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The Association Between Local Government Organization Structure and Internal Controls: The Case of North Carolina Counties

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Abstract

Government staff are charged with the simultaneous responsibility of budget execution while adhering to generally accepted accounting principles. Precipitating factors encompassing this process can provide issues related to sustaining proper internal controls within the organization. This study examines the underlying factors contributing to internal control problems among county governments in North Carolina. A multivariate analysis provides an overall measurement of total number of material weaknesses and significant deficiencies based on audit information for fiscal year 2018-2019. The empirical analysis suggests that organizational factors have an impact on the number of material weakness findings while auditor specialization, higher audit fees, a higher number of accounts payable personnel, and additional government employees lead to an increase in significant deficiency findings. Findings also suggest any questionable cost finding can lead to any type of internal control problem. Overall, the findings suggest the enormous pressure on finance staff due to the demands of stakeholders becomes the synergist for weaknesses and deficiencies in internal controls.

Keywords: Internal controls, government accounting, government audits

I. Introduction

Efforts to improve transparency among financial transactions at all levels of government continues to evolve with each step of the budget implementation process. Increased levels of transparency have been found to be the basis for public sector accountability (Fox 2007; Greiling and Spraul

2010). Additional benefits include evidence of sound management practices and a reduction in unlawful practices (Cucciniello, Porumbescu, and Grimmelikhuijsen 2017). The continued development within the audit process promotes accountability and ensures service provision is predicated on the overall mission of the unit and thus public intent. The inclusion of compliance sections in conjunction with comprehensive annual financial reports (CAFR) provides an analysis of procedural substantiation that accompanies the numerous service transactions that take place during the fiscal year. Audits of compliance are conducted in accordance with generally accepted auditing standards in the United States. Further standardized requirements, cost principles, and administrative requirements for intergovernmental awards can also be mandated under state law and policy guidelines. Audit information illuminates any deficiencies over internal controls or even material weaknesses over internal controls. The results can range from a lack of service provision for a qualified applicant to statement inaccuracy. To this point, omissions in the literature exist providing a link between organizational characteristics and compliance findings. Frequent problems with internal controls continue to plague governments at all levels (GAO 2007). The goal of this exploratory study is to examine the relationship between organizational factors and internal control occurrences among county governments.

Motivation for the study is associated with the ongoing efforts at higher levels of disclosure among state and local governments (GASB 2019; GASB 2021). Qualitative disclosure of compliance information as an addendum to financial audits provides additional clarity to routine organizational performance. The analysis deciphers compliance reports and determines the existence of links between county pesonnel, auditor charactertistics and organizational factors and significant deficiency and material weakness findings. This study provides further insight into the personnel ramifications of daily procedural activities. The literature is absent of studies which examine contributing factors that lead to elevated levels of problems associated with internal control among local governments. Stakeholders in this case consist of internal management and compliance findings determine areas in need of additional personnel action endeavors.

Literature contributions are numerous regarding the findings of this research. First, the findings demonstrate the financial impact of significant deficiencies and material weaknesses on various services. Second, the study reiterates the role of staff in daily operations as well as the impact of various departments on service provision (Modlin 2018). Third, the study provides a comparative analysis of material weakness and significant deficiency findings among auditors within a state. Fourth, this study focuses on the results of audited local governments which does not encompass extensive coverage in the literature (Sacco and Bushee´ 2013; Guo, fink, and Frank 2009; Marsh,

Montondon, and Kemp 2005). Finally, the study attempts to examine the connection between both personnel and servive characteristics to material weakness and significant deficiency findings. The study also provides some insight into potential problems within organizational structures inclusive of accounting endeavors that can easily be a catalyst for internal control problems. For smaller governments, this can easily be a lack of personnel and in some cases, qualified personnel while for the larger governments, issue origins can stem from a lack of supervision.

The article proceeds in the following manner. The next section consists of internal control reporting among government entities followed by a literature review and the development of the hypotheses. The research design and models that contribute to significant findings related to significant deficiencies and material weaknesses will then be introduced. Additional models include a more comprehensive examination of local government environmental factors, and finally a collaborative overview of the models and overall impact of the study.

II. Internal Control Reporting in The Public Sector

Proper implementation of generally accepted accounting principles enables governments to accurately substantiate the true financial position of the unit. However, the elevated number of transactions associated with service provision and proper personnel support can lead to various alternatives of law application, regulatory compliance, and adherence to specific requirements. Noncompliance can often be the result of internal control issues. Among governments, there are generally two types of internal controls that affect financial statements: significant deficiencies and material weaknesses. A traditional deficiency does not allow employees or management, under normal daily operations, to prevent, correct, or detect noncompliance with an intergovernmental program in a timely manner and is required to be addressed by those in positions of responsibility (AICPA 2007; PCAOB 2020). Examples within government settings could be infrequent observation of departmental apportionments leading to intermittent overspending on a quarterly basis along with unauthorized reconciliation with banking transactions. Material weaknesses in internal control over compliance can be one or more deficiencies in internal control over compliance that suggests that a reasonable possibility exists that material noncompliance with a state program can occur and will not be detected, prevented, or corrected on a timely basis. The material weakness is more severe than the significant deficiency and also requires the attention of those in management positions (AICPA 2007). One of the more common internal control problems experienced within organizations is the absence of proper segregation of duties among finance personnel. Material weakness identification can be a predetermining factor for

financial issues related to fraudulent activity, excessive waste, inefficiency, and statement inaccuracy (GAO 2011).

State and local governments as well as Native American tribal governments that receive federal assistance up to a specific threshold are required to satisfy government-wide audit requirements under the Single Audit Act of 1984 (Public Law 98-502). The awards distributed are generally appropriations, but can include contracts, property, loans, insurance, cooperative agreements, and interest subsidies. The primary goal of the Single Audit Act (SAA) to have one audit, under a uniform set of guidelines, determine that resources received by lower levels of government are implemented and managed properly with the proper controls in accordance with statutory requirements and contractual obligations. Under the initial legislation, the audit threshold was $100,000 expended and has gradually increased to $750,000 beginning in December 2014 (OMB Circular A-133, 2 CFR Part 200, Appendix XI 2016). Among the many disclosure requirements, the auditor's summary report is required to consists of (1) a specific type of report issued on the financial statements of the auditee; (2) a statement that significant deficiencies in internal control were disclosed by the audit of the financial statements and whether any such conditions were material weaknesses; (3) a statement as to whether the audit disclosed any noncompliance which is material to the financial statements of the auditee; (4) a statement that significant deficiencies in internal control over major programs were disclosed by the audit and whether any such conditions were material weaknesses; (5) a specific report on compliance for major programs; (6) a statement as to whether the audit disclosed any audit findings which the auditor is required to report under additional legislation; (7) the dollar threshold used to distinguish between Type A and Type B programs; (8) a statement as to whether the auditee qualified as a low-risk auditee; and (9) findings and questioned costs for Federal awards (OMB Circular A-133 2007). The audit is designed to ensure that the funded service was implemented and executed in accordance with the accompanying legislation and any additional requirements, conditions, or regulations.

