assumed to have no significant multicollinearity. In other studies, the variable AD, AQC, and ACR have been shown to be independent factors related to audit quality (e.g., Carcello et al., 1992).

**Outliers, high leverage points, and highly influential points.** Outlier data points, high leverage points, and highly influential points can have a negative effect on the fit of the regression (Field, 2013). A visual inspection of plots of the data for each predictor with ADP suggested no significant outliers. The SigmaPlot leverage function was used to detect high leverage points at a level of 2.0 standard errors of the residuals. This statistical function indicated no points of significant high leverage. The computed Cook's distance values were consistent with these results. No significant high leverage points were detected, and the regression of these data can be considered to contain no influential cases.



**Normality.** A test for normality of residuals was performed using Kolmogorov-Smirnov test. The result of this test for the multiple regression indicated no significant deviation from a normal distribution for the residuals ( $P = 0.157$ ). Normality can also be assessed by visual inspection of a histogram of the values for each independent variable with a normal curve imposed upon the plot (Field, 2013). A visual inspection of this plot revealed no apparent pattern of scattering suggesting a departure from the imposed normal curve.

**Research question one.** The single question for this study was “Do the perceptions of local government managers of audit quality, as measured by their perceptions of auditor due diligence, auditor quality control, and quality of auditor-client relationships predict local government adoption of government state auditor’s recommendation?” To address this question four hypotheses were tested. As represented throughout the chapter, the predictors were AD, AQC, and ACR. The dependent variable was ADP in all the models tested.

**Hypothesis one.** The first null hypothesis was “Local government managers’ perception of audit quality as measured by auditor due diligence does not significantly predict adoption of state audit recommendations.” The hypothesis was designed to test the significance of AD as a predictor of ADP using a simple regression model taking the form:  $ADP_i = \beta_0 + \beta_1 AD_i + \epsilon_i$ , where  $i$  = the  $i$ th participant. The results showed that there was a significant positive association between AD and the outcome variable ADP ( $R = 0.46$ ). However, the predictor AD explained only 21.30 % of the variance in ADP. The model was significant with only the one predictor  $F(1, 53) = 14.10$  ( $P = 0.000$ ). The coefficients for the constant term ( $\beta_0 = 2.26$ ,  $t = 2.150$ ,  $P = .036$ ) and AD were significant ( $\beta_1 = 0.45$ ,  $t = 3.76$ ,  $P = 0.001$ ). Notably, the normality test failed for residuals failed (Kolmogorov-Smirnov test,  $P = .013$ ) and the equal variance test for residuals also failed ( $P = .013$ ); however, the Durbin-Watson test for independent residuals was passed

(DW = 1.96). The lack of normality for the residuals can affect the estimation of the model coefficients but with a sample size greater than 30 the potential bias for coefficients is minimized (Field, 2013). The lack of homogeneity of variances can introduce bias in the  $t$  test for coefficient significance, however, the power of the  $F$  test was high (.98), and the coefficient for AD was highly significant.

On the strength of the  $F$  test and significant coefficients, it appears the model confirmed a weak linear relationship between these variables: as AD increases the outcome variable ADP increases. The results led to the rejection of the null hypothesis and acceptance of the alternative hypothesis: local government managers' perception of audit quality as measured by auditor due diligence does significantly predict adoption of state audit recommendations. Therefore, as the level of perceived auditor due diligence increased then the auditee's tendency to adopt audit recommendations increased weakly.

**Hypothesis two.** The second null hypothesis was that "Local government managers' perception of audit quality as measured by auditor quality control does not significantly predict adoption of state audit recommendations." The hypothesis was designed to test the significance of AQC as a predictor of ADP using a simple regression model taking the form:  $ADP_i = \beta_0 + \beta_1 AQC_i + \epsilon_i$ , where  $i$  = the  $i$ th participant. There was a significant association between AQC and ADP ( $R = 0.620$ ). The predictor AQC explained 38.1% of the variance in ADP. The model was significant with  $F(1, 53) = 31.96$  ( $P = 0.000$ ). The model coefficient for the constant term was insignificant ( $\beta_0 = 1.29$ ,  $t = 1.37$ ,  $P = .176$ ), but the coefficient for AQC was significant ( $\beta_1 = 0.73$ ,  $t = 5.70$ ,  $P = 0.000$ ). The tests of the model confirmed a linear relationship between these variables. The null hypothesis was rejected, and the alternative can be accepted: local government managers' perception of audit quality as measured by auditor quality control does

significantly predict adoption of state audit recommendations. Therefore, as the level of perceived audit quality control increased then the auditee's tendency to adopt audit recommendations increased.

