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THE DETERMINANTS OF ORGANIZATIONAL INNOVATIVENESS:

THE ADOPTION OF GASB 34 IN PENNSYLVANIA LOCAL GOVERNMENT

A Thesis in

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ABSTRACT

In 1999, the Government Accounting Standards Board passed GASB Statement No. 34 (GASB 34), requiring local governments to improve the way they prepare financial information. GASB 34 requires many local governments to adopt the modified accrual basis of accounting and to record their infrastructure assets on a retroactive basis. GASB 34 is perhaps the most important change in government accounting history, yet we know little about whether it will be adopted. GASB 34 is designed to improve the transparency and accountability of governments, but some opponents claim that GASB 34 is costly and difficult to implement. Adoption is mandatory, but the consequences for failing to adopt are minimal, since there is little regulatory oversight over the financial reporting of local governments. Given these conditions, the extent to which local governments will adopt an administrative innovation such as GASB 34 is unknown.

This study uses Everett Rogers' model of organizational innovativeness to identify the organizational determinants associated with the adoption of GASB 34 among Pennsylvania's local government. The model contains three organizational components: organizational culture, organizational structure, and the external environment. Proxies of organizational culture are the local government's propensity to innovate and responsiveness to constituents. Proxies of organizational structure are the local government's occupational specialization, functional differentiation, administrative intensity, slack resources, and organizational size. Proxies of the external environment are the local government's debt financing and intergovernmental revenue.

The research question is: *Can a model of organizational innovativeness identify the determinants of adoption of GASB 34 among Pennsylvania local governments?*

The binary logistic regression indicates that organizational size is a strong and consistent determinant of adoption, supporting the hypothesis that larger Pennsylvania local governments are more likely to adopt administrative innovations such as GASB 34 than smaller local governments. The propensity to innovate and responsiveness to constituents are also included in the model, but the predictive ability of these variables is weaker than organizational size. Overall, the results suggest that organizational determinants such as organizational culture and organizational structure can be reliable determinants of the adoption of administrative innovations such as GASB 34.

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LIST OF ABBREVIATIONS

BRIGNA	Behavioral Research in Government & Nonprofit Accounting
CAFR	Consolidated Annual Financial Report
CCP	Certificate of Conformance Program
CPA	Certified Public Accountant
COG	Council of Governments
DCED	Department of Community & Economic Development
FIFO	First-in-First-Out
GAAP	Generally Accepted Accounting Principles
GASB	Government Accounting Standards Board
GASB 34	Government Accounting Standards Board Statement No.34
GFOA	Government Finance Officers Association
LIFO	Last-In-First-Out
MFOA	Municipal Finance Officers Association
Penn DOT	Pennsylvania Department of Transportation
PSATS	Pennsylvania State Association of Township Supervisors
SFAS	Statement of Financial Accounting Standards
SMSP	Shared Municipal Services Program
VIF	Variance Inflation Factor

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Chapter 1

INTRODUCTION

The introduction contains: (a) the purpose of the study; (b) an overview of GASB 34; (c) a literature review of organizational innovativeness; and (c) the gaps in the literature.

The Purpose of the Study

In June 1999, the Government Accounting Standards Board (GASB) passed Government Accounting Standards Board Statement No. 34 - Basic Financial Statements and Management's Discussion and Analysis for State and Local Governments (GASB 34), significantly changing the way local governments must report financial information (Kravchuck & Voorhees, 2001). The purpose of GASB 34 is to improve the transparency and accountability of local governments (Ives, 2000). GASB 34 attempts to do this by requiring local government to submit annual financial statements containing information that will allow the readers of financial statements to more accurately assess the financial condition of the covered entities (Ives, 2000). In short, GASB 34 seeks to better illuminate the financial position of the local governments by requiring them to provide complete balance sheet information.

GASB 34 requires the balance sheet information of local governments to include all the assets and liabilities of the entity. This includes all the revenues earned but not received (accrued revenues) and all the expenses incurred but not paid (accrued

expenses). The private sector has always issued such information to financial statement users. GASB 34 now requires local governments to report it. Some scholars say GASB 34 requires local governments to provide financial information that is comparable to organizations in the private sector (Sacco, 2000).

GASB 34 is arguably the most important change in government accounting history (Heinfeld, 2003), yet we know little about the extent to which it has been or will be implemented by covered entities. GASB 34 requires many local governments to issue financial statements using the accrual basis or modified accrual basis of accounting. It requires many local governments to record the infrastructure assets owned by the municipality on a retroactive basis and to depreciate those assets going forward (Johnson & Bean, 1999). GASB 34 is intended to improve the transparency and accountability of local governments, but the requirements of GASB 34 are complex and potentially difficult and costly to implement. For this reason, it is difficult to predict the extent to which GASB 34 will be adopted.

Compliance with GASB 34 is mandatory, but the consequences for noncompliance are minimal. The GASB does not have enforcement authority over the financial reporting of local governments. Neither does the U.S. Securities & Exchange Commission. Local governments are extensions of state governments. Therefore, state governments regulate the financial reporting of local governments, but state governments do not always enforce compliance with Generally Accepted Accounting Principles (GAAP). In Pennsylvania, local governments are required to submit annual audited financial statements to the Pennsylvania Department of Community & Economic Development (DCED), but the agency does not have statutory authority to enforce the

submission of such statements. It does not even have authority to contest the manner in which the statements were prepared. Pennsylvania State laws also do not require audits by independent certified public accountants (CPA).

There are consequences for failing to comply with GASB 34. Local governments that fail to adopt GASB 34 will most likely receive qualified audit reports because their statements will contain material departures from GAAP. Thus, an advantage of adopting GASB 34 is to obtain an unqualified audit report; however, this is relevant only if the local government needs or wants a GAAP-compliant statement. Local governments with outstanding long-term debt and those wishing to receive grants or intergovernmental funding may wish to comply with GAAP (GASB, 2003), but not all local governments are motivated to comply with GAAP. Many Pennsylvania local governments do not worry about the consequences of receiving a qualified audit report because they do not carry debt or do not get audited. This makes it especially difficult to predict the extent to which local governments in Pennsylvania will adopt GASB 34.

An accounting policy change such as GASB 34 can be defined as an administrative innovation. Defined this way the researcher can apply organizational theories to examine the organizational determinants associated with the adoption of administrative innovations. Looking at GASB 34 as an administrative innovation is important because it also recognizes that the decision to adopt an innovation within the context of an organization is an organizational process, not a decision made by an individual adopter. This study defines GASB 34 as an administrative innovation and attempts to identify the organizational characteristics associated with the adoption of the innovation.

The purpose of this study is to build a model of organizational innovativeness that can identify the determinants of the adoption of GASB 34 among Pennsylvania's local governments. The study does this by using an adapted version of Everett Rogers' (2003) model of organizational innovativeness to identify the organizational characteristics of Pennsylvania local governments that have adopted GASB 34. The model uses three organizational components (organizational culture, organizational structure, and the external environment) that are often associated with the adoption of innovations.

The research question is: *Can a model of organizational innovativeness identify the determinants of the adoption of GASB 34?*

This study is important because it contributes to our knowledge of public administration, organizational innovativeness, and government accounting. GASB 34 is an important governmental accounting policy change, yet we know little about the extent to which Pennsylvania local governments have adopted it. This study sheds light on the extent to which GASB 34 has been adopted among Pennsylvania's local governments. This allows us to compare the characteristics of the local governments that have adopted with those that have not for the purpose of predicting governments who might adopt in the future. This information is important to local government administrators considering the adoption of GASB 34. It is equally important to policy makers and regulators, local government elected officials, and state oversight agencies. Financial statement users such as creditors, bond-raters, and providers of intergovernmental revenue will also find this information useful, as will practitioners and scholars of public administration, organizational innovativeness, and government accounting because its findings can be applied to the formulation of future policies and organizational studies.

An Overview of GASB 34

In June 1999, the Government Accounting Standards Board (GASB) passed Government Accounting Standards Board Statement No. 34 - Basic Financial Statements and Management's Discussion and Analysis for State and Local Governments (GASB 34), which is arguably the most important governmental accounting change in history (Heinfeld, 2003). It significantly changes the way governments must record and issue financial information. GASB 34 covers all sub-national governments, including state and local governments, public universities, school districts, special districts, and municipal authorities (GASB, 2003). Any of the aforementioned public organizations wishing to issue statements in compliance with GAAP must comply with the provisions of GASB 34 (GASB, 2003). GASB 34 covers a wide variety of public organizations; however, the focus of this research is limited to Pennsylvania local governments.

The purpose of GASB 34 is to improve the transparency and accountability of local governments (Ives, 2000). GASB 34 attempts to do this by requiring local government to submit annual financial statements that contain information, which will allow the readers of the financial statements more accurately assess the financial condition of the covered entities (Ives, 2000). In other words, GASB 34 seeks to better illuminate the financial position of the local governments by requiring them to provide complete balance sheet information. This balance sheet information must now include all the assets and liabilities of the entity, all the revenues earned but not received (accrued revenues), and all the expenses incurred but not paid (accrued expenses). The private sector has always issued such information to financial statement users. Local

governments must also now report it. Thus, GASB 34 requires local governments to provide financial information that is comparable to the private sector (Sacco, 2000).