III. Literature Review and Hypotheses Measurement

The extant literature thus far has been very limited on the underlying causes of internal control deficiencies among governments. The importance of proper internal controls and the implementation of internal control standards has been substantiated for some time (Kinney, Maher, and Wright 1990; Hermanson 2000; Kinney 2001). Significant research to this point has focused on the impact of adverse internal control findings on debt service issuance (Edmonds, Leece, Vermeer and Vermeer 2023; Park, Matkin, and Marlowe 2017; Gore, Henderson, and Ji 2016). This is consistent with private sector

studies that suggest ongoing material weakness findings lead to increased equity cost (Gordon and Wilford 2012). Cuny, Kim, and Mehta (2020) took a more reconciliatory approach by examining the relationship between elected officials at multiple government levels and government stewardship. Findings indicated that there was less accountability with public resources when the district of an influential member of congress included the local government unit. Specific to county governments, this finding is consistent with previous research that suggest that local government officials consider themselves very involved in the entire budget process which includes the acquisition of funding from multiple levels of government (Modlin 2008).

The type and quality of audits has been the focus of numerous studies. While the majority of studies have focused on the private sector, Lopez and Peters (2010) performed a comparative analysis between government and private sector audits that performed Circular A-133 audits and found that private sector audits were more likely to include internal control concerns. Findings also suggested larger CPA firms were more likely to disclose internal control findings. Conversely, Jakubowski (1995) found that county government auditors reported higher levels of internal control weaknesses compared to traditional CPA firms, no matter the size. Firms utilized by local governments can range from firms that specialize in local government audits to more localized practical CPA firms (Modlin 2024A).

The structure and organizational composition of the unit can also have an impact on internal control incidence. Characteristics such as significant changes, complexity, rates of growth, higher turnover and less stability all contribute to higher incidents of internal control concerns (Ge and McVay 2005; Doyle, Ge and McVay 2007; Ashbaugh-Skaife, Collins and Kinney 2007). From a more internal standpoint, the independence and financial expertise of those performing the audit are less likely to be associated with elevated incidences as well (Krishman, 2005; Zhang, Zhou, and Zhou 2007). Less commitment by management related to staffing related to accounting expertise has also been found to contribute to internal control issues (Doyle, Ge, and McVay, 2007; Modlin and Stewart 2014A). Contributing factors include lack of training, deficiencies in the period-end reporting process and accounting policies, deficient revenue-recognition policies, lack of segregation of duties, and inappropriate account reconciliation (Ge and McVay, 2005). Based on the literature associated with internal control findings and factors associated with the underlying contributors, the hypotheses developed are designed to capture the many elements that have some type of contribution to transactions related to the fulfillment of service provision. All hypotheses are non-directional due to the exploratory nature of the study with the baseline dependent variables all related to internal control concerns.

HYPOTHESIS 1: Significant deficiencies and material weaknesses in internal controls are associated with type and experience of key personnel.

Previous findings suggest finance officers with more experience (FINEXP) provide increased efficiency within the audit process (Modlin 2024A) and have fewer reporting inconsistencies within audits (Modlin 2012; Modlin 2017; Rich and Zhang 2016). Among other staff, positive relationships have been found with increased levels of staff accountants (ACCT) and internal control problems (Modlin 2017). In this study, there will be a focus on North Carolina county governments that are subject to a heavy state oversight process inclusive of the appointment and responsibilities of a finance officer (N.C.G.S. 159-24 2019; N.C.G.S. 159-25 2021) along with specific legislation regarding budgetary accounting for operations (N.C.G.S. 159-28 2021). Within the finance office, the accounts payable position (APTECH) is critical in maintaining compliance protocol by sustaining an elevated level of internal control, especially if there is an accompanying receivables position. These positions are even more critical with higher full-time equivalencies (FTE) (TOTEMP) that are subject to numerous organizational changes such as frequent salary classification studies, claims associated with retirement and hospitalization, and changes with insurance coverages. These processes become even more complicated when staff expectations during the budget process are inconsistent with commissioner (COMM) requests (Modlin 2019).

Several counties within the study have the business officer position (BUSINESS). This position acts as a liaison between the designated department and the finance department, human resources department, or both due to many possible intergovernmental transactions including personnel action changes, intragovernmental funding, procurement issues etc. County government departments that have this position usually include Social Services, Public Health, and the Sheriff's Office among others. Counties have the choice whether to budget for this position or delegate the responsibilities among positions. Significant deficiency can be minimized with the inclusion of this position.

HYPOTHESIS 2: Significant deficiencies and material weaknesses in internal controls are associated with auditor selection and audit fees.

The second hypothesis is developed based on the government auditor findings of Jakubowski (1995). Auditor specialization (AUDITOR) has been found to be the basis for a perceived higher quality audit versus higher costs (Lowensohn, Elder, and Davies 2007; Modlin 2024A). Further evidence has supported these findings as local governments choose auditors that are perceived specialists and have a substantial share of the local government audit

market within a state (Modlin 2012). However, there have been findings that suggest auditor quality is related more to audit fees (AUDITFEE) rather than firms with prominence (Copley 1991). More common findings demonstrate a correlation between government audit costs and unit size (Baber, Brooks, and Ricks 1987; Rubin 1988; Copley 1989).

HYPOTHESIS 3: Significant deficiencies and material weaknesses in internal controls are related to government internal organization characteristics.

The third hypothesis investigates organizational factors that could have an impact on internal control. Larger units normally have significantly more intergovernmental activities (IG) that fall under the SAA as well as higher potential for increased internal control problems (Jakubowski, Jakubowski, and Huh 2002). In conjunction with Baber, Brooks, and Ricks (1987), Rubin (1988), and Copley (1989), organization size is expected to have some relationship with internal control findings (BUDGET) as well as service area (AREA) of the unit.

Previous research examined the internal control foundations associated with private sector organizational structures, changes, and personnel turnover (Ge and McVay 2005; Doyle, Ge and McVay 2007; Ashbaugh-Skaife, Collins and Kinney 2007). In this case, stability will also be examined through government net position (NETPOS). Units with positive net positions usually provide more disclosure in the Management Discussion & Analysis compared to those with less substantial positions (Modlin 2024A). The use of the internal service fund (ISF) has also been found to be a measure of accounting sophistication and more pronounced among larger and more complex government units (Modlin 2023). Costs are more isolated with internal service fund use, but there are an increased number of transactions and requires a more sophisticated accounting background for dissemination.