**Hypothesis three.** The third null hypothesis was that “Local government managers’ perception of audit quality as measured by auditor client relations does not significantly predict adoption of state audit recommendations.” The simple regression model took the form:  $ADP_i = \beta_0 + \beta_1 ACR_i + \epsilon_i$ , where  $i$  = the  $i$ th participant. The testing of the third null hypothesis demonstrated a significant association between ACR and ADP ( $R = 0.63$ ). The predictor ACR explained 40.02% of the variance in ADP. The  $F$  test was significant for this model,  $F(1, 53) = 35.01$  ( $P = 0.000$ ). The coefficient for the constant term was insignificant ( $\beta_0 = 1.54$ ,  $t = 1.74$ ,  $P = .087$ ), and ACR’s coefficient was significant and positive ( $\beta_1 = 0.86$ ,  $t = 5.92$ ,  $P = 0.000$ ). The tests of the model demonstrated a linear relationship between these variables. The null hypothesis was rejected, and the alternative is accepted that local government managers’ perception of audit quality as measured by auditor client relations does significantly predict adoption of state audit recommendations. Therefore, as the level of perceived auditor client relationships increased then the auditee’s tendency to adopt audit recommendations increased.

**Hypothesis four.** All three predictors are linearly related to the outcome variable, and all have significant relationships when tested individually. Therefore, an hypothesis for the variables’ joint prediction of the outcomes variable was performed. The fourth hypothesis was stated as “The predictors auditor due diligence, auditor quality control, auditor client relations do not jointly and significantly predict adoption of state auditor recommendations.” To test whether these predictors can significantly predict the outcome variable the following model was tested:

$ADP_i = \beta_0 + \beta_1 AD_i + \beta_2 AQC_i + \beta_3 ACR_i + \epsilon_i$ , where  $i$  = the  $i$ th participant. The constant term is represented by  $\beta_0$ . The term  $\epsilon_i$  represents residual or error terms for the  $i$ th participant.

There was a significant joint association ( $R = .68$ ) between the outcome variable, ADP, and the predictors, AD, AQC, and ACR. These predictors explained 46% of the variance in ADP. The explained variance was higher in the multiple regression than for any of the simple regression models tested, but this may be due solely to the addition of variables (Field, 2013). The adjusted  $R^2$  was .43, and although the explained variance was slightly lower after addition of all the predictors, the model reflected a similar level of the explanation of variance after adjusting for the addition of variables. The regression model was significant,  $F(3, 50) = 14.38$  ( $P = .000$ ). The model coefficients for the constant and for AD were insignificant (Table 2). However, the coefficients for ACR and AQR were significant. The results suggested that these variables are most important to explain variability in ADP in this joint model. On the strength of the significant  $F$  test and the significant parameters for the predictors AQR and ACR, the null hypothesis is rejected that the predictors auditor due diligence, auditor quality control, auditor client relations do not jointly and significantly predict adoption of state auditor recommendations. The alternative hypothesis that these predictors can significantly predict the outcome variable is accepted. Therefore, as the levels of perceived auditor due diligence, audit quality control, and auditor client relations jointly increased then the tendency to adopt auditor recommendations increased.

**Table 2**

*Regression Coefficients*

<u>Variable</u>	<u>B</u>	<u>SE B</u>	<u>t</u>	<u>P</u>
$\beta_0$	.95	.93	1.02	.311

AD	-.10	.15	-.66	.511
AQC	.44	.19	2.37	.022
ACR	.60	.22	2.73	.009

Note. Constant ( $\beta_0$ ), auditor due diligence (AD), auditor quality control (AQC), auditor client relations (AQR),  $n = 54$  and  $P$  values are based on a two-tailed  $t$  test with  $\alpha = .05$ .

### Evaluation of the Findings

In this study, auditee's perceptions of state-mandated audits and auditors were collected using a survey to understand some specific factors that may affect an auditee's implementation of the audit report recommendations. The results of this study are novel in that the results are the first among studies of local governments to demonstrate managers views on the topic. The predictor variables were selected because these were known to be related to audit quality but unknown in the context of local government managers adoption of audit recommendations (Aikins, 2012; Alzeban & Sawan, 2015; Cagle & Pridgen, 2015; Carslaw et al., 2012; Djati & Payamta, 2013; Samelson et al., 2006). The findings from the study are evaluated in this section with regard to the findings in the literature.