GASB 34 changes a number of the financial reporting requirements for local governments. A complete discussion of these requirements is beyond the scope of this research. Therefore, only the most significant changes are discussed below. These include: (a) the accrual basis of accounting; (b) the requirements for infrastructure assets; (c) the adoption deadline; and (d) the conclusion of the GASB 34 overview.

The Accrual Basis of Accounting

GASB 34 requires local governments to adopt the accrual or modified accrual basis of accounting (herein after referred to simply as the accrual basis of accounting). Adopting the accrual basis of accounting is a significant change for many local governments, as most small local governments have been reporting their financial information on the cash basis of accounting for decades (Johnson & Bean, 1999; Rose, 2000). The cash basis of accounting shows only the cash received and cash paid (cash inflows and outflows) during a period. It fails to reflect any accrued revenues or expenditures (Rose, 2000).

The cash basis is deficient in many ways. It violates the matching principle because revenues are not necessarily recorded in the accounting period in which they are earned and expenditures are not necessarily matched to related revenues. By letting management record revenues when received, rather than earned, and by not requiring organizations to match related expenditures to revenues, the cash basis of accounting

allows management to manipulate the recognition of revenues and expenditures. Management can simply defer the recognition of revenues and expenditures to accounting periods when recognition is more advantageous. In this way, the cash basis of accounting fails to provide transparency and accountability. It simply does not allow financial statement users to see the true financial condition of an organization.

The cash basis of accounting's greatest deficiency is its inconsistency with GASB Concept Statement No.1 - Objectives of Financial Reporting, a fundamental accounting principle issued by the GASB in 1987 (Ives, 2000; Rose, 2000). Concept Statement No. 1 holds that governmental entities must provide information that will present a fair picture of a government's financial condition (Ives, 2000; Rose, 2000). Governments must provide complete, accurate, and timely financial information for the purpose of being accountable and transparent to the public. Despite the intentions and requirements of Concept Statement No. 1, many local governments continue to use the cash basis of accounting. As a result, these local governments do not provide the information needed to be transparent or accountable (Ives, 2000; Wilson & Kattelus, 2001). GASB 34 contains some of the same provisions and is grounded in Concept Statement No. 1. Thus, GASB 34 is a second attempt to implement Concept Statement No. 1 (Rose, 2000).

The accrual basis accounting is designed to provide financial statement users with the information they need to accurately assess the financial condition of local governments. The accrual basis of accounting requires that revenues and expenditures are matched to the proper accounting periods. The accrual basis of accounting, along with the other provisions of GASB 34, will provide the information needed for financial statement users to assess the liquidity, efficiency, and solvency of local governments. If

GASB 34 is adopted, financial statement users will have, for the first time in history, the information needed to assess the financial condition of local governments. This will, among other things, enable financial statement users to determine whether local governments are able to maintain their current level of services, meet their debt service, and possess long-term viability.

The objective of any effective financial reporting system is to enable financial statement users to make informed decisions (Ives, 2000). Financial statements prepared using the accrual basis of accounting provide readers with much better information than statements prepared using the cash basis of accounting (Ives, 2000). Bond-rating companies, banks, and citizens cannot accurately assess a local government's financial condition without knowing the expenses incurred but not paid and revenues earned but not received in an accounting period (Ives, 2000; Wilson & Kattelus, 2001). Readers must also know the full extent of an entity's assets and debt obligations, if they are to accurately assess the financial condition of an organization (Wilson & Kattelus, 2001). The information provided by GASB 34 will finally enable financial statement users to assess the financial position of local governments (Ives, 2000; Wilson & Kattelus, 2001).

The Requirements for Infrastructure Assets

Another significant change is the requirement that local governments record their infrastructure assets. Local governments have always capitalized their property, plant, and equipment (Patton & Bean, 2001); however, GASB 34 goes further. It requires local governments to begin capitalizing and depreciating infrastructure assets such as roads,

bridges, sewer systems, water treatment plants, etc. (Patton & Bean, 2001). All governments must record these assets on a prospective basis. Large local governments must prospectively and retroactively record such assets (Patton & Bean, 2001). This means that large local governments must record all their infrastructure assets, regardless of when they were purchased or put into place. Some scholars say this change is the most significant change in governmental accounting history (Heinfeld, 2003).

Only the largest local governments are required to retroactively record their infrastructure assets. Still, it is easy to see how many local governments might be overwhelmed with the task of recording their infrastructure assets. The nature and magnitude of this task is probably unlike anything they have encountered before. For this reason, GASB 34 has been written with a great deal of flexibility with the way in which infrastructure assets may be recorded. Consistent with fundamental accounting principles, infrastructure assets must be recorded at their historic costs, but costs can be estimated where invoices and supporting documentation are not available (Cote & Herron, 2000; DeVries, 2000). Governments can also use a variety of valuation methods to value the assets (e.g., net realizable value, book value, replacement cost, fair market value, etc.; Wallace, 2000). Governments can estimate the cost of their infrastructure assets at today's prices and take those prices back to their historic costs using indices (DeVries, 2000). Local governments can even bundle groups of assets, rather than itemizing them individually (Patton & Bean, 2001). Thus, GASB 34 is very flexible and allows a variety of methods in determining the costs of infrastructure assets (Patton & Bean, 2001; Wallace, 2000).

Notwithstanding the flexibility provided by GASB 34, the requirement to retroactively record infrastructure assets may be difficult to implement. The thought of recording every roadway, bridge, sewer line, and culvert is likely a daunting task for many local governments and opponents quickly rallied against this provision. Shortly after GASB 34 was passed, the Government Finance Officers' Association (GFOA) posted an adverse response to GASB 34 on its website. In this announcement, the GFOA said the GASB had overstepped its authority and that governments should not comply with GASB 34 (Rose, 2000). Some time later, the GFOA reversed its position and began to encourage governments to comply with GASB 34.

By contrast, proponents of improved financial information were immediately delighted with GASB 34. Proponents feel that even though the infrastructure asset requirements may require a significant undertaking, the potential benefits gained by better financial information far out-weigh the costs of recording such information. Information will now be available to assess the true financial condition of local governments. This information will provide comparability and consistency across local governments. For the first time in history, users will be able to perform financial statement analysis. Before GASB 34, it was virtually impossible to assess the true financial condition of local governments because the information was simply unavailable.

The provision to retroactively record infrastructure assets is arguably the biggest change in governmental accounting history. For this reason, it generated a lot of controversy. At the same time, the information provided by this provision offers one of the greatest benefits for financial statement users in governmental accounting history (Heinfeld, 2003).

The Adoption Deadline

GASB 34 is very important to the transparency and accountability of public organizations, but implementation maybe difficult for some local governments. For this reason, the prospective and retroactive provisions of GASB 34 are being phased-in over two different timelines.

The prospective requirements are being phased-in over a 2-year period, based on the government's size in terms of total annual revenue (Patton & Bean, 2001). The largest governments must implement first. Governments with total annual revenues of $100 million or more must issue statements that comply with the prospective provisions of GASB 34 for the years beginning after June 15, 2001 (these are called Phase 1 governments). Governments with total annual revenues between $10 and $100 million must issue statements that comply with the prospective provisions of GASB 34 for the years beginning after June 15, 2002 (these are called Phase 2 governments). Governments with total revenue of less than $10 million must issue statements that comply with the prospective provisions of GASB 34 for the years beginning after June 15, 2003 (these are called Phase 3 governments).

Early compliance is encouraged for all governments, but compliance with the retroactive provisions of GASB 34 may take time (Patton & bean, 2001). As mentioned previously, very few, if any, local governments have ever recorded their infrastructure assets (Patton & Bean, 2001). Thus, retroactively recording these assets is likely to be a significant undertaking, but there are other difficulties in complying with the retroactive provisions of GASB 34.

Early compliance with the retroactive provisions of GASB 34 could result in temporary negative net assets for certain local governments (Wallace, 2000). Most local governments know the amount of their total debt, but they do not know the amount of their total assets. It could take several years before some governments are able to estimate the total costs of their infrastructure assets. If these local governments attempt to comply with the retroactive provisions too early, they will record their total debt without recording the corresponding total assets. This will result in the local government reporting temporary negative net assets (Wallace, 2000). Due to the possibility of negative net assets and the anticipated difficulty in recording infrastructure assets, the GASB has extended the compliance deadline for the retroactive provisions.

The provisions to retroactively record infrastructure assets are phased-in over a 3-year period (Patton & Bean, 2001). Again, the deadline is based on total annual revenue. Governments with total annual revenues of $100 million or more must retroactively record their infrastructure assets for the year beginning after June 15, 2005 (Phase 1 governments). Governments with total annual revenues between $10 and $100 million must retroactively record their infrastructure assets for the year beginning after June 15, 2006 (Phase 2 governments). Governments with total annual revenues less than $10 million are encouraged to retroactively record infrastructure assets, but are not required to do so (Phase 3 governments). The implementation timetable is presented in Figure **1**.

It is useful to know that Pennsylvania local governments report on a calendar yearend. Thus, the Phase 1 governments must adopt the retroactive provisions by December 31, 2006 while the Phase 2 governments must adopt the retroactive provisions by December 31, 2007.