The accompanying compliance report of federal and state awards also includes any questioned costs that lack verification or adequate documentation and that may not be reimbursable. Larger governments have been found to have more questioned costs compared to smaller governments (Edmonds, Leece, Vermeer, and Vermeer 2023). Therefore, it can be concluded that a finding of questioned costs (QC) should provide some link to a significant deficiency or material weakness. Circular A-133 also requires the auditee to be designated as ‘low’ or ‘high’ risk (RISK) based on criteria set forth in 2 CFR 200.520. Briefly stated, the auditee had to basically have a clean audit for the previous two audit cycles with no going concerns. Keating, Fischer, Gordon, and Greenlee (2005) found that larger CPA firms were more likely to have clients designated as ‘low’ risk which was consistent with Lopez and Peters (2010) who also found a negative relationship between government size

and a 'low' risk designation suggesting that larger governments had the capacity to mitigate internal control issues through proper staffing. The GFOA Certificate of Achievement for Excellence in Financial Reporting represents an important indicator of financial reporting quality and this increased level of disclosure is usually associated with favorable investment practices (Baber and Gore 2008). Conversely, one study found that award non-recipients had higher levels of dissatisfaction with auditor governmental accounting expertise (Modlin and Stewart 2014B).

IV. Research Design

Information retrieved concerning significant deficiencies and material weaknesses within internal controls was acquired from county CAFRs. The overwhelming majority of county CAFRS had a supplemental compliance section at the end of the document. In just a few cases, compliance sections were separate documents. The units of analysis are county governments within North Carolina. All 100 counties operate under the commission-manager form of government and operate under heavy state oversight (Coe 2007; Modlin 2010). Utilizing information from a single state provides an opportunity to examine problems associated with internal controls in a uniform manner. In North Carolina, specific service departments such as Social Services and Public Health are administered at the local level; therefore, there are significantly more pass-through expenditures that meet SAA guidelines. The predictors in the study also provide an opportunity to examine specific service provision procedures predicated on specific organizational factors that make each county unique. For this study, audits with a fiscal year (FY) conclusion of 2019 were used to obtain most of the predictors (See Appendix). The purpose of the year was to avoid the implications of the pandemic and the numerous intergovernmental funding streams that lacked fiscal accountability.

Alternate sources were also used to obtain information for other predictors. Most of the data for finance officer experience (FINEXP), the number of accountants employed (ACCT), accounts payable technicians (APTECH), and business officer positions (BUSINESS) were retrieved from salary studies conducted annually by the UNC School of Government. Audit fee (AUDITFEE) information was obtained from the North Carolina Department of State Treasurer while county area in square miles (AREA) came from the U.S. Census Bureau Geography Division. The Government Finance Officers Association (GFOA) provided information for county recipients that received the GFOA's Certificate of Excellence in Financial Reporting for the previous fiscal year. All other variable information was available contained within audits.

Previous research that examined the underlying presumptions associated with internal control findings coupled with personnel and

organizational characteristics that have an impact on financial outcomes were a catalyst for the development of an all-inclusive primary model that provides some explanation into the probabilities of a significant deficiency or a material weakness. In the following model, *Internal Control* can be used as a proxy for any of the more specified dependent variables.

$$INTERNAL\ CONTROL = \beta_0 + \beta_1 FINEXP + \beta_2 ACCT + \beta_3 APTECH + \beta_4 BUSINESS + \beta_5 TOTEMP + \beta_6 AUDITOR + \beta_7 AUDITFEE + \beta_8 ISF + \beta_9 NETPOS + \beta_{10} IG + \beta_{11} BUDGET + \beta_{12} QC + \beta_{13} RISK + \beta_{14} GFOA + \beta_{15} COMM + \beta_{16} AREA$$

The appendix provides measurements for all variables associated with the study. The dependent variables consist of varying levels of significant deficiency and material weakness based on the finding as related to the type of governmental transaction; however, the type and amounts of predictors that have a related probability of leading to an internal control finding provide the basis for the research question. Following an evaluation of hypotheses performance based on the pairwise correlations, there will be a bivariate analysis of each type of internal control finding broken down by both material weakness (MW) and significant deficiency (SD) as well as the type of governmental funding. Ordered multivariate models will follow with dependent variables that consolidate all material weaknesses (TMW) and significant deficiencies (TSD) that are tested against the predictors. Measurements were scaled based on a finding for each category of compliance. For instance, if a county had a significant deficiency finding among financial statements, federal awards, and state awards, it was coded at the highest level which was three. This type of measurement is consistent in the absence of a more standardized benchmark (Vermeer and Styles 2019). There are no preconceived expectations concerning direction with any of the predictors.

Personnel who have a high likelihood of having an impact on internal controls is a primary area of research within the study. The experience of the finance officer (FINEXP), who has the most oversight responsibility over the unit's finances and whose position is designated by state legislation (N.C.G.S. 159-24), is expected to have an impact on the internal control findings. The most likely outcome is that the governments of more experienced finance officers would be less likely to have problems with internal controls; however, the delegation of implementation activities, especially as they relate to specific fund issues, can lead to procedural irregularities (Modlin 2024B). The remaining personnel variables are exploratory with no previous research linking them to internal control problems. The addition of an increased number of staff accountants (ACCT), accounts payable personnel (APTECH), as well

as a defined business officer (BO) for departments with business-type activities are usually associated with increased performance in financial management. For instance, it is important for the business officer in Social Services to coordinate with an accounts payable position in the finance department to ensure timely removable of payables with the Low Income Energy Assistance Program (LIEAP). Internal controls are reduced as a result of proper qualification of individuals for the service, coordination with the finance for payment to the energy vendor, and proper entry recording and charging to account codes.

Two variables associated with auditor characteristics will be examined to determine if there is a relationship with differing levels of internal control deficiencies. The first is the actual contracted auditor. One of the employed variables was the most frequently utilized auditor for FY ending 2019. In this case, the audit firm was Thompson, Price, Scott, and Adams (TPSA) who advertise as a more generalized accounting firm, but have received numerous contracts to perform county government audits for many years (Modlin 2012). TPSA was the auditor for approximately 23 of 100 counties for FY 2019. As with previous studies (Copley 1991; Lowensohn, Elder, and Davies 2007), this study will also focus on some aspect of cost (AUDITFEE), except that there will an attempt to determine if there is a link between cost and internal control findings as they relate to significant deficiencies and material weaknesses.

Several organization factors will be introduced to assess for additional relationships. From a general standpoint, organization factors have been found to have enough of an impact on a unit that the yearly changes have notable reference in the Management Discussion & Analysis (MDA) among county governments (Modlin 2024A). Another exploratory variable that will be examined will be how net position (NETPOS) changed from the previous year. One of the primary reasons for a substantial increase or decline in net position would consist of capital project endeavors with debt service issuance or payoff. In some cases, an increase in intergovernmental funding (IG) as a percent of general fund revenue can lead to an increase probability in internal control weaknesses (Rich, Roberts, and Zhang 2018). Testing for size and complexity of the organization can be done through the use of internal service funds (ISF), budget size (BUDGET), the total number of employees as a percent of county population, and to a degree, service area (AREA). Although previous research did not suggest a relationship between the GFOA award and disclosure (Rich, Roberts, Wall, and Zhang 2021), it will now be tested against the dependent variables associated with significant deficiencies and internal controls.