There is one overarching research question for this study: "Do the perceptions of local government managers of audit quality, as measured by their perceptions of auditor due diligence, auditor quality control, and quality of auditor-client relationships predict local government adoption of government state auditor's recommendation?" A multiple linear regression was performed to address the overarching question. Each predictor variable proved to have a significant linear relationship with the auditees' perceptions of adoption of audit recommendations. The results satisfied the linearity assumption for these data and proved that an appropriate use of simple and multiple regression was made. Other assumptions underlying

data used in multiple regression were also met, and the results of these tests supported the testing of the hypotheses.

The results from the tests of hypotheses one, two and three showed that each of the variables for the characteristics of auditor behavior were independently found to predict auditee adoption of audit recommendations. These results could not be assumed despite that it may have been expected. Auditee perceptions of auditors can positively affect perceptions of audit quality (Alzeban & Sawan, 2015; Behn et al., 1997; Carcello et al., 1992; Modlin & Stewart, 2014; Samelson et al., 2006) and if an auditee does not perceive high auditor competence the result would have suggested that the audit recommendations may not be readily adopted (Aikins, 2013, Knechel et al., 2012; Kilgore et al., 2014; Samelson et al., 2006). Consistently, the results of this study showed that the variables concerning auditor characteristics that are known to be associated with audit quality predicted auditee adoption of recommendations.

The most significant result of the study came from testing hypothesis four using multiple regression. Two of the variables, auditor quality control and auditor relationships with the client, contributed significantly to the prediction of managers' adoption of recommendations. An unexpected finding was that auditor diligence made no significant contribution to the prediction of auditee adoption of recommendation. Due diligence of auditors is known to predict auditee satisfaction and perceptions of quality for both private and public-sector auditing (Alzeban & Sawan, 2015; Behn et al., 1997; Carcello et al., 1992; Djati & Payamta, 2013; Modlin & Stewart, 2014; Samelson et al., 2006). Aikens (2012) found that internal auditors perceived that auditor due diligence significantly predicted auditee adoption of recommendations. The differences in the respondents in the study versus that of Aikens (2012) may account in part for the distinct outcome concerning due diligence. The residuals data for due diligence were neither normally

distributed nor homogenous in variance. The sample size should be sufficient to limit the influences of these deviations from multiple linear regression assumptions (Field, 2013); however, it is possible that the heteroscedasticity could contribute to the insignificance of the due diligence (Field, 2013).

### Summary

**A quantitative design meets the purpose of the study, and this allows me to collect data relevant to these participants that reflect their perspectives without revealing their identities. By analyzing these data with quantitative methods, my study was consistent and comparable to similar studies, and the results directly contribute to the purpose of this study and the identified gap in the literature (Aikins, 2012; Samelson et al., 2006). The purpose of this non-experimental, quantitative study was to determine whether the perceptions of local government managers' in Minnesota, concerning audit quality predicted their adoption of audit recommendations. There are available surveys that capture the data of interest and allow the conduct of a quantitative study (Aikins, 2012; Samelson et al., 2006).**

A regression model allowed tests whether the quality of interactions and relationships to auditors can predict auditee implementation of recommendations. The three simple linear regression models demonstrated that the predictor variables were significant in predicting auditee adoption of the recommendations. The multiple regression models similarly allowed rejection of the null hypothesis and showed that three variables of auditor behavioral characteristics significantly predicted auditor adoption of recommendations. The exception to expectations for results was that auditor due diligence was an insignificant predictor. The data met all assumptions for regression modeling.

Sampling participants across jurisdictions with consistent auditing procedures and requirements can reduce the influence of confounding variables (Cagle & Pridgen, 2014; Elder et al., 2015; Jakubowski et al., 2002). Of the few studies concerning the adoption of auditor recommendations, one studies auditor point of view (Aikins, 2012), another internal auditing (Alzeban & Sawan, 2015), and another in a regulatory environment dissimilar from most in the US (Djati & Payamta, 2013).