Phase Determined by Total Revenue	Deadline to Implement Prospective Provisions	Deadline to Implement Retroactive Provisions
Phase 1: $100 or more	For years beginning after June 15, 2001	For years beginning after June 15, 2005
Phase 2: $10 to $100 million	For years beginning after June 15, 2002	For years beginning after June 15, 2006
Phase 3: Less than $10 million	For years beginning after June 15, 2002	Optional

Figure 1: The Implementation Timetable

The GASB asserts that compliance with GASB 34 is compulsory, but the consequences for noncompliance are questionable, particularly if local governments are not required to have their financial statements audited by independent CPAs, which is the case in Pennsylvania. In Pennsylvania, local governments can be audited by elected auditors, who are not licensed CPAs. Furthermore, neither the GASB nor any other organization has strict enforcement authority over the financial reporting of local governments. Local governments in Pennsylvania are legally required to submit annual audited financial reports to the DCED, but the reports need not comply with GAAP and the DCED cannot enforce the submission of these reports or the manner in which the reports are prepared. These factors make it difficult to predict whether Pennsylvania local governments are innovative enough to voluntarily adopt an administrative innovation such as GASB 34.

Conclusion of the GASB 34 Overview

GASB 34 was issued to improve the financial reporting of local governments, but the GASB is not a regulatory agency. The GASB is a private, nonprofit, organization that operates under the auspices of the Financial Accounting Standards Board and the Financial Accounting Foundation (GASB, 2003). Public organizations within its jurisdiction must comply with its provisions if they wish to receive unqualified audit reports by independent CPAs, but there are few overt consequences for noncompliance. The GASB cannot fine or impose penalties against organizations for noncompliance. State oversight agencies may lack enforcement authority over local governments or be lax in their enforcement. Due to the lack of negative consequences for noncompliance, the adoption of GASB 34 among Pennsylvania's local governments may be low. Adoption may be low also, given the complexity of the requirements and huge undertaking required to implement some of the changes.

Some local governments will adopt GASB 34 in order to say that their financial statements are prepared in accordance with GAAP. This is important for governments that need to meet debt covenants and those wishing to earn awards for excellence in financial reporting (GASB, 2003). Local governments wishing to receive grants and intergovernmental funding may also adopt GASB 34, if GAAP-compliant statements are required by the funding source. By contrast, local governments that historically have not complied with GAAP, those lacking administrative capacity, and those without long-term debt may not adopt it. These factors make it difficult to predict the extent to which local governments in Pennsylvania will adopt GASB 34.

A Literature Review of Organizational Innovativeness

The literature review of organizational innovativeness contains three sections: (a) the definition of organizational innovativeness; (b) an overview of organizational innovativeness, and (c) a model of organizational innovativeness.

The Definition of Organizational Innovativeness

An innovation is any new idea or practice perceived of as being new by any individual, organization, or unit of adoption (Rogers, 2003). An innovation, in the context of organizational innovativeness, is used in the broadest sense of the word —it covers all types of innovations, pertains to all parts of the organization, and relates to all aspects of an organization's operations (Damanpour, 1991). Kanter (1983) considers an innovation any new idea, process, product, or service. Lewis and Seibold (1996) define an innovation as any new technology, idea, policy, program or product introduced to any potential adopter. A key component of the definition is that the innovation need not be actually new or new to others; it is important only that the would-be adopter perceives of item or practice as new (Pierce & Delbecq, 1977; Rogers, 2003; Thompson, 1965; Zaltman, Duncan, & Holbeck, 1973). Thus, an innovation need not be new to a population of organizations or to the public at large (Damanpour & Evan, 1984). It need only perceived of as new by the adopting entity.

Changes in accounting policies and practices are innovations, if they are new to the would-be adopters, regardless of how long they have been around or known to others (Tritschler, 1970). This is true for all innovations. It is particularly true for accounting

innovations, which are often slow to become diffused and adopted (Abernathy & Bouwens, 2005; Hicks, 1978). Certain financial reporting accounting innovations have existed for decades, yet remain unadopted (Hicks, 1978). Many managerial accounting innovations also remain undiffused and unadopted (Abernathy & Bouwens, 2005). The question is not how long the accounting policy has been in effect —it is whether the adopter perceives of the accounting policy as new (Rogers, 2003).

Accounting innovations come in two types: those requiring material changes to the content of the financial statements and those requiring material changes to the format of the statements (Hussein, 1981). Accounting innovations that require changes in content are usually more controversial than innovations requiring changes in format (Moontz, 1974). GASB 34 requires material changes in format and content. While it does require certain changes in format, it requires the addition of an unprecedented amount of financial information, which is a change in content. For these reasons, GASB 34 may be more controversial than accounting innovations requiring only changes to the financial statement format.

The concept of innovation must be distinguished from an invention. An innovation is usually imported from outside the organization and given local application (Johns, 1993). An invention is brought into being or developed within the organization (Mohr, 1969), whereas innovations are not usually developed from within (Mohr, 1969). Innovations do not even require creativity (Mohr, 1969). They are simply new ideas imported from the outside and applied by the organization (Mohr, 1969).

It is also helpful to distinguish between administrative and technical innovations. An administrative innovation involves the organization's formal structures and

administrative processes (Damanpour & Evan, 1984). Administrative innovations are directly related to the organization's managerial, support, and administrative functions, but only indirectly related to its core competencies and primary operations (Kimberly & Evanisko, 1981; Knight, 1967). Administrative innovations usually involve changes in policies and practices effecting human resource management, procurement, accounting and budgeting, and the structuring of tasks and rewards (Damanpour, 1987). Common examples of administrative innovations include just-in-time-inventory, zero-based budgeting, job design, reward systems, management-by-objectives, and flextime (Damanpour, 1987).

By contrast, a technical innovation involves the organization's core production processes, technologies, and basic work activities (Damanpour, 1991). Defined in its broadest sense, a technical innovation is any tool, technique, equipment, or technology, which extends the capabilities of the organization (Damanpour, 1987). Technical innovations are intended to change the way an organization produces its products or services. Technological innovations include things such as new computer technologies, asset management systems, automated inventory systems, bar coding, state-of-the art equipment (Damanpour, 1987).

The distinction between administrative and technical innovations is important because administrative innovations involve the organization's formal arrangements, whereas technical innovations involve the organization's technology. For this reason, administrative and technical innovations are not associated with the same predictor variables (Evan & Black, 1967; Kimberly & Evanisko, 1981). Research indicates that administrative innovations are positively associated with low levels of professionalism

and high levels of formalization and centralization, whereas technical innovations are associated with the opposite (Daft, 1978). Also, slack resources and occupational specialization tend to have stronger associations with administrative innovations than they have with technical innovations (Damanpour, 1987). Thus, important differences exist between administrative and technical innovations.

It is also important to distinguish between administrative and policy innovations. A policy innovation is a government action that requires formal legislative enactment (Berry, 1994). It is by nature value-laden and political, whereas an administrative innovation is value-free and apolitical (Berry, 1994). Administrative innovations do not generate the strong emotional responses that policy innovations often do. This makes administrative innovations less politically volatile (Berry, 1994). Also, administrative innovations tend to involve agency administrators, rather than elected officials (Berry, 1994). Agency administrators and career bureaucrats adopt and implement administrative innovations, whereas elected officials and political appointees adopt policy innovations (Berry, 1994). Administrative and policy innovations also differ in content. Administrative innovations do not involve moral judgments, whereas policy innovations do because of their redistributive nature (Berry, 1994). Administrative innovations are technical in nature, making them less political salient (Berry, 1994). This suggests that administrative and policy innovations differ in important respects (Berry, 1994).

Administrative and policy innovations also share certain characteristics. Political pressure, economic resources, and citizen demand are associated with both policy and administrative innovations (Erickson, Wright, & McIver, 1993; Goggin, Bowman, Lester, & O'Toole, 1990; Key, 1956; Mintrom, 2000; Mooney & Lee, 1995). Professional

affiliations and expertise are often associated with the adoption of administrative and policy innovations (Damanpour, 1987, 1991; Pierce & Delbecq, 1977). Both types of innovations are also diffused through networks, although they may be different policy and professional networks (Hull & Hage, 1982; Ross, 1974; Tushman, 1977). Thus, administrative and policy innovations share important similarities.

GASB 34 is an administrative innovation, not a technical innovation. While it is true that GASB 34 is somewhat technical in nature, it more closely resembles an administrative innovation because it involves the organization's accounting function, which is a support function, not a core competency. GASB 34 may employ certain technologies such as asset management systems and technical accounting applications, but it is not a technological tool itself. Accounting is an administrative function performed by agency administrators and career bureaucrats, not elected officials or political appointees. It involves the organization's formal structures and administrative processes, but it does not change the organization's basic processes, technologies or work activities. Therefore, GASB 34 is an administrative rather than a technical innovation.

GASB 34 is a change in accounting policy and, strictly speaking, could be a policy innovation, but GASB 34 is more of an administrative innovation than a policy innovation because it generates much less emotional and political upheaval. GASB 34 does not attempt to redistribute wealth, involve moral issues, or jeopardize elections. It is simply an administrative process that will be implemented by agency administrators. Elected officials may favor GASB 34 to gain social status or prestige, but agency administrators and career bureaucrats are more likely than elected or appointed officials to possess the specialized training in accounting needed to implement GASB 34. Thus,

agency administrators will implement GASB 34, not elected officials, because accounting is an administrative function. Agency administrators and elected officials will both hear about GASB 34 through their professional associations, but agency administrators will be more likely to possess favorable attitudes toward adoption because they are more likely to identify with the accounting profession and changes that improve financial accountability. For these reasons, GASB 34 is an administrative innovation, not a policy innovation.