The designation of the auditee as high or low risk (RISK) and any questioned costs (QC) will be tested as well. Previous clean audits with limited compliance issues cannot allow for the same presumptions leading into a

future year, especially in cases where the elected body (COMM) suggests budget changes that can propel alternate personnel moves and create additional accounting problems. No matter the time of year, there are continual pressures resulting from bureaucratic staff (Downs 1967; Niskanen 1971; Wildavsky 1989). No conclusive predetermined expectations are associated with the study, but any questioned costs are expected to be substantiated with internal control irregularities.

V. Summary Statistics and Preliminary Results

Table 1 provides descriptive statistics for the entire sample. In the initial panel, the mean, median, standard deviation, and quarterly values provide some initial information concerning the variables. For most of the variables, the values are highest in the third quartile, especially with the number of accountants which has a value of four suggesting that the number of accountants within a unit can vary despite composition. It would also not be uncommon for the finance officer to assume these responsibilities within smaller governments explaining the lower quartile finding. For TOTALMW and TOTALSD, it can be suggested based on the mean values that the probability of any type of specific finding will be relatively low; however, most counties did have at least one finding. Most counties also had an increase in net position compared to 2018. Finance officer experience was a little more than ten years for the sample with an average of one accountant and approximately two accounts payable personnel per unit. There were accounts payable technicians represented in each quartile suggesting efforts to segregate duties. In North Carolina, county governments in smaller counties are usually one of the primary employers.

Table 1: Descriptive Statistics
Panel A: Full Sample (N = 100)

Variable	**Mean**	**Median**	**Standard Deviation**	**Q1**	**Q3**
TotalMW (Ordered)	0.68	0	0.94	0	3
TotalSD (Ordered)	0.73	0	0.91	0	3
FMW (DV)	0.29	0	0.45	0	1
FND (DV)	0.20	0	0.40	0	1
FEDMW (DV)	0.25	0	0.44	0	1
FEDSD (DV)	0.31	0	0.47	0	1
STATEMW (DV)	0.17	0	0.38	0	1
STATESD (DV)	0.21	0	0.41	0	1
FINEXP	2.45	2	1.61	1	5
ACCT	1.07	1	1.10	0	4
APTECH	1.78	1	1.63	1	5
BUSINESS	0.44	0	0.66	0	2
TOTEMP	1.46	1	0.54	1	2
AUDITOR	0.23	0	0.42	0	1

AUDITFEE	1.78	2	0.56	1	3
ISF	0.32	0	0.46	0	1
NETPOS	1.85	2	1.11	1	3
IG	1.77	2	0.57	1	3
BUDGET	2.53	2	1.45	1	5
QC	0.21	0	0.40	0	1
RISK	0.57	1	0.50	0	1
GFOA	0.52	1	0.51	0	1
COMM	2.35	2	0.52	2	3
AREA	0.41	0	0.49	0	1

Panel B: Material Weakness Distribution

		MW = 1 (N = 40)			MW = 0 (N = 60)		
Variable	**Mean**	**Median**	**Std. Dev.**	**Mean**	**Median**	**Std. Dev.**	**Significance**
FINEXP	2.38	2	1.51	2.50	2	1.68	
ACCT	0.75	1	0.74	1.28	1	1.25	**
APTECH	1.60	1	1.65	1.90	1	1.62	
BUSINESS	0.40	1	0.59	0.47	0	0.70	
TOTEMP	1.52	1	0.55	1.42	1	0.53	
AUDITOR	0.28	0	0.45	0.20	0	0.40	
AUDITFEE	1.65	2	0.53	1.87	2	0.57	**
ISF	0.46	0	0.51	0.35	0	0.48	
NETPOS	1.98	3	1.21	1.77	2	1.05	
IG	1.90	2	0.59	1.69	2	0.54	*
BUDGET	2.23	2	1.25	2.73	2	1.55	**
QC	0.32	0	0.47	0.13	0	0.34	**
RISK	0.78	1	0.42	0.43	0	0.50	**
GFOA	0.55	1	0.50	0.50	0	0.50	
COMM	2.42	2	0.50	2.30	2	0.53	
AREA	0.50	0	0.51	0.35	0	0.48	

** represents significance at the .05 level; *at the .10 level.

Panel C: Significant Deficiency Distribution

		SD = 1 (N = 46)			SD = 0 (N = 54)		
Variable	**Mean**	**Median**	**Std. Dev.**	**Mean**	**Median**	**Std. Dev.**	**Significance**
FINEXP	2.17	2	1.52	2.69	2	1.66	
ACCT	1.15	1	1.15	1.00	1	1.06	
APTECH	2.09	1	1.90	1.52	1	1.37	*
BUSINESS	0.37	1	.61	0.50	1	0.69	
TOTEMP	1.46	1	.54	1.46	1	0.54	
AUDITOR	0.35	0	.48	0.13	0	0.34	**
AUDITFEE	1.87	2	.54	1.70	2	0.57	
ISF	0.42	0	.50	0.37	0	0.49	
NETPOS	1.70	2	1.19	1.98	2	1.04	
IG	1.89	2	.57	1.67	2	0.55	**
BUDGET	2.63	2	.22	2.44	2	0.19	
QC	0.37	0	.49	0.07	0	0.26	**
RISK	0.63	1	.49	0.52	1	0.50	
GFOA	0.52	1	.51	0.52	1	0.50	
COMM	2.39	2	.54	2.31	2	0.51	
AREA	0.43	0	.50	0.39	0	0.49	

** represents significance at the .05 level; *at the .10 level.

Panel B and Panel C provide and breakdown of statistics based on the presence of a material weakness or significant deficiency in addition to testing for significance within variable variances. The univariate analysis demonstrates the importance of personnel with significant differences between staff accountants and their counterparts in terms of whether there were material weakness findings. It appears that the addition of an extra accounting position (1.28) can reduce the chances of a material weakness finding. The same results apply with additional accounts payable personnel, but the significance level was not as profound (difference in *APTECH* for significant deficiencies at $p < .10$). Although no significant relationship was found with the *FINEXP* variable, it can be determined that the finance officer experience still has importance in maintaining quality within accounting transactions. Significant differences were also found within audit costs of counties with a material weakness compared to those without a material weakness, but most notably, the finding associated with *RISK* proved to be more noteworthy. Based on the mean values, counties most likely to be designated as high risk had a mean value (0.78) which was nearly twice that of those without a material weakness (0.43).

The univariate analysis had additional significant findings within each model. First, it can be concluded that an increased level of intergovernmental revenue as a percentage of total revenues can lead to slightly higher level of

internal control problems compared to counties that receive less revenue from higher government levels. Previous research emphasizes less reliance of intergovernmental funding for sustained services in order to reduce extensive external audits, avoid indirect costs, and be able to withstand substantial political turnover (Modlin 2010). Second, a questionable cost finding was also significant among both panels and at a reasonable level (difference in QC at $p < .05$). The differences were much higher for governments that had a significant deficiency finding with a (0.07) value for those without a significant deficiency finding compared to (0.37) with those that had a finding. In one of the more notable cases, one file had an error in determining real property ownership and determination if it is considered a countable resource. The amount of aid received by the applicant totaled in excess of $14K in questioned costs. This was one applicant file of 60 out of 3,424 that was examined. Fortunately, only approximately 20% of the counties have a questioned cost as demonstrated by the low mean values for each panel. Further analysis will determine how the univariate findings compare against the pairwise correlations as well as the multivariate analysis. Thus far, the importance of key personnel within the process has provided some relevance in the explanation of internal control issues as well as certain auditor characteristics and organization features.