## Chapter 5: Implications, Recommendations, and Conclusions

The most important step to secure a successful audit may be the implementation of recommendation from an audit report. If auditor recommendations are not implemented, then the audit exercise is not useful regardless of the quality of the work (Aikins, 2012, 2013; Djati & Payamta, 2013). Relationships between audit quality and auditor characteristics have been well-researched but the relationships between adoption of recommendations and the factors related to auditee perceptions of audit quality and auditor characteristics are less well-understood for the local government public sector (Aikins, 2012; Alzeban & Gwilliam 2012; Alzeban & Sawan, 2013, 2015; Djati & Payamta, 2013; Kilgore et al., 2014; Modlin & Stewart, 2014; Warming & Jensen, 1998). The problem addressed in this study was that local government managers sometimes do not adopt and implement audit recommendations (Aikins, 2012; Alzeban & Swain, 2015). Thus, reducing the potential effectiveness of an audit (Aikins 2012; Djati & Payamta, 2013; Modlin & Stewart, 2014). Some researchers have suggested that lower auditees' perceptions of quality may lead to lower levels of implementation of recommendations (Aiken, 2012, 2013; Lenz & Hahn 2015; Knechel et al., 2012; Kilgore et al., 2014; Samelson et al., 2006).

Aikins (2012) and Modlin and Stewart (2014) found that auditee's views on adoption of audit recommendation adoption have not been addressed within the public sector. Auditors views on the auditee perceptions of auditors' characteristics are predictive of managers' tendency to adopt audit recommendations. These results from Aikins (2012) suggest that these auditee perceptions of auditor characteristics may also be predictive of auditee adoption of recommendations. The purpose of this non-experimental, quantitative study was to determine

whether the perceptions of local government managers' in Minnesota, concerning audit quality predict their adoption of audit recommendations.

An important delimitation was that the study was designed to capture the perceptions of local managers so that the context of their management decisions may have some consistency across locations within the region of Minnesota. This choice is supported by the notion that the perceptions of local managers concerning of audit quality depend on their specific context (Aikins, 2012; Alzeban, 2015; Alzeban & Sawan, 2015; Cagle & Pridgen, 2015; Carslaw et al., 2012; Djati & Payamta, 2013; Rich & Zhang, 2014; Samelson et al., 2006). Considerations for the delimiting the study included the potential for variation across states in audit practices (Carslaw et al., 2012; Khumawala et al., 2014; Samelson et al., 2006), local regulations, and types of audits to which a locality is subjected (Cagle & Pridgen, 2015; Carslaw et al., 2012; Rich & Zhang, 2014; Ruppel, 2016). For these reasons, the sample for this study was selected from one state, Minnesota, and for one type of audit, state mandated audits led by state audit teams. By making exclusionary choices, some contextual variables could be controlled. For example, Aikins (2012) included auditor independence and auditor professional status as independent variables that are associated with perceptions of audit quality. These could be excluded from the study because state-led audit teams have consistent credentials and standards for their auditors (Minnesota Office of the State Auditor, 2016).

The participants were provided confidentiality and anonymity by using an online survey. It could be assumed that these steps encouraged participants to respond honestly and openly. An assumption was that the audit procedures have not changed substantially over the last two years and that the audit team constituency is over that time. It could also be assumed that the survey

accurately reflected the variables due to the validity and reliability of the instrument (Aikins, 2012) and there is no reason to believe this is not the case.

The assumptions for regression modeling included a normally distributed dependent variable with little or no multicollinearity between variables, no autocorrelation, and homoscedasticity. The use of SigmaPlot allowed for testing these issues to make sure there are no violations (Field, 2013). Because the assumptions were met for the data and there was no need to use methods to compensate for violations of assumptions for multiple regression. The statistical significance of each of the coefficients for the predictor variables were tested with  $t$  tests as is prescribed by standard methods. The assumption for the use of  $t$  tests is that the data are approximately normally distributed (Field, 2013) and the assumption was met except for due diligence in hypothesis four.

There were several potential limitations to the study. The managers may not have been among those who had worked with state auditors within the past two years. There is no way to definitively ensure that some participants had more or less experience than some others working with state led auditing teams in past years; however, explicit selection of managers with similar auditing experience over the last three to five years limited this possibility. Based on state requirements for consistency of the auditing procedures (Aikins, 2012; Cagle & Pridgen, 2015; Carslaw et al., 2012; Rich & Zhang, 2014; Samelson et al., 2006), there was no reason to suspect that assumptions about the participants led to serious limitations for the study.