The unit of analysis is the organization because the decision to adopt is made at the organizational level. Adoption will be conducted within the context of a specific organization (Downs & Mohr, 1976), not a single adopter. Thus, researchers cannot think in terms of a single adopter. They must consider the organization's propensity to adopt the innovation (Aiken & Alford, 1970; Downs & Mohr, 1976). Thus, the unit of analysis must be the organizational adopter (Downs & Mohr, 1976).

A useful way to examine the propensity of an organization to adopt an innovation is with a model of organizational innovativeness. Models of organizational innovativeness allow researchers to examine the characteristics of the adopters, the characteristics of the innovations, and influences from the external environment (Downs & Mohr, 1976; Shank & Copeland, 1973). We now turn our attention to a model of organizational innovativeness.

A Model of Organizational Innovativeness

The section on organizational innovativeness contains two parts. First, it describes Everett Rogers' model of organizational innovativeness. Second, it describes the adapted model of organizational innovativeness used in this study.

Rogers' Model of Organizational Innovativeness

The earliest innovation studies began in the 1940s as investigations into the diffusion and adoption of hybrid corn among Iowan farmers (see Ryan & Gross, 1943). The unit of analysis in these studies was the individual farmer (Rogers, 1995). Many of the diffusion studies that followed also examined the adoption patterns of individuals.

In 1947, Herbert Simon pointed out that single individuals rarely make decisions in organizations. He suggested that although final decisions in organizations often rest upon a single individual, the decision-making process can be traced to many individuals, comprising various units of the organization and to both formal and informal channels of communication (Simon, 1947). Shortly after Simon made this important revelation, researchers of organizational innovation began to study the diffusion and adoption patterns of organizations, as well as individuals (Burns & Stalker, 1968). Robert Mytinger's (1968) study of the adoption of new health programs in local health departments was one of the first studies in organizational innovativeness.

Early studies of organizational innovativeness helped identify patterns and characteristics of innovative organizations, which turned out to be similar, in many respects, to those of individuals (Rogers, 2003). The results of these studies have

resulted in fairly consistent findings regarding the organizational characteristics related to the adoption and implementation of innovations (Rogers, 2003). This knowledge has been used to build several frameworks of organizational innovativeness (see for example, Luder 1992; Rogers, 1995; Zaltman, Duncan & Holbeck, 1973)

The Rogers' model is intuitively appealing. It includes: (a) the characteristics of individual leaders and their attitudes toward change; (b) the organizational structure and its formal arrangements; and (c) the external environment and idea that the organization is an open system. The framework for Rogers' model is presented in Figure **2**.

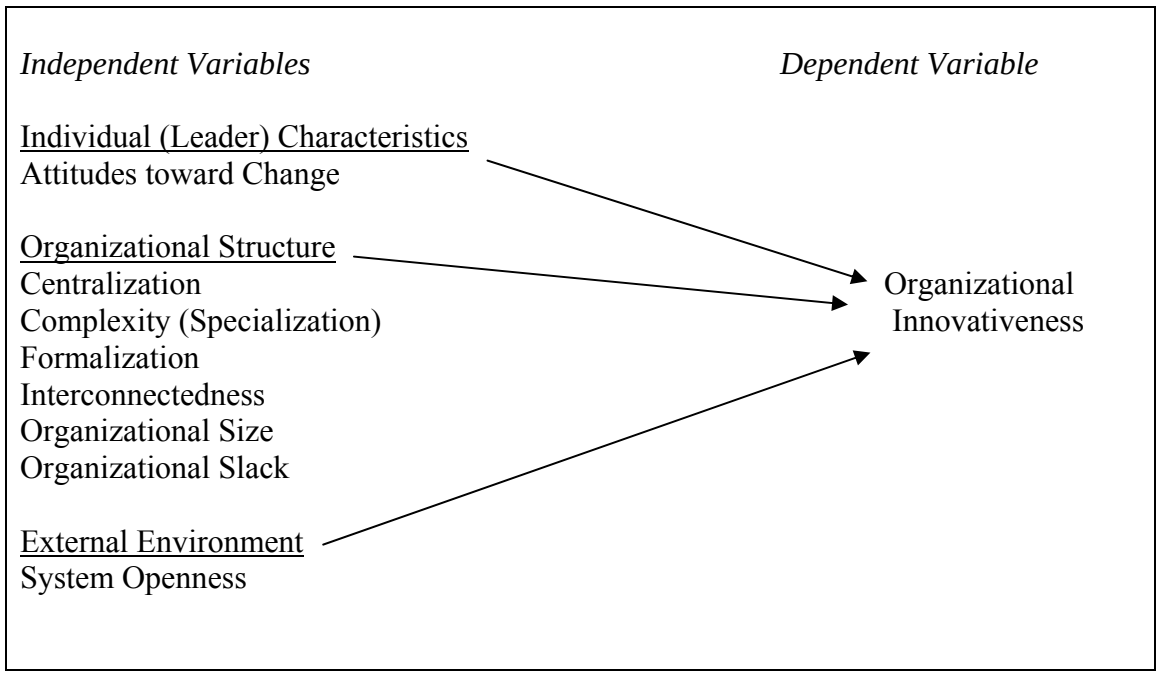

Figure 2: Rogers' Model of Organizational Innovativeness

Source: Everett M. Rogers (1995) *Diffusion of Innovations (4th ed.).*

In Rogers' model individual characteristics are intended to show how management and top decision-makers feel about change. It intends to reflect top management's propensity toward innovation and change. The Rogers' model recognizes that individuals and groups make decisions in organizations, but it assumes that the attitudes and beliefs of top management influence people within the organization.

Rogers' model uses several variables to proxy organizational structure. Centralization refers to the extent to which decisions, power, and control rest in the hands of relatively few individuals. The theory is that the more power is concentrated at the top by a few strong leaders, the more new ideas and innovations are restricted. Research shows that centralization is negatively associated with innovativeness. These findings support Victor Thompson's (1965) theory that decentralized organizational decision-making facilitates innovation while centralized decision-making inhibits innovation.

Complexity refers to degrees of occupational specialization or expertise. Occupational specialization is usually measured by the individual's formal knowledge or expertise. The Rogers' model asserts that occupational specialization causes individuals to appreciate innovations more, but it might make it more difficult for a group of experts to arrive at consensus. Research shows that a wide variety of specialists provides a broad base of knowledge and enhances the sharing of information and ideas (Kimberly & Evanisko, 1981; Aiken & Hage, 1971; Aiken, Bacharach, & French, 1980).

Formalization is the extent to which the organization relies on formal rules and regulations (Damanpour, 1991). The Rogers' model asserts that organizational rigidity and reliance on formal rules and regulations inhibits innovativeness. Research tends to support this assertion. Studies by Aiken and Hage (1971), Burns and Stalker (1968) and

Thompson (1965) show that formal rules and regulations are associated with a lack of innovativeness, while a study by Pierce and Delbecq (1977) shows that organizational flexibility and fewer rules and regulations are associated with openness and innovativeness.

Interconnectedness refers to the extent to which internal communications are integrated. It is the degree to which the units within an organization are connected by communication and interpersonal networks. The Rogers' model asserts that new ideas tend to flow more freely in an organization when the members are highly interconnected. Research supports this assertion. The studies of Hull and Hage (1982) and Kimberly and Evanisko (1981) show that internal communications are often associated with organizational innovativeness.

Organizational slack refers to the availability of excess resources. The Rogers' model asserts that innovativeness often requires slack resources, as it can be expensive to test and implement new innovations. Slack resources give the organization more flexibility to try new things by increasing the organization's ability to withstand the risk of loss, if the new idea fails. Research finds the availability of slack resources positively associated with innovativeness (Rosner, 1968). Slack resources make it easier for the organization to absorb the risk of loss, experiment with innovations, and implement new ideas (Rosner, 1968).

Organizational size refers to how large the organization is. Size is measured in a variety of ways. Some scholars measure size by annual revenues, other by number of full-time employees or market share. Regardless of how it is measured, organizational size is almost always positively associated with innovativeness (Mytinger, 1968);

however, the reasons for this are unclear. Some researchers believe that larger size facilitates innovativeness (Kimberly & Evanisko, 1981; Mohr, 1969). These scholars suggest that innovations in large organizations reach a critical mass quickly and this facilitates adoption. These scholars believe that large organizations are more able to implement innovations because they possess the fiscal, human, and technological resources necessary to do so (Kimberly & Evanisko, 1981). Other scholars believe that a larger organizational size necessitates innovativeness (Kimberly & Evanisko, 1981). They hypothesize that it may be necessary for large organizations to adopt innovations as a condition of survival (Kimberly & Evanisko, 1981). Researchers are uncertain whether larger size facilitates or necessitates adoption, but they agree that size is almost always positively associated with the adoption of innovations (Kimberly & Evanisko, 1981).