Table 2: Detailed Compliance Findings by Category Type and County Budget Size

Category	Less than $50M	$50M-$100M	$100M-$150M	$150M-$200M	More than $200M	TOTAL
FinanceMW	**11**	**8**	**4**	**2**	**4**	**29**
FinanceSD	**6**	**8**	**2**	**1**	**3**	**20**
FEDMW	**7**	**10**	**5**	**3**	**0**	**25**
FEDSD	**9**	**12**	**4**	**0**	**6**	**31**
STATEMW	**4**	**6**	**3**	**2**	**2**	**17**
STATESD	**3**	**7**	**3**	**0**	**8**	**21**
TOTAL	**40**	**51**	**21**	**8**	**23**	**143**

Table 2 provides a more detailed examination of internal control findings by budget size based on total expenditures. Overall, the number of significant deficiency findings were approximately the same as material weaknesses. Findings also suggest that smaller governments are more susceptible to internal control issues compared to larger governments. This finding can be attributed to the personnel issues faced by smaller governments in which they have difficulty in filling positions with adequate personnel with current staff executing multiple job responsibilities. Material weaknesses within internal controls was a consistent problem for units within the smallest category. Specific problems within this category ranged from inadequate reconciliation of balance sheets to the pre-auditing of budgeted encumbrances. In one case, the county manager authorized the purchase of an ambulance and

a truck. The agreement was not pre-audited by the finance officer and did not contain a non-appropriation clause. Counties with budgets between $50M-$100M had the most problems with significant deficiencies within internal controls related to federal pass-through expenditures. This also provides much of the explanation for the state significant deficiency finding as well. Issues with state awards questioned costs findings were considered the same as federal awards findings in many cases, especially among the larger governments. A primary problem with many counties was reconciliation of public assistance programs, mainly some form of Medicaid, with the state-sponsored database (NCFAST)—North Carolina Families Accessing Services through Technology. Auditors cited ineffective record keeping, the lack of proper documentation which determines countable versus non-countable eligibility, and the lack of a case review process as problem sources. In some cases, it was just a matter of sending in quarterly progress reports. With some social service programs, additional reward money reporting requirements occur as the fiscal year comes to a close to improve accuracy, reconciliation, and sustain the accrual basis requirement.

Table 3: Detailed Compliance Findings by Category Type and County Net Position

Category	Negative	Lower (Positive) Net Position	10% < Increase	10% > Increase
FinanceMW	**5**	**7**	**2**	**15**
FinanceSD	**3**	**6**	**5**	**6**
FEDMW	**4**	**6**	**5**	**10**
FEDSD	**6**	**6**	**5**	**14**
STATEMW	**5**	**2**	**4**	**6**
STATESD	**8**	**3**	**4**	**6**
TOTAL	**31**	**30**	**25**	**57**

County net position change was utilized in the study to determine if it had an impact on internal control irregularities. Table 3 provides a look at net position change from the previous year in comparison to internal controls with financial management as well as intergovernmental awards. Governments with a substantial increase in overall net position from the previous year had the highest overall level of compliance issues. It was quite noticeable with significant deficiencies in federal awards and material weaknesses in financial control. An increase in net position of this size is usually attributed to some type of retirement of debt service which is usually associated with larger counties; however, 26 of the 39 governments that had an increase of 10% or more were governments with budget sizes of $100M or less. This somewhat correlates with Table 2 in which most internal control irregularities were found in smaller governments. For these governments, the increase in net position was the result of more efficient budgeting practices and an increase in cost-

cutting measures as well as short-term installment purchase practices versus traditional debt service (Modlin 2024A). Due to the higher interest rates associated with a lower bond rating, eliminating payables in a timely manner becomes a priority in daily transactions and an important indicator for bond rating analysis.

Table 4 provides a pairwise correlation analysis of the variables used in the study. A positive and significant relationship exists between material weaknesses in federal awards (FEDMW) and both financial control dependent variables demonstrating potential transaction inaccuracies on a government-wide basis. The positive relationship between significant deficiency findings among state awards (STATESD) and federal significant deficiency awards (FEDSD) supports the findings in Table 3. With the pairwise correlations, there appears to be only moderate support for the first hypothesis; however there appears to be some support for the second and third hypotheses as auditor and organizational characteristics have relationships with many of the dependent variables. For the second hypothesis, there were negative relationships between (AUDITOR) and (AUDITFEE) and financial material weaknesses (FINMW). There were also many positive relationships with many of the organizational factors and federal material weakness findings (FEDMW) and state material weakness findings (STATEMW). Many of the variables associated with hypothesis three were also related significant deficiencies in state awards (STATESD) with net position having a significant, but negative relationship verifying earlier findings in Table 3.

Table 4: Pairwise Correlations (N=100)

Variable	FINMW	FINSD	FEDMW	FEDSD	STATEMW	STATESD	FINEXP	ACCT	APTECH	BUSINESS
FINMW	1.000									
FINSD	.2865**	1.000								
FEDMW	.2936**	.1732*	1.000							
FEDSD	-.0472	.2054**	.0624	1.000						
STATEMW	.1214	-.0266	.4765**	.0420	1.000					
STATESD	.1574	.1105	-.0142	.3976**	.0281	1.000				
FINEXP	-.0832	-.0624	.0108	-.1073	-.1105	.1285	1.000			
ACCT	-.0214**	-.0547	-.0999	.0360	-.1259	-.0789	-.0463	1.000		
APTECH	-.0084	.0678	-.0498	.1042	-.0371	.3121**	-.0235	.4455**	1.000	
BUSINESS	.0083	-.1072	-.0354	.0119	.0620	.0286	-.0841	.3476**	.0308**	1.000
TOTEMP	.0271	.2235**	.1075	-.0507	-.0406	-.0759	-.0198	-.2242**	-.4119**	-.2350*
AUDITOR	.1744*	.2020	.0686	.4044**	.1841**	-.1068	.0245	-.2513**	-.1163**	-.1863*
AUDITFEE	-.1824*	-.1164	-.0621	.0705	.0830	.2032**	-.0570	.3515**	.2089	.2930**
ISF	.0445	-.0255	.2193**	-.0095	.2076**	.2390**	-.0918	.1289	.1898**	.1473
NETPOS	.0467	-.0677	-.0052	.0127	-.0829	-.2383**	.2026	-.1805*	-.2743**	-.0194
IG	.1828*	.2930**	.2258**	.1202	.2794**	-.0946	-.1513**	-.4269**	-.3291**	-.1873*
BUDGET	-.0971	-.0623	-.1478	-.0513	-.0002	.2186**	-.0253	-.4997**	.6170**	.3357**
QC	.0462	.1105	.2693**	.3976**	.2244**	.2267**	-.0529	.1000	.1002**	-.0842
RISK	.2435**	.1313	.2682**	.0581	.2318**	.2494**	-.2225**	.0186	-.1053	.0285
GFOA	.0406	-.1201	.0001	-.0918	.1151	.1514	-.0050	.3530**	.4373**	.2182**
COMM	.0788	.0967	.0012	-.0355	-.0489	.0309	.0030	.0449	.0799	.1066
AREA	.0945	.1423	.1291	.1007	.6558	.1193	-.0031	.1876*	.1131	.1856*