The impact of using differing standards for audits was lessened by examining only state-led audits across independent local municipalities. Several potential Confounding variables that have been shown to affect auditee perceptions of quality were controlled by making these choices to use state led audits and these include auditor independence, auditor professional status

(Aikins, 2012; Cagle & Pridgen, 2015; Rich & Zhang, 2014), and audit team size, cost, (Carslaw et al., 2012; López & Peters, 2010; Modlin, 2016; Samelson et al., 2006). Confounding variables were also limited by performing the study in one particular state (Aikins, 2012; Cagle & Pridgen, 2015; Carslaw et al., 2012; Rich & Zhang, 2014; Samelson et al., 2006). In a study that included multiple states, the generalizability of results was reduced due to differences in the state procedures and regulations (Carslaw et al., 2012). Minnesota was a good choice because the state has clear operating rules for state led auditing. The participants volunteered in response to an advertisement, and this also contributed to the generalizability of results. The generalizability of the study may be hampered by a single state as the frame of reference for participants; however, the results should not lose interpretability and generalizability due to conflicting and uncontrolled variables that are likely increased when data collected across states that have differences in procedures (Carslaw et al., 2012). The predictor variables for this study were chosen among those have been established as factors or dimensions of perceived audit quality the private sector (Defond & Zhang, 2014; López & Peters, 2010; Malik, 2014) but far less so in the local public sectors (Aikins, 2012; Alzeban & Gwilliam 2012; Alzeban & Sawan, 2013, 2015; Carslaw et al., 2012; Djati & Payamta, 2013; Modlin & Stewart, 2014). Thus, there is some potential for results to generalize to the public and private sectors.

### **Implications**

Only two studies were found that explicitly addressed audit report adoption in local government (Aikins, 2012; Alzeban & Sawan, 2015). The aim of Alzeban and Sawan's (2015) study was to understand the characteristics of audit committees that predict audit acceptance and the results do not extrapolate well to the study. The results may not have been comparable to Aiken's (2012) for several reasons. Aikins (2012) found that *auditors' perceptions* of an

auditee's adoption of recommendations were predicted by the auditor's perception of their due diligence, auditor quality control, and auditor client relations. Thus, Aikins took the auditor's viewpoint in the study. The closer relationship between onsite auditors who work with or for the auditees could influence the results given that auditor independence is known to affect a host of variables related to audit quality perceptions (Alzeban & Sawan, 2015).

Results from several seminal studies indicated that stakeholders with different roles in the audit process might have distinctly different perceptions of an audit's quality and auditor characteristics (Kilgore et al., 2014; Knechel et al., 2012; Schroeder et al., 1986). However, other results showed that auditors and auditees might have similar perspectives on the factors influencing audit quality at the behavioral level (Behn et al., 1997; Carcello et al., 1992; Schroeder et al., 1986). Thus, as was done in the study, it was important to re-evaluate each of the variables under study in the context of auditee perceptions. Aikins (2012) also included additional auditor characteristics variables not used in the study, and the auditors were internal auditors as opposed to the 'external' state auditors in the study. The difference in the results of the study from those of Aikins (2012) suggests that managers views of audit quality may differ from that of auditors concerning auditor due diligence. Even with these differences in context, the study demonstrated some similar results to those of Aikins (2012).

Predictor variables included by Aikins (2012) and not included in the study were auditor independence and auditor professional status. These variables were excluded because Minnesota does not associate specific audit teams with local governments and the constituencies of these teams are consistent and predetermined by the State Auditors' Office (Minnesota Office of the State Auditor, 2016). The state deems these auditors as professionally competent, and they are similar in professional status regardless of the specific team involved in a local audit. State

mandated audits may have qualities of internal and external audits (Cagle & Pridgen, 2015; Modlin & Stewart, 2014; Rich & Zhang, 2014). By using audits conducted by the state, which have consistent standards as set by Minnesota's State Office of Auditing, variables are controlled which would be associated with differing standards for internal auditing across independent local municipalities; therefore, this variable of audit type need not be considered in this study. Using state-led audits may have controlled for several other variables, however, these are associated with perceptions of quality and satisfaction for external audits that are not state led such as external audit firm size, audit costs, and auditor professional status (Carslaw et al., 2012; Deis & Giroux, 1992; Modlin & Stewart, 2014; López & Peters, 2010; Samelson et al., 2006). Conceivably excluding variables such as auditor professional status and auditee risk assessments may have limited the results and decreased the generalizability of the results.