Interactions with the external environment refer to the degree to which the organization is an open system. The Rogers' model assumes that organizations that interact with the external environment are more inclined to change. The model asserts that interactions with the external environment facilitate the flow of information and inform the organization about changes that are necessary for survival. The Rogers' model adopts Katz and Kahn's (1966) theory that an organization is an open system and interacting with the external environment is a necessary condition of survival.

Research tends to support the assertion that interactions with the external environment are positively associated with innovativeness (Kaluzny et al., 1974; Tushman, 1977). Jervis (1975) finds that organizations which scan the external environment for threats and opportunities are more inclined to innovate. Miller and Friesen (1982) find that organizational members who engage in extra-organizational

activities are more innovative. Thus, member interactions with the external environment are positively associated with organizational innovativeness.

Scholars have conducted hundreds of studies using the Rogers' model. These studies consistently find that favorable leadership attitudes toward change create an organizational culture that is conducive to change (Damanpour, 1991; Dewar & Dutton, 1986). These studies find managerial attitudes which support change, provide coordination, and manage conflict are positively associated with organizational innovativeness (Daft & Becker, 1978; Kaluzny, Veney, Gentry, 1974; Zmud, 1982). Scholars find structural arrangements such as complexity, interconnectedness, organizational slack, and size positively associated with organizational innovativeness, while scholars find centralization and formalization negatively associated with change (Hull & Hage, 1982; Kaluzny et al., 1974; Zmud, 1982). These findings support the Rogers' model, making it a rich theoretical framework for research.

An Adapted Model of Organizational Innovativeness

This study uses an adapted version of Rogers' model of organizational innovativeness. The adapted model is presented below in Figure **3** and includes: (a) organizational culture; (b) organizational structure; and (c) the external environment.

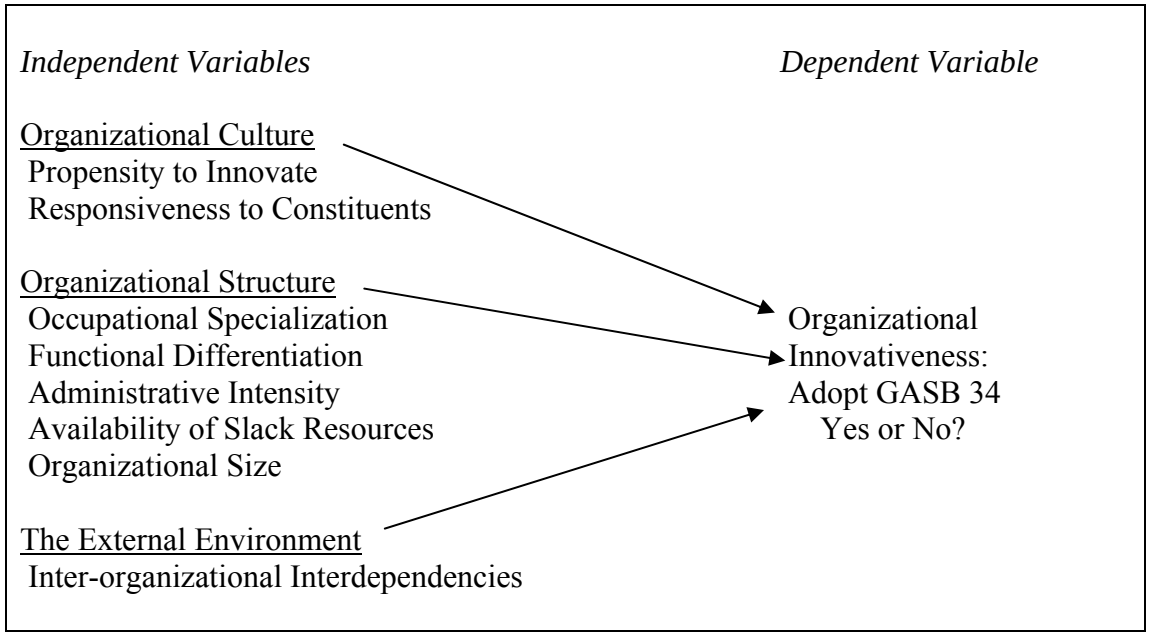

Figure 3: An Adapted Model of Organizational Innovativeness

Organizational Culture

Organizational culture is an organization's unique system of shared values and beliefs that give the organization its distinct character (Schein, 1993). Organizational culture includes norms and expectations of behavior, deeply held philosophies, and the habits and experiences of its members (Schein, 1993). Organization culture manifests itself through an organization's core values, methods of communication and decision-making, choices of organizational structure (e.g., centralization, formalization, occupational specialization, division of labor, span of control, etc.), the physical environment, symbols, and more (Schein, 1993). Member attitudes about change, new ideas, and continuous improvement often reflect an organization's culture.

A complete discussion of organizational culture is beyond the scope of this research. Therefore, this discussion is limited to: (a) the propensity to innovate, and (b) responsiveness to constituents.

Propensity to Innovate

In the context of organizational innovativeness, organizational culture refers to the collective attitudes of individuals toward change and innovation (March & Simon, 1958). In order for change to occur, organizational members must possess the propensity to change and innovate (Kaluzny et al., 1973; Hage & Dewar, 1973; Mohr, 1969). The propensity to innovate is often reflected in the use of state-of-the-art technologies, the application of best practices, the receipt of awards for excellence, and the quest for continuous improvement (Baldridge & Burnham, 1975; Blau & McKinley, 1979; Damanpour, 1991; Hull & Hage, 1982; Zmud, 1984). Research shows that the propensity to innovate is positively associated with the adoption of innovations (Pierce & Delbecq, 1977; Rogers & Shoemaker, 1971; Zaltman & Duncan, 1977).

The propensity to innovate is also positively associated with participation in joint programs (Pugh, Hickson, Hinings, & Turner, 1968, 1969). Pugh et al. find inter-organizational interdependencies and collaboration in joint ventures associated with organizational innovativeness. Aiken and Hage (1968, 1971) also finds participation in joint programs associated with organizational innovativeness. Aiken and Hage believe this relationship exists because inter-organizational relationships promote the exchange of ideas, resources, and activities, which in turn enhance innovation (Pierce & Delbecq,

1977). These findings support the proposition that an organizational culture, which favors change, best practices, continuous improvement, and participation in joint programs is positively associated with the adoption of innovations (Damanpour, 1987). The following hypothesis is derived from these findings:

H1: Pennsylvania local governments with a higher propensity to innovate will be more likely to adopt GASB 34 than local governments with a lower propensity to innovate.

Responsiveness to Constituents

Responsiveness to constituency groups is another feature of organizational culture, reflecting managerial attitudes towards innovation (Aiken & Hage, 1971). Responsiveness to constituents reflects the organization's willingness and ability to respond to the external environment (Aiken & Hage, 1971). Organizations must identify changes in the environment and adapt to such changes (Katz & Kahn, 1966). Organizations must use the information acquired from the external environment to correct deficiencies in service delivery, improve products, and respond to constituency demands (Katz & Kahn, 1966). Organizations with favorable attitudes toward innovations will create cultures that gather feedback and use this information to respond to constituency groups (Aiken & Hage, 1971). Innovative organizations will implement innovations that facilitate communication and feedback with constituency groups in the external environment (Katz & Kahn, 1966). Thus, the presence of innovative feedback

mechanisms and communication with the external environment indicate an organizational culture that supports change and innovation.

Research shows that organizational communication with the external environment through feedback mechanisms is positively associated with innovativeness (Aiken et al., 1980; Aiken & Hage, 1971; Kaluzny et al., 1974; Kimberly & Evanisko, 1981). This is true for various types of organizations (public and private), those operating in various industries (manufacturing and service), and for different types of innovations (radical and incremental; technical and administrative). These findings support the proposition organizations that gather feedback and communicate with the external environment will be more likely to adopt innovations (Damanpour, 1991).

The quality of a municipal website reflects a local government's responsiveness to constituents and its willingness and ability to communicate with the external environment (McNeal, Tolbert, Mossberger & Dotterweich, 2003). Local governments that make it easy for residents to communicate with them through the Internet and email are more innovative than organizations that do not facilitate and enhance communication with constituent groups through technology (McNeal et al., 2003). Websites are an innovative way to communicate with constituents and the external environment (McNeal et al., 2003). In this regard, a website is a sophisticated communication channel that reflects an organization's innovativeness and responsiveness to constituents. These findings suggest that organizations with well developed, quality websites will possess favorable attitudes towards innovation. The following hypothesis is derived from these findings:

H2: Pennsylvania local governments with a higher responsiveness to constituents will be more likely to adopt GASB 34 than local governments with a lower responsiveness to constituents.

Organizational Structure

Organizational structure refers to the formal organizing principles employed by the organization (Gulick & Urwick, 1937). French industrialist, Henri Fayol (1949), identified fourteen principles of management. Among Fayol's organizing principles were the centralization of authority, division of labor, chain of command, span of control, and unity of command. Managers make choices regarding organizing principles (e.g., centralization verses decentralization) and these choices affect the ability of the organization to change. Organizations that operate with fewer rules and regulations, flatter hierarchies, decentralized authority, and fewer layers of management are believed to be more adaptable to change than organizations with more rules and regulations, steeper hierarchies, centralized authority, and more layers of management (Lawrence & Lorsch, 1967). Managers can choose arrangements that facilitate change and innovativeness or vice versa. The choices managers make in structuring the organization affect the organization's ability to respond to threats and opportunities in the external environment and its ability to change (Lawrence & Lorsch, 1967).