Table 4: Continued

Variable	TOTEMP	AUDITOR	AUDITFEE	ISF	NETPOS	IG	BUDGET	QC	RISK	GFOA	COMM	AREA
TOTEMP	1.000											
AUDITOR	.1513	1.000										
AUDITFEE	-.2629**	-.3300	1.000									
ISF	-.1435	-.1490	.1721*	1.000								
NETPOS	.1160	.2027**	.1619	-.0945	1.000							
IG	.2507**	.1810*	-.2246**	-.1440	-.0393	1.000						
BUDGET	-.4816**	-.6629**	.5411**	.3435**	-.2636**	-.4091**	1.000					
QC	-.1673*	-.1673**	-.0167	.1379	-.1075	.0362	-.0362	1.000				
RISK	-.0459	-.0053**	-.0050	.1643*	.0465	.1833**	-.0500**	-.0663	1.000			
GFOA	-.2952**	-.2835**	.4461**	.2697**	-.0036	-.3213**	.5154**	-.0452	-.0663	1.000		
COMM	-.0756	.2274**	.0242**	.0082	.0916	-.0670	.1933	-.0166*	.0410	.1084	1.000	
AREA	-.2219**	.0275	.1820*	.2874**	-.0707	.1600	.2711**	-.0804	.2723**	.0684	.0649	1.000

Notes: Table 4 represents pairwise correlations of the variables used in the analysis. ** represents correlations at the .05 level; *at the .10 level. FINMW, FINSD, FEDMW, FEDSD, STATEMW, and STATESD are bivariate variables in this table.

V. Multivariate Results

Table 5 presents the bivariate results for predicting specified internal control problems with six different models constructed to isolate internal control deficiencies. In the first two models, significant relationships were found to exist between some of the personnel factors and internal controls among financial activities. A significant and positive relationship exists between the total number of employees and significant deficiencies among financial activities (TOTEMP = 2.0551; Z = 2.55) suggesting that as the number of employees increase within a government unit, a higher likelihood exists of having a significant deficiency among financial transactions. An increased number of accounts payable personnel (APTECH) were also associated with a higher likelihood of a significant deficiency finding; moreover, the material weakness model demonstrates the importance of accounting positions (ACCT) in reducing elevated levels of internal control issues (ACCT = -.7247; Z = -1.83). Among the organizational factors, higher levels of intergovernmental funding (IG) and a questioned cost (QC) finding were positive and significant within the FSD model while counties designated as high risk (RISK) and being a GFOA award recipient led to higher likelihood of having a material weakness finding.

The models testing the predictors against federal awards had much more support for the second hypothesis. Within the federal significant deficiency model (FEDSD), there was a positive and significant relationship suggesting the use of the primary auditor of county governments in 2019 was associated with the higher likelihood of a significant deficiency finding (AUDITOR = 4.5971; Z = 2.90). Audit fees (AUDITFEE) was also positive and significant within this same model suggesting that as audit costs increased, there was also a higher likelihood of a significant deficiency finding among federal awards. One of the more interesting findings within the FED model was the utilization of the internal service fund and a material weakness finding demonstrating findings comparable to previous research (Doyle, Ge, and McVay 2007). However, the BUDGET finding within the FEDMW in comparison to the previous model suggests that the actions as a result of additional employees is more of a factor compared to comprehensive organization size.

The third model consists of an examination of state award inconsistencies against the predictors. The models did present some evidence in support of the initial hypothesis as did the finance models. Another common finding was that models had positive and significant findings with both APTECH and TOTEMP. Contrary to the first model was the finding associated with the business officer (BUSINESS) although the finding suggest that the presence of this position leads to a higher probability of a material weakness in internal control finding among state awards (BUSINESS =

1.2421; Z = 1.85). In most cases, this position is primarily responsible for budgetary and personnel issues and usually has very limited accounting expertise. The third hypothesis was also supported with this model as many variables had significance including the use of an internal service fund (ISF), a questioned cost (QC) finding, and being a GFOA recipient.

Support for the third hypothesis appears to be the most evident with three variables: QC, RISK, and GFOA. Questionable cost findings were significant in five of the models and was consistently associated with social service provisions that require multiple forms of verification and a subsequent reconciliation with a state hardware system therefore explaining both types of internal control problems. County risk designation was significant in two of the models. Although used with the third hypothesis as an organizational characteristic, RISK does represent employee actions from previous cycles and the variable was significant in two of the models. Further analysis revealed that risk increased with less experienced finance officers, less staff accountants, and accounts payable personnel demonstrating the importance of the skillset in reducing various risk. The GFOA variable was also significant and positive in three of the models. An additional finding is that within all three of the models, the variable is significant with the material weakness models only. The award is usually highlighted early on within CAFRs and coupled with carefully articulated language within the MDA, provides an engrossing portrayal of a unit.

Table 6 presents two ordered logistic regression models in which the dependent variables are an amalgamation of total material weaknesses and significant deficiencies. The models provide a way of examining the unit from a comprehensive standpoint to determine the level of internal control problems based on the predictors. There were a number of findings within the TMW model that were primarily associated with organizational factors. An inverse relationship exists between audit costs and the number of material weaknesses disclosed (AUDITFEE = -1.023; Z = -1.85), net position and number of material weaknesses disclosed (NETPOS = -.4491; Z = -1.68), and budget size and number of material weaknesses disclosed (BUDGET = -.8087; Z = -2.19). All of the remaining variables associated with hypothesis three were significant and positive suggesting a higher likelihood of material weakness findings given the presences of the predictor, or in the case of county commissioners, more than five. The continuing efforts by commissioners to provide services has been found to present challenges to staff during the budget formulation process (Modlin 2019). These same requests can require specific fund development in which a significant deficiency can easily occur (Modlin 2024B).