### **Recommendations for Practice**

The results of the study suggest several recommendations for practice. The relationship between auditors and auditees is paramount to quality audits. Auditor client relations was a significant predictor for manager adoption of recommendations. One recommendation is that the state may reach out to provide support to both auditors and auditees to facilitate the relations. For example, training for auditors in communication results effectively may enhance the confidence and comfort that local managers have with state auditors. Outreach programs to managers could also help the managers understand more about how the audit is to proceed. Presentations online could be offered that would "walk" the local financial officials through the process and help establish expectations for both parties. Local municipalities could participate in training concerning how to effectively respond to recommendations and how to cope with timelines for responses. Many states have no mandate for local audit committees. Mandates for

committees could support better relations because go-between communications are a chief function of audit committees.

Quality control was the other significant predictor in this study. The examples of fraud given in the literature review show the implications of the tragedy that can occur in those circumstances. Conceivably state auditors could project an image of “protectors” for local municipalities rather than one of policing internal controls and detecting fraud. Fraud prevention training for both sets of parties may help ease stress related to audits and provide a common ground for resolution.

### **Recommendations for Future Research**

One recommendation is for a national level quantitative study in which localities are chosen to match the potential variables that could be confounding. For example, there are states that may have similar standards and requirements could be matched from around the country to increase the generalizability of results and control for local environmental variables, such as local accounting requirement and reporting standards. Also, matching to the size of the local government may be useful as available resources may play a role in decision-making and capacity to respond to recommendations.

Qualitative interview studies could be of good use to better understand the decision-making that manager must do when attempting to meet recommendations in the government setting. The costs and complications of findings of audit exceptions could weigh more on smaller jurisdictions, and more insight into how these may impact local decision-making could be useful. Qualitative studies may also be useful for understanding whether local government manager may hold different perceptions of state auditor due diligence than they may for external CPA firm audits and internal audits. Because due diligence was an insignificant predictor of

recommendations adoption, it would be of interests to understand the potential differences in manager perceptions of different kinds of auditors and audits.

## **Conclusions**

The results demonstrated two auditor characteristics associated with perceptions of quality that are significantly predicted auditor acceptance and adoption of recommends from an audit. The key finding that due diligence does not contribute to the joint prediction of adoption of auditor recommendations supports that context surrounding the location of an audit may be important. The difference in outcome between this study and that of Aikins (2012) may be due to differences in contexts between the studies, including that auditor's perceptions were central as opposed to auditee perceptions for this study. It appears that incentives could be provided to managers to help form positive perceptions of auditors and facilitate adoption. The choice of how to exclude or include particular types of audits and auditors appear to be both a justifiable way to control for confounding variables or to hamper generalizability. Therefore, future studies could include ways to reduce these issues. The details of how some local variables may influence responsiveness to state auditor are not well known. These unaccounted-for variables such that translate across localities may increase national-level explanatory models if included in studies. Insights into local government managers' reticence to accept auditor recommendations may contribute to understanding public audit quality and effectiveness.



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## Appendices

### Appendix A: Permission to Recruit

**Request Permission for Access to email Listserv for Recruiting of Participants**  
Email to Minnesota Government Financial Officers Association

November 7, 2016

Julie Vogel,

President, Minnesota Govern Financial Officers Association

**Subject: A member of the organization conducting research.**

I am currently a member of your organization. I am a dissertation student who is currently preparing my dissertation proposal entitled “Client perceptions of auditor characteristics and auditor-related behaviors predict client acceptance of public sector audit recommendations”. As a condition for receiving approval to conduct research from my school, Northcentral University, I am seeking a preliminary permission from your organization to recruit auditors who qualify for my study through your website and member listserv. I can provide further information concerning the dissertation should you be interested in assisting me. This preliminary permission will allow me to go forward with my Internal Review Board application with the University so that I can be in compliance with federal regulations concerning research with human participants. After I gain official permission from my University, I will provide you with any additional information that may be needed.