An organization's formal structure affects its ability to adapt to change and implement innovations (Damanpour, 1991). Researchers of organizational innovativeness have examined how organizing principles are associated with the

willingness and ability to adopt innovations (Damanpour, 1991). The organizing principles receiving the most attention include centralization, occupational specialization, functional differentiation, formalization, administrative intensity, and slack resources (Damanpour, 1991). Centralization and formalization measure vertical relationships and are less statistically significant than occupational specialization and functional differentiation, which measure horizontal relationships (Hull & Hage, 1982; Kaluzny et al., 1974). Therefore, this discussion is limited to: (a) occupational specialization; (b) functional differentiation; (c) administrative intensity; (d) the availability of slack resources; and (e) organizational size.

Occupational Specialization

Occupational specialization is the degree to which members of the organization possess relative knowledge or expertise. Occupational specialization is usually measured by the member's formal educational level, range of occupational specialties, or occupational classification (Kimberly & Evanisko, 1981; Rogers, 2003).

Occupational specialization necessitates the division of labor. When workers are highly specialized they must be divided into subunits (Fayol, 1949). The presence of experts in various subunits increases the intellectual capital and technological knowledge of the organization. These members discuss ideas, techniques, and procedures, and this, in turn, leads to a wide exchange of ideas and innovations. Specialized members are more inclined to adopt innovations than organizational members with lower educational levels (Becker, 1970; Rogers & Shoemaker, 1971). Baldridge and Burnham (1975) also

find organizational members possessing advanced technical expertise and reward power more inclined to favorably influence the adoption of innovations. These findings support the proposition that organizations with highly specialized staff are positively associated with the adoption of innovations (Kimberly & Evanisko, 1981; Damanpour, 1987). The following hypothesis is derived from these findings:

H3: Pennsylvania local governments with members who possess higher occupational specialization will be more likely to adopt GASB 34 than local governments with members who are less specialized.

Functional Differentiation

Functional differentiation is the extent to which an organization is divided into different functional departments or subunits (Lawrence & Lorsch, 1967; Kimberly & Evanisko, 1981; Walker & Lorsch, 1968). Functional differentiation refers to the degree of organizational departmentalization by function (Lawrence & Lorsch, 1967).

Functional differentiation is positively associated with organizational innovativeness, but it is more strongly associated with the adoption of innovations than the implementation of innovations (Damanpour, 1987; Zaltman et al., 1973). Researchers believe functional differentiation creates multiple interest groups and competing demands, which positively influence the adoption of innovations, but hinder the implementation process (Damanpour, 1987; Kimberly & Evanisko, 1981; Lawrence & Lorsch, 1967; Zaltman et al., 1973). Researchers believe functional differentiation

also creates problems of coordination and control during implementation (Kimberly & Evanisko, 1981; Lawrence & Lorsch, 1967; Zaltman et al., 1973). Notwithstanding the problems that functional differentiation can create during the implementation process, research supports the proposition that functionally differentiated organizations are positively associated with the adoption of innovations (Damanpour, 1987; Lawrence & Lorsch, 1967; Zaltman et al., 1973). The following hypothesis is derived from these findings:

H4: Pennsylvania local governments with higher functional differentiation will be more likely to adopt GASB 34 than local governments with lower functional differentiation.

Administrative Intensity

Administrative intensity refers to the ratio of administrative staff to the total number of staff. Administrative intensity attempts to measure the strength of management to other staff (Blau & Schoenherr, 1971).

The adoption of innovations depends largely on the strength of organizational leaders and managerial support (Damanpour, 1987). Organizational managers and administrators often introduce innovations and then attempt to gain support for their innovations in a top-down direction (Daft, 1978; Damanpour, 1987; Evan, 1966). In this way, administrative intensity facilitates the adoption of innovations; however, its affects are strongest with administrative innovations (Blau & Schoenherr, 1971; Damanpour,

1987). These findings support the proposition that organizations with high levels of administrative intensity are positively associated with the adoption of innovations (Damanpour, 1987). The following hypothesis is derived from these findings:

H5: Pennsylvania local governments with higher administrative intensity will be more likely to adopt GASB 34 than local governments with lower administrative intensity.

Availability of Slack Resources

The availability of slack resources is the difference between what the organization receives in terms of revenue and what it pays out in terms of expenditures (Damanpour, 1987, 1991). Slack resources are calculated as the excess of revenues over expenditures (a deficit occurs when expenditures exceed revenues).

The availability of slack resources is relevant to the adoption of innovations because slack resources enable the organization to take risks and assume the risk of loss (Rosner, 1968). Slack resources also let the organization explore news ideas in advance of their actual need and bear the costs of implementation, if those innovations are ultimately adopted (Rosner, 1968). Research finds the relationship between the availability of slack resources and adoption strongest for innovations that require significant initial investments (Rosner, 1968). These findings support the proposition that organizations with more available slack resources are positively associated with the

adoption of innovations (Damanpour, 1987, 1991). The following hypothesis is derived from these findings:

H6: Pennsylvania local governments with higher available slack resources will be more likely to adopt GASB 34 than local governments with lower slack resources.

Organizational Size

Organization size refers to how large the organization is. Size can be measured in a variety of ways, including number of employees (a measure of human capital), total assets (a measure of fiscal resources), number of beds (a measure of capacity), and levels of production (a measure of volume; Damanpour, 1991; Kimberly & Evanisko, 1981).

Research frequently finds size positively associated with the adoption of innovations (Aiken & Hage, 1971; Kaluzny et al., 1974; Kim, 1980; Moch & Morse, 1977; Mytinger, 1968; Rosner, 1968); however, Mohr (1969) and Utterback (1974) say the relationship between size and adoption cannot be assumed. These findings support the proposition that large organizations are positively associated with the adoption of innovations (Damanpour, 1987, 1991). The following hypothesis is derived from these findings:

H7: Larger Pennsylvania local governments will be more likely to adopt GASB 34 than smaller local governments.

The discussion to this point has been concerned with intra-organizational elements such as organizational culture and structure. In fact, organizations are complex systems of norms and values that are inherently dependent upon their external environments for feedback and resources (Evan, 1966). As such, organizations are inherently embedded in systems of other organizations and a broader social system (Zaltman et al., 1973). Organizational theorists examining organizational innovativeness must recognize the interrelated nature of organizations and examine how the characteristics of the external environment influence organizational innovativeness (Zaltman et al., 1973). Thus, the next section discusses how the external environment affects organizational innovativeness.

The External Environment

General systems theory began in 1937 when biologist Ludwig von Bertalanffy introduced the theory at a University of Chicago seminar (Wren, 1979). Bertalanffy's theory contained the three following tenets: (a) the organization is a whole organism; (b) organisms strive for a steady state (equilibrium); (c) all systems are open organisms (they affect and are affected by their external environments). Bertalanffy did not publish his work until 1968, but his efforts were the beginning of what we now call general systems theory (Wren, 1979). Organization theorists such as Norbert Weiner, Kenneth Boulding, and Johnson, Kast & Rosenzweig built upon Bertalanffy's general systems theory (Wren, 1979); however, this discussion is limited to the contributions of Katz and Kahn (1966), who are widely recognized for their concept of an organization as an open system.

According to Katz and Kahn (1966), organizations are energetic input-output systems that rely on the external environment for inputs (energy and resources) and return outputs (products and services) to the external environment. Through this input-output relationship, organizations maintain themselves through a constant exchange made through a permeable boundary; and because organizations engage in a constant exchange of inputs and outputs with the external environment, they are by nature open systems (Katz & Kahn, 1966). Katz and Kahn's conceptualization is based directly on the early work of Bertalanffy and is concerned primarily with the organization's relationship with and its interdependence on its external environment.

The open systems model developed by Katz and Kahn (1966) contains a set of distinctive characteristics. First, all opens systems import energy and resources from the external environment and transform these resources into outputs. They repeat this pattern, giving their operations a cyclical effect. Second, in order to survive, inputs must exceed its outputs. The system must import more resources than it expends. It must maintain slack resources or a margin of safety. Third, the system must possess a mechanism to receive feedback from the external environment. The system must learn how it is doing so that it can correct its mistakes. An organization can make adjustments only to the information it receives. Therefore, feedback mechanisms are necessary for survival. This suggests also that as open systems mature, their patterns will become more specialized. Finally, an open system rejects the Scientific Management movement's notion that there is one best way (Katz & Kahn, 1966). Inherent in the open system's approach is the belief that there are many ways to achieve the same end.

Katz and Kahn (1966) believe the external environment is integral to the functioning of an organization. They say that, in order to survive, organizational members must recognize the importance of the relationship and interact with and respond to the external environment with acute awareness. Katz and Kahn suggest that organizations, which fail to recognize their open nature and the importance of feedback mechanisms, will perish. Following the same logic, Katz and Kahn say that organization theorists cannot fully understand an organization without studying the external environment in which the organization operates. They say that organization theorists who fail to recognize the open nature of organizations fail to understand the true nature of organizations and the forces that work upon them.