Table 5: Determinants of Compliance Findings by Financial Events, Federal Programs, and State Programs

Panel	FINMW	FINSD	FEDMW	FEDSD	STATEMW	STATESD
FINEXP	-.0041(-0.02)	.0463 (0.21)	.2943 (1.53)	-.2515 (-1.16)	.1284 (0.55)	.0050 (0.02)
ACCT	-.7247 (-1.83)*	.4698 (1.18)	.0999 (0.27)	.4952 (1.36)	-.4045 (-0.85)	-.4778 (-1.35)
APTECH	.1740 (0.79)	.5634 (1.72)*	.1222 (0.47)	.1518 (0.55)	-.3200 (-1.09)	.7429 (2.41)**
BUSINESS	.5048 (1.10)	-.2922 (0.49)	.3091 (0.60)	.3909 (0.75)	1.2421 (1.85)*	-.6604 (-1.17)
TOTEMP	-.0314 (-0.05)	2.0551 (2.55)**	.5020 (0.82)	.2724 (0.35)	-.4187 (-0.45)	1.3779 (1.84)*
AUDITOR	.7952 (1.10)	1.0235 (1.19)	.3534 (0.44)	4.5971 (2.90)***	-1.5769 (-1.10)	-.2997 (-0.25)
AUDITFEE	-.9262 (-1.44)	-.6730 (-0.78)	-.0922 (-0.13)	1.9890 (2.41)**	-.1150 (-0.12)	1.3475 (1.67)*
ISF	-.1083 (-0.18)	-.4436 (-0.58)	1.3430 (1.96)**	-.3711 (-0.48)	1.5046 (1.68)*	.7290 (0.99)
NETPOS	-.2098 (-0.73)	.0329 (0.10)	-.2588 (-0.77)	.0877 (0.26)	-.4892 (-1.16)	-.4222 (-1.28)
IG	.2031 (0.33)	2.2722 (2.66)**	.9168 (1.27)	.5593 (0.72)	2.6749 (2.54)**	-.9686 (-1.26)
BUDGET	-.2902 (-0.83)	.3987 (0.89)	-.7630 (-1.68)*	-.1058 (-0.23)	-.0804 (-0.17)	.0537 (0.11)
QC	.0278 (0.04)	1.5305 (1.84)*	1.6401 (2.45)**	3.4563 (3.93)***	1.6092 (1.96)**	1.4542 (1.86)*
RISK	1.1344 (1.08)*	.1898 (0.24)	.8361 (1.22)	-.3648 (-0.47)	.8261 (0.95)	2.6858 (2.55)**
GFOA	1.7366 (2.34)**	-.0828 (-0.08)	1.2808 (1.60)*	-.6324 (-0.70)	1.9841 (1.81)*	.0690 (.07)
COMM	.1796 (0.32)	.6059 (0.91)	.4251 (0.64)	-1.3569 (-1.75)*	-.0603(-.07)	-.0113 (-0.02)
AREA	.5511 (0.86)	.5542 (0.67)	.5470 (0.76)	.8895 (1.04)	-.5807 (-0.67)	.2473 (0.21)
Constant	-.9041 (-0.36)	-12.9372 (-3.28)**	-5.9884 (-2.01)**	-4.8472 (-1.50)	-7.2298 (2.91)*	-6.8430 (-2.00)**
N	100	100	100	100	100	100
Log. Lik.	-47.1739	-32.8919	-40.0625	-34.5890	-27.2253	-22.6911
LR Chi-Squared (16)	23.58*	21.04**	29.54**	52.90***	33.12**	34.93**
McFadden's Pseudo R-Squared	0.2000	0.2206	0.2694	0.4279	0.3782	0.3414

Notes: Cell entries are unstandardized parameter estimates; ***p <.001; **p < .05; *p < .10 (Two-tailed test). Z scores in parentheses. The table presents estimates of bivariate regression specifications.

The influence and impact of key personnel can be found with the TSD Model. A higher level of accounts payable technicians (APTECH = .3871; Z = 1.96) and the number of county employees (TOTEMP = 1.0033; Z = 1.96) are significant and positive indicating that an increased presence of either led to an elevated likelihood of significant deficiency findings. The model also had findings related to auditor influence with both variables having significant and positive relationships. With the auditor finding (AUDITOR = 1.9106; Z = 3.15), it can be suggested that the use of the most widely contracted auditor leads to a higher likelihood of a significant deficiency finding. This finding can represent accolades for the auditor due to reputation and widespread use. AUDITFEE had an inverse relationship compared to the positive relationship found in the TMW model. These findings are consistent with the significant deficiency findings in Table 6 with positive relationships among federal and state awards. A questioned cost finding was significant in this model as well as nearly every model that was presented. All models were significant and positive suggesting that the presence of any form of questioned costs increases the probability of finding either a significant deficiency or a material weakness. In every case in which there was a questioned cost, there was either a material weakness or significant deficiency finding. Questioned costs were not exclusive to material weaknesses or significant deficiencies nor with any type of award or transaction. Both models were significant at the .001 level after being tested against a constant-only model, indicating that as a set, the predictors are reliable for determining the alternate levels of material weaknesses and significant deficiencies.

Table 6: Determinants of Total Disclosure Findings by Material Weaknesses and Significant Deficiencies

Panel	TMW		TSD	
FINEXP	.1608	(1.01)	.0273	(0.19)
ACCT	-.4526	(-1.23)	.1550	(0.63)
APTECH	.0546	(0.29)	.3871	(1.96)**
BUSINESS	.6113	(1.49)	-.0785	(-0.21)
TOTEMP	.2848	(0.56)	1.0033	(1.96)**
AUDITOR	-.0680	(-0.12)	1.9106	(3.15)**
AUDITFEE	-1.023	(-1.85)*	.8669	(1.67)*
ISF	.0802	(0.15)	-.0607	(-0.12)
NETPOS	-.4491	(-1.68)*	.0103	(0.04)
IG	-.0880	(-0.15)	1.0127	(1.89)**
BUDGET	-.8087	(-2.19)**	.2820	(0.97)
QC	1.4644	(2.52)**	2.2086	(3.89)***
RISK	1.1703	(2.05)**	.7118	(1.36)
GFOA	2.1704	(3.19)***	-.1893	(-0.30)
COMM	1.0160	(1.76)*	.0407	(0.09)
AREA	1.345	(2.10)**	.2357	(0.43)
Threshold 1	1.5536		8.0621	
Threshold 2	2.7702		9.5651	

Threshold 3	5.0436		12.1251	
N	100		100	
Log. Lik.	-83.2177		-87.2769	
LR Chi-Squared (16)	40.60***		45.48***	
McFadden's Pseudo R-Squared	0.1961		0.2067	

Notes: Cell entries are unstandardized parameter estimates; ***p <.001; **p < .05; *p < .10 (Two-tailed test). Z Scores in parentheses. The table presents estimates of ordered logistic regression specifications. For the dependent variables, TMW = 3 if there were material weakness compliance findings for finance activities, federal programs, and state programs; TSD = 3 if there were significant disclosure compliance findings within finance activities, federal programs, and state programs.