Other than allowing me to “advertise” my study, there will be no effort on your organization’s part. Whether the call for participants be through email, a website post, or both, the notice will clearly state that all questions are to be directed to me or my dissertation advisor. Your organization will have no responsibilities in regard to receiving or forwarding information concerning volunteers’ responses. The volunteers will be provided a link to my online survey. I can clearly state in the notice that your organization *does not support, endorse, nor discourage* participation—in other words you will be neutral. Also, my study does not include evaluations of auditor performance, auditee performance, or measures of the quality of audit recommendations. Participant consent will be obtained and will be formal. The participant identities and responses to the survey will be kept confidential. The results will be published and available to the public after completion. As I say above, fuller details of this study can be provided to you after my full IRB application is approved by NCU. I will save you the effort of viewing these details in this preliminary permission letter, unless you would prefer additional information at this time.

Best regards,

Moses Nyangau

DBA candidate Northcentral University

M.Nyangau7401@email.ncu.edu

Dissertation Chair: Dr. Barry Spiker [bspiker@ncu.edu](mailto:bspiker@ncu.edu), 928.515.3383

@bloomingtonMN.gov

Madam President

Julie Vogel,

Good evening,

I am making a follow up on my request re-pasted here below. Please let me know if you have any questions.

I imagine how busy your schedule might be around this time with meeting going on. By the way, the presentations and lunch at today's meeting were excellent.

Your kind response to this request would be very helpful.

Thank you.

Moses Nyangau

Response from President, Minnesota Govern Financial Officers Association

Hi Moses,

I wish you would have introduced yourself to me on Wednesday. The executive board discussed your email on Wednesday. Since you are a member we have no issue with you sending a listserv to our associate members with your request. You do this thru the MNGFOA website.

Let me know if you need assistance with sending the listserv. I will be out of the office most of the day

## Appendix B: Announcement of the Study

### Call for Research Volunteers

Hello Local Minnesota Financial Managers,

I am a doctoral student seeking volunteers for my research to complete my dissertation. The study concerns your perceptions of State audits and your experiences with auditors. My goal is to explore how these experiences may relate to the use of auditor recommendations. Your participation is valuable. These issues have been studied very little for the local public sector. Researchers, financial managers, and auditors may benefit from the results.

You are eligible if you are a financial manager of a municipality, county or district in the state of Minnesota. You are eligible if you have worked in your current capacity for at least 3 years, and if you have participated in one state-led audit but no more than three. You should have at least five years of work experience with government management and finance. You should be in a role to affect adoption of audit recommendations. You will not be asked to evaluate the auditors' effectiveness. You will not be asked to evaluate audit reports. You will not be asked to reveal proprietary information. Your participation is confidential.

If you choose to participate, please click the link: [XXXX.com](http://XXXX.com). The survey contains 27 questions and can be completed in about 20 minutes. Please contact me if you have questions.

Moses Makori Nyangau, DBA. Candidate  
[M.Nyangau7401@email.ncu.edu](mailto:M.Nyangau7401@email.ncu.edu)

Dr. Barry Spiker, Dissertation Chair  
Northcentral University  
Prescott Valley, AZ  
Phone: 928.515.3383

## Appendix C: Online Survey

### Online Survey

Pre-survey questions:

- 1) How many years have you been in your current management position? If less than 3 then you are not eligible for this study.

3 -	4 - 6	6 - 10	10+
4years	years	years,	years
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 2) Have you participated in a at least one but no more than three state led audits for your county or municipality?

Yes \_\_\_\_\_ No \_\_\_\_\_

- 3) Number of employees who have contact with the auditors. \_\_\_\_\_

- 4) In any capacity in which you have work, what are the number of times you have participated in auditing by the Office of the State Auditor.

- 5) Do you have at least five years of experience at any job level for local or state financial and/or accounting responsibilities? If no, then you are not eligible for the study.

Yes\_\_\_\_\_ No\_\_\_\_\_

- 6) Do you have any responsibilities and input into decisions regarding implementation of auditor recommendations? If not, then you are not eligible for this study.

Yes\_\_\_\_\_ No\_\_\_\_\_

Please respond to these questions according to your perceptions from your most recent state audit experience.

Please answer only if you and/or your employees were directly involved with the auditors or any stage of the audit process.

- 1) My auditors learned of my department's internal operations and management risk perspective before auditing began.

Strongly	Slightly	Slightly	Neutral	Slightly	Moderately	Strongly
Disagree	Disagree	Disagree		Agree	Agree	Agree
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 2) The auditors exercised adequate due professional care throughout the audit process.