Based on Katz and Kahn's conceptualization of the organization's relationship with its external environment, open organizations are vulnerable to inter-organizational interdependencies. Boundary and inter-organizational relations problems confront all social systems, including organizations (Evan, 1966). Boundary relations are extremely complex and, for this reason, tend to be under-researched. However, organizational theorists must examine the effects that inter-organizational processes and relationships have on organizational innovativeness (Evan, 1966).

The research of Pugh, Hickson, Hinings, and Turner (1968, 1969) reveals a strong association between inter-organizational interdependencies and organizational innovativeness. Aiken and Hage (1968, 1971) find that participation in joint programs and the receipt of intergovernmental revenues are positively associated with organizational innovativeness. Aiken and Hage believe this relationship exists because inter-organizational relationships promote the exchange of ideas, resources, and

activities, which, in turn, enhance organizational innovativeness. These findings suggest that organizations with strong inter-organizational interdependencies are positively associated with the adoption of innovations (Pierce & Delbecq, 1977).

Two sources of inter-organizational interdependence are particularly relevant to Pennsylvania local governments and the decision to adopt GASB 34. They are: (a) debt financing, and (b) intergovernmental revenue. These inter-organizational interdependencies are discussed below.

Inter-organizational Interdependencies

Debt Financing

Debt financing is a source of inter-organizational interdependence. Organizations borrow money from financial institutions, and, in return, these parties demand accurate information revealing the organization's ability to repay the debt. Open organizations with inter-organizational interdependencies on debt financing must respond to the demands of investors, creditors, bond-raters, and investors by issuing financial statements that are prepared in accordance with GAAP. Investors and creditors provide loans while bond-raters publicly evaluate the ability of the organization to repay loans and bond issuances. Organizations with existing debt financing and those that anticipate the need for debt financing must accommodate the informational needs of investors, creditors, and bond-raters by issuing GAAP compliant financial statements.

Organizations with high levels of debt financing are often required to issue financial disclosures and statements prepared in accordance with GAAP to maximize bond ratings and minimize interest expense. Bond-raters and creditors look for GAAP-compliant information because only GAAP-compliant information facilitates an accurate assessment of the organization's ability to repay the debt. Organizations that can demonstrate the ability to repay debt with GAAP-compliant financial information will be rewarded with favorable bond ratings and credit terms. Organizations that force creditors and bond-raters to work in an environment of relative uncertainty by providing less information will pay for the added risk with increased interest rates and poorer bond ratings. Thus, inter-organizational interdependencies such as debt financing motivate organizations to adopt GASB 34. Following this logic, organizations with higher levels of debt financing will be more likely to adopt GASB 34 to meet the needs of creditors and bond-raters than organizations with lower levels of debt financing (Damanpour, 1991). The following hypothesis is derived from these findings:

H8: Pennsylvania local governments with higher debt financing will be more likely to adopt GASB 34 than local governments with lower debt financing.

Intergovernmental Revenue

Intergovernmental revenue is another source of inter-organizational interdependence. Local governments receive intergovernmental revenue from state and federal sources. In return, they spend the revenue in accordance with budgetary and

statutory guidelines. Providers of intergovernmental revenue do not necessarily mandate financial reporting practices, but they may require some form of accountability. Local governments can provide this accountability by complying with GAAP.

Researcher find organizational innovativeness positively associated with the receipt of intergovernmental revenue (Aiken & Hage, 1968, 1971; Pugh, Hickson, Hinings, & Turner, 1968, 1969). Aiken and Hage suggest that inter-organizational interdependencies are associated with innovativeness because these relationships promote the exchange of ideas, resources, and activities, which, in turn, enhance innovativeness. These findings suggest that organizations that receive more intergovernmental revenue will be more inclined to adopt innovations (Pierce & Delbecq, 1977). The following hypothesis is derived from these findings:

H9: Pennsylvania local governments with higher percentages of intergovernmental revenue will be more likely to adopt GASB 34 than local governments with lower percentages of intergovernmental revenue.

The discussion now turns to a review of the gaps in the literature and how this study fills those gaps.

The Gaps in the Literature

This section describes: (a) the gaps in GASB 34 literature; (b) the gaps in the accounting organizational innovativeness literature; and (c) how this study fills those gaps.

The Gaps in the GASB 34 Literature

There is an abundance of research about the adoption of policy and administrative innovations, including the adoption of accounting changes, but little is known about the adoption of GASB 34. Aside from a few articles (see for example, Klasny & Williams, 2000; Chase & Triggs, 2001), most of the GASB 34 literature appeared in two symposiums.

The first symposium appeared in *The Government Accountants Journal* in the spring of 2000. This is a practitioner journal and the GASB 3 4 articles tended to discuss the pros and cons of GASB 34 (Anthony & Newberry, 2000; Gomeau, 2000; Ives, 2000; Rose, 2000), ways to implement GASB 34 (Cote & Herron, 2000), and how people feel about its provisions (Freeman & Shoulders, 2000; Gomeau, 2000; Rose, 2000). Sacco (2000) suggested that GASB 34 was part of the Reinventing Government Movement because it wanted governments to issue financial statements similar to those issued by the private sector. Rose (2000) reminded us that the GFOA was vehemently opposed to GASB 34 in the beginning and initially encouraged its members to not comply with its provisions. This first symposium was largely instructional (see Cote & Herron, 2000,

who described how to implement GASB 34) and persuasive (see Ives, 2000, who argued that passing GASB 34 was the right thing to do).

The second symposium appeared in the fall 2001 edition of *Public Budgeting and Finance.* These articles were more academic in nature. They discussed the requirements, advantages and implications of GASB 34. James Chan (2001) discussed the implications of GASB 34 on public budgeting. Engstrom and Tidrick (2001) discussed its implications for auditing. Wilson and Kattelus (2001) discussed how much the bond-rating industry welcomed the changes because they would make assessing long-term debt obligations much easier for bond-rating companies. Beyond these two symposiums, little literature has been published regarding the accounting aspects of GASB 34.

The infrastructure provisions generated two dissertations —both were written by engineers and involved asset management or valuation systems. Baik (2003) developed a new asset valuation model. Dewan (2002) developed an asset management system that could be used by local governments to maintain roads and highway systems. These dissertations may have been helpful to practitioners and engineers, but they did little to further research in public administration, organizational innovativeness, or accounting.

Practitioners generated some of the GASB 34 literature, but this literature also discussed asset management systems. Dornan (2000, 2001) predicted that GASB 34 would result in better state and local government asset management programs. Hendricks (2001) suggested that the infrastructure requirements would generate a lot of work for accounting, engineering, and valuation professionals. Thus, the literature generated by practitioners also tended to discuss asset management systems.

There have been few empirical studies about GASB 34. The GASB interviewed a few state and local government leaders that implemented GASB 34 and posted these interviews on its website (see www.gasb.org). Many of these interviews were brief in nature and conducted with early adopters. They were mainly instructional and the interview format was not standardized. The GASB surveys were not scientific. They simply conveyed the experiences of various governments.

The GASB maintains a list on its website of municipalities that have adopted GASB 34. The list shows that hundreds of cities and several dozen smaller municipalities across the United States have implemented GASB 34. A review of the list indicates that Pennsylvania has a relatively low rate of adoption. At the time of this writing, the website indicated that only four Pennsylvania cities, six townships, and one town had adopted GASB 34. These numbers may be out of date. Still, these numbers indicate that the actual rate of adoption in Pennsylvania may be low.

In 2006, the GASB awarded research grants for projects related to GASB 34. The studies were supposed to be completed by December 2006 and the results of those studies were to be published in academic research journals shortly after that. To the best of my knowledge, the results of those studies have not been published as of this writing.

Few other organizations have attempted to study the adoption of GASB 34. The Texas Comptroller of Public Accounts conducted a study about GASB 34 by surveying 141 state government officials about the ways in which they recorded their infrastructure assets (Strayhorn, 2003). This study focused primarily on the implementation process. There have been few other studies about GASB 34.

The Gaps in the Accounting Innovativeness Literature

There is an abundance of research using the Rogers' model of organizational innovativeness. In fact, researchers have conducted thousands of studies, looking at the characteristics of adopters, the characteristics of innovations, the adoption-decision process, organizational innovativeness, the negative consequences of innovation, and more (Rogers, 2003). These studies have examined a variety of topics, including technological, administrative, and policy innovations (Rogers, 2003). Researchers have also looked at all sorts of innovations among and within local governments (Perry & Danziger, 1980; Perry & Kraemer, 1979). There have been thousands of studies from various fields of study. The fields of public administration and political science generated approximately 150 of these studies (Rogers, 2003). Only a handful of these studies came from the field of accounting (Shank & Copeland, 1973).

Accounting research utilizing the Rogers' model to look at the diffusion and adoption of accounting innovations began in the late 1960s and early 1970s. Willingham and Carmichael (1969) were one of the first to publish a study about the diffusion and adoption of accounting policies. They looked at the diffusion and adoption of inter-period tax allocations and the collective behavior of adopters and change agents. Although Willingham and Carmichael's findings were inconclusive, this was a groundbreaking study in that it was one of the first accounting studies to use the Rogers' model to examine the diffusion and adoption of accounting policy change.