A comprehensive examination of the models provides at least some support for all of the hypotheses, but especially for organizational factors. Based on the findings and further information obtained from the audits, it can be determined that the continuing evolution of service needs and demands create an audit finding illuminating internal control problems. The models suggest that medium sized governments that may have just issued some type of debt service (NETPOS) or installment purchase and that have had a previous finding had a higher probability of having a material weakness in internal controls. The models do provide some support for this conclusion with the COMM and AREA finding. Both predictors are sources related to service demands. If the county contracts with government audit specialist (AUDITOR), then the probability of the significant deficiency increases with the federal awards pass-through expenditures. The second hypothesis had support based primarily on the AUDITFEE finding which was significant for both models, but alternate directions. However, based on the primary model and two of the bivariate models, higher audit costs were associated with the identification of significant deficiencies among federal and state awards. These findings correlate with the IG findings in the TSD model as well as the FINSD and STATEMW models. Many of these same models also provided some support for two of the variables that encompass the first hypothesis. Both variables, APTECH and TOTEMP, had significance with the TSD model as well as the bivariate intergovernmental awards models suggesting that although the unit has significant deficiencies, there are personnel in place to mitigate fraud and sustain accuracy with financial reporting.

Conclusion

The purpose of this study was to examine the underlying contributors to material weaknesses and significant deficiencies in internal controls among local governments. The overall models point to a link between several organizational characteristics and material weaknesses while total number of positions, position type, auditor specification, and cost have a positive

relationship with a significant deficiency finding. The overall findings also point to specific aspects associated with the organization as well as key personnel as potential catalysts for problems within internal controls. The impact of the governing body on staff for service demands, especially among governments that have a high number of employees in a service area of more than 500 square miles, are at a higher risk for a material weakness finding. In addition, the solicitation of the more specialized auditor is more likely to have a significant deficiency finding, especially in a county with a higher number of accounts payable personnel, intergovernmental funding, and a questioned cost. The GFOA finding suggests that it is a priority for the county to receive the award despite potential issues with internal controls that could lead to a misrepresentation of financial statements leading to severe impacts on the financial viability of the unit.

Compared to previous studies, the findings were somewhat mixed. The accounts payable technician position was exploratory so this was a new finding. However, the number of findings consisting of staff accountants as well as finance officer experience had no relationship with internal control inconsistencies compared to previous research (Modlin 2012; Modlin 2017; Rich and Zhang 2016). The cumulative internal control findings are consistent with the findings of Jakubowski (1995). The argument can also be made that due to the significance of the total employee variable, the intergovernmental funding variable, and the use of internal service funds with one bivariate model, organization size, change, and complexity can lead to additional internal control findings (Ge and McVay 2005; Doyle, Ge and McVay 2007; Ashbaugh-Skaife, Collins and Kinney 2007). Additionally, overall material weaknesses in internal controls were associated with larger budget sizes substantiating previous findings (Baber, Brooks, and Ricks 1987; Copley 1989). Another new finding points to additional material weaknesses and counties with larger service areas. The GFOA finding was also positive and significant with all material weakness models validating a previous finding suggesting that the award is an ornate method of accuracy posturing (Modlin 2024B).

Limitations do exist with the study. First, accounts payable positions were available; however, the designated receivables position data could have provided more insight into the material weakness models. Second, more information concerning overall finance officer responsibilities, especially for smaller counties with limited staff, could have offered additional transparency. Third, the business officer variable was used, but not isolated or assigned to a specific department. Data concerning which specific county departments had the position could further isolate internal control discrepancies. Another major limitation is the timing associated with audits. Further information concerning the actual beginning of a significant deficiency could reduce the amount of

time and resources used to eliminate problems as well as informing upper-level staff as well as elected officials of potential impacts at certain points dung the fiscal year, especially as the fiscal year concludes.

This study highlights the importance of staff proficiency in execution. Pressure from the governing body and department heads as well as the public create these demands with many of the transactions falling on the finance office. If not adequately staffed with personnel with correct expertise, a higher probability of internal control problems exists. Problems become even more complex for the finance office if the government unit provides social service and public health services that are correlated with an aggregation of intergovernmental revenue sources. The study also illustrates the need for experienced auditors who have conducted numerous government audits that can better assist with the identification of internal control problems based on county size, staff capabilities, and specific transaction types. The investigation of more substantial sample sizes may illuminate more potential deficiencies that need to be addressed by staff, but also the risk of increased questioned costs.

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Appendix

Variable	Definition
TMW (DV-Ordered)	**Total Number of Compliance Findings Attributed to Material Weakness; 3 = Findings among Financial, Federal, and State Activities Source: CAFR**
TSD (DV-Ordered)	**Total Number of Compliance Findings Attributed to Significant Deficiencies; 3 = Findings among Financial, Federal, and State Activities Source: CAFR**
FINMW (DV)	**Material Weakness Finding among Financial Statements; 1 = Yes Source: CAFR**
FINSD (DV)	**Significant Deficiency Finding among Financial Statements; 1 = Yes Source: CAFR**
FEDMW(DV)	**Material Weakness Finding associated with Federal Program Services; 1 = Yes Source: CAFR**
FEDSD (DV)	**Significant Deficiency associated with Federal Program Services; 1 = Yes Source: CAFR**
STATEMW (DV)	**Material Weakness Finding associated State Program Services; 1 = Yes Source: CAFR**
STATESD (DV)	**Material Weakness Finding associated with State Program Services; 1 = Yes Source: CAFR**
FINEXP	**Finance Officer Experience; 5 = More than 20 Years Source: UNC School of Government County Salary Study, CAFRS**
ACCT	**Number of Staff Accountants; 5 = Five or More Source: UNC School of Government County Salary Study**
APTECH	**Number of Accounts Payable Technicians on Staff; 5 = Five or More Source: UNC School of Government County Salary Study**
BUSINESS	**Business Officer for County Social Services and/or Public Health; 1 = Yes Source: UNC School of Government County Salary Study**
EMP	**Number of County Employees as a Percent of County Population; 3 = More than 2% Source: CAFR**
AUDITOR	**Auditor Responsible for 2019 Audit; 1 = TPSA Source: CAFR**
AUDITFEE	**Audit Fees by Unit; 3 = More than $100K Source: NC Department of State Treasurer**
ISF	**Use of Internal Service Fund by County; 1 = Yes Source: CAFR**
NETPOS	**Net Position Change from Previous Year; 3 = Increase by More Than 10% Source: CAFR**
IG	**Intergovernmental Funding as a Percent of Total Revenue; 3 = More than 20% Source: CAFR**
BUDGET	**Total Budget Size by Revenue; 5 = More than $200M Source: CAFR**
QC	**Auditor Finding of Questioned Costs; 1 = Yes Source: CAFR**
RISK	**County Government Designated High Risk by Audit Firm; 1 = Yes Source: CAFR**
GFOA	**Recipient of GFOA CAFR Presentation for 2018; 1 = Recipient Source: Government Finance Officers Association**
COMM	**Number of Elected County Commissioners; 3 = More than 5 Source: University of North Carolina School of Government**
AREA	**Number of County Square Miles; 1 = More than 500 Source: US Census Bureau Geography Division (2010)**