Strongly	Slightly	Slightly	Neutral	Slightly	Moderately	Strongly
Disagree	Disagree	Disagree		Agree	Agree	Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) The auditors demonstrated that they identified, analyzed and evaluated risks, and related controls for each area audited.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4) The auditors demonstrated adequate knowledge of our internal auditing identification and evaluated risks, and related controls for each area audited.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5) The auditors demonstrated an adequate understanding of our local accounting system.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6) The administrators within the State Auditor's office were in agreement with the State auditors' findings.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7) The auditors followed-up with my department after the audit.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8) The auditors adequately communicated their understanding of my localities risks and related controls during the auditing process and before the audit report was finalized.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9) The auditors adequately communicated their understanding of my departments accounting systems before the final report.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10) The auditors adequately communicated their understanding of my departments' accounting systems before the final report.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If your department has a local audit committee, please answer the following:

11) The local audit committee audit committee stated agreement with the State auditors on findings.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12) The auditors' recommendations adequately reflected an understanding of my department's procedures and practices.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13) The auditors communicated their findings to our department prior to final decision in a timely way prior to the final report.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14) The auditors demonstrated flexibility in scheduling meetings, and communicating their procedures to my department.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15) The auditors discussed the audit report draft with our department before the final decisions.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you have an audit committee, please answer question 17, otherwise omit only this question and proceed to answer other questions:

16) The auditors were willing to meet with the audit committee to discuss issues and answer questions.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17) My department developed documented action plans for audit findings and weaknesses before the final report.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18) After the final report, my department provided the auditor with documented action plans to implement findings.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19) My department maintained a post-audit 'issue tracker' for follow-up within my department.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20) My department implemented all documented action plans within agreed-upon deadlines.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

22) My department performed internal follow up audits in areas where control weaknesses were detected by state auditors.

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23) We scheduled required follow up audits and reports to be performed along required timelines after the initial audits were performed

Strongly Disagree	Slightly Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



## **Appendix D: Informed Consent**

### **Introduction:**

Thank you for your interest in this study. My name is Moses Nyangau and I am a graduate student at Northcentral University. I am conducting a study on adoption of state auditor recommendations. You will be asked your perceptions of audit process, control, and communications. This study is part of my doctoral degree.

Please note that your responses will be confidential and the data will be reported in aggregate. Your responses will not be identifiable. You will have access to the final results of the study.

### **Activities:**

You will be asked to do the following: Answer a survey containing 23 multiple choice questions. The expected time to complete the online survey is 20 minutes.

### **Eligibility:**

You are eligible to participate if you have worked in your current job for at least 3 years, and if you have participated in one state-led audit but no more than three. You should have five years or more of experience with government management and finance. You should be in a role to review audit recommendations.

### **Risks:**

There are minimal or no risks in this study. Some participants may incorrectly believe that they were asked to reveal confidential information. Some may mistakenly believe that their responses can be identified. You can stop or choose not to participate at any time.

### **Benefits:**

There is potential benefit for local managers and auditors. The study will be published and publicly available. You may learn about the auditing process on use of audit recommendations.

### **Confidentiality:**

The information you provide is confidential. Only I will collect the data from the survey service. I will remove the identities of participants.

The IP addresses from online respondents will not be collected or kept with the data.

You will be asked for your name when you enter the survey website. Your name ensures that each participant survey is returned once, and that you are a member of the GFOA. Your name will not be associated with your answers. I remove your name from the data on your completed survey, and I will assign a numerical code to each completed survey. Only my dissertation chair, faculty committee members, the NCU Institutional Review Board, and I will have access to your information.

All data will be downloaded from the survey website directly onto my computer which is secured with a password. Only I have access to the computer. I will keep the de-identified data for 7 years, after which, I will then delete electronic data and destroy any copies.

### **Contact Information:**

If you have questions, you can contact me at (952) 927-923-9527

You may also contact my dissertation supervisor: Dr. Barry Spiker. You may contact him at [bspiker@ncu.edu](mailto:bspiker@ncu.edu). You may also call him at 928.515.3383.

Please contact the NCU Institutional Review Board if you have questions about your rights in the research. Their email address is [irb@ncu.edu](mailto:irb@ncu.edu). You may also call 928.515.3383

**Voluntary Participation:**

Your participation is voluntary. You may end your participation at any time.