Tritschler (1970) published another early diffusion and adoption study using the Rogers' model to examine accounting policy change, but his findings were also

inconclusive. Tritschler used the Rogers' model to look at the rate at which organizations adopted the Last-In-First-Out (LIFO) and First-In-First-Out (FIFO) inventory valuation methods. Tritschler was interested in seeing whether organizations adopted LIFO more often than FIFO to seek tax advantages. Tristchler found that firms did not necessarily adopt LIFO at higher rates than FIFO, despite its tax advantages. He concluded that economic factors could not predict the adoption of accounting policies.

The choice between LIFO and FIFO and Rogers' model remained a subject of interest and debate in the accounting innovation literature during the early 1970s. In 1971, Copeland and Shank conducted a study about the diffusion and adoption of LIFO, but their findings were also mixed. Nash (1971) suggested that perhaps factors not contained in the Rogers' model were more relevant to the adoption of accounting policies than those under inquiry. Brummet (1971) agreed that the Rogers' model seemed to have little application in accounting research.

Two years later Comiskey and Groves (1972) used the Rogers' model to look at why firms chose the installment method of recording sales over the other available accounting methods. They found that the rate at which firms adopted the installment method for tax purposes was not linear with respect to the number of previous adopters. These findings further contradicted the theoretical underpinnings of the Rogers' model in the minds of many accountants.

Despite its alleged shortcomings, accountants continued to use the Rogers' model to explore accounting topics, but not without discussing why the Rogers' model resulted in mixed findings and ways to improve the theoretical approach. Shank and Copeland (1973) suggested that although Rogers' model was logically appealing and well supported

in the sociology and economic literature, it did not seem to fit the accounting environment. Shank and Copeland suggested that perhaps accounting studies using the Rogers' model focused too much on the characteristics of the innovations and individual adopters, and not enough on the characteristics of the would-be adopting organizations.

It is true that many of the early accounting studies examined the characteristics of the innovations and individual adopters, rather than the characteristics of organizational adopters. This stream of research looked at whether the innovations were compatible with past practices, whether they provided relative advantage to the would-be adopters, and whether the innovations were relevant to the adopters' needs. These variables were often positively associated with the adoption of innovations in sociological research where the adopter was an individual, but the findings were mixed in accounting research where the adopter was an organization. Thus, it is also true that many of the early studies produced mixed findings, but these studies focused on the characteristics of the innovations and how individual adopters (not organizational adopters) perceived the characteristics of the accounting innovations.

Many of the early studies were also strongly focused on the rate of adoption (Hussein, 1981). These studies were important, but they failed to consider the possibility that adoption decisions were made in a broader context, which included the communication patterns of the adopters, the social and organization structure, socio-cultural factors such as religion and customs, anthropology, managerial attitudes, and the efforts of change agents (Hussein, 1981). Gerboth (1973) suggested that the early accounting studies treated the decision to adopt an innovation as if it were technical decision, when in fact it was a complex political decision. Horngren (1974) added that

accounting policy choice was much more related to organizational behavior, political action, and social change than accounting scholars had been willing to admit.

Considering these criticisms, Hicks (1978) attempted to look at how the perceptions of interest groups toward specific accounting innovations affected the adoption rates of those innovations. Hicks compared the perceptions of accounting academicians, investment analysts, CPAs, and financial executives toward thirty accounting innovations. He compared the extent to which each interest group perceived a need for the innovation and the rate at which the innovation was adopted. He found that interest groups with strong negative perceptions about the innovations were successful in impeding the adoption rate of those innovations while the perceptions of academicians did not appear to be influential in the adoption rate of innovations.

Hicks' (1978) research contributed to the field of accounting innovation by broadening the context of adoption decisions. Hicks filled an important gap in the accounting innovation literature by using Rogers' model to examine how special interest groups influenced the rate of adoption. Despite these strengths, Hicks' study failed to inform us about the characteristics of the adopting organizations, the adoption decision process, and the context in which the adoption decisions were made.

In 1981, Mohamed Hussein looked at changes in U.S. accounting standards as a social process. Using a blend of Rogers' and Zaltman et al.'s (1973) models of organization innovativeness, Hussein attempted to study the innovation process (how the decision was made), rather than the outcome (whether a firm adopted or not). Hussein revised the Zaltman et al. (1973) model to include fewer intra-organizational factors and more inter-organizational elements. The adapted model included variables measuring

knowledge and awareness (e.g., the efforts of change agents), managerial attitudes (e.g., the perceptions and values of adopters), and the power of bargaining coalitions and interest groups. Although Hussein's findings were mixed, he concluded that additional research was needed before the field of accounting could dismiss the Rogers' (1971) or Zaltman et al. (1973) models for being inappropriate for studying the nature of accounting policy change. He suggested also that researchers should build upon what has already been accomplished and avoid designing research approaches that put too much value on efficiency while ignoring the complexity of the phenomenon under inquiry.

In 1999, Malmi suggested that accountants needed to begin examining how accounting policies are diffused and adopted across a society or country. Malmi (1999) discussed Rogers' model, but decided to use Abrahamson's (1991) model of innovativeness instead. Malmi decided against Rogers' model because it required the unit of analysis to be the organization or individual adopter. Malmi wanted to look at the diffusion of accounting innovations across a society and wanted the unit of analysis to be an entire nation. Malmi used Abrahamson's (1991) model because it could look at whether an accounting innovation was: (a) adopted voluntarily by a trendsetter (a fashion); (b) adopted through imitation (a fad); (c) adopted through the imposition of a regulation (forced); or (d) adapted to market forces (an efficient choice).

After Malmi's (1999) brief discussion and dismissal of the Rogers' model, the Rogers' model did not appear in the accounting innovation literature for over a decade. Perera, McKinnon, and Harrison revived Rogers' model in 2003 to look at transfer pricing in the private sector. Perera et al. conducted a case study of the context surrounding the diffusion of transfer pricing. They used the Rogers' model, stating that it

was specifically advantageous for case study research involving the adoption and implementation process, because it allowed the researcher to make inquiries at the individual and organizational levels and during the adoption and implementation processes. Perera et al. said they also favored the Rogers' model because it included a component of organizational culture, which included managerial attitudes toward change.

Perera et al. said their research was informed by the Abrahamson (1991) and Malmi (1999) studies, but they used the Rogers' model because it could show that the practice of transfer pricing waxed and waned over the years, depending upon how managers perceived its characteristics at the time (e.g., relative advantage, compatibility, complexity, observability, triability, etc.). The Perera et al. study is one of the latest contributions using the Rogers' model to inform the field of accounting innovation.

As is evidenced by the paucity of research above, few scholars have used the Rogers' model to examine the adoption of accounting innovations. Even fewer scholars have used the Rogers' model to examine the adoption of accounting innovations in an organizational context. Scholars have researched the adoption of accounting innovations, but this research took a completely different direction. These studies started in the late 1960s, just as the studies using the Rogers' model did. Among the earliest studies were those of Archibald (1971), Bird (1969), Cushing (1969), Frishkoff (1970), Ijiri, Jaedicke, and Knight (1966), Lindhe (1963), Livingstone (1967), Shepard (1969), and Sorter, Becker, Archibald, and Beaver (1966). These studies firmly defined accounting policy change as an innovation, but they used a variety of theories and models. Ijiri and Knight applied a social-psychological model while Livingstone developed a learning set. Sorter, Becker, Archibald and Beaver developed the concept of a corporate personality and

scholars pursued this stream of research for more than a decade. These early studies in accounting innovation used a variety of theoretical models and attempted to explain why various accounting policies were adopted.

Some of the later studies included those of Ayres (1986) and Tung and Weygandt (1994). These studies looked at changes in disclosure practices, trends in accounting changes, and the comparability of financial information from period to period. These two studies are described below because, in many ways, they are similar to this study.

Ayres (1986) used a positive theory of accounting to predict the adoption of accounting policies. Positive accounting theory is a doctrine of economic choices that attempts to explain why different firms choose different accounting policies (Watts & Zimmerman, 1986). Positive accounting theory holds that organizations choose different accounting policies for reasons such as managerial preferences, the impact the policy has on the financial information, and in anticipation of investor reactions (Watts & Zimmerman, 1986). Ayres compared the adoption of voluntary and mandatory policies, where the adoption deadlines were phased-in (e.g., firms had a choice about when to adopt). Ayres used independent variables such as earnings before adoption, percentage of stock held by management, firm size, interest coverage, and dividend payout restrictions (e.g., characteristics of adopters) to predict the adoption of Statement of Financial Accounting Standards (SFAS) No. 52, which governs foreign currency translations. Ayres used logistic regression to predict a dichotomous dependent variable (e.g., early adopter or not?).

Tung and Weygandt (1994) attempted to predict the adoption of SFAS No. 87, which regulates pension accounting. Tung and Weygandt used a theory of political costs

to look at adopter characteristics (e.g., organization size, long-term debt, and interest coverage ratio). Their goal was to predict early adoption. Tung and Weygandt used a dichotomous dependent variable (e.g., early adopter or not?) and the natural log of sales to proxy organizational size. They hypothesized that small firms would be early adopters, but the hypothesis was not supported. Tung and Weygandt's found that large firms were more often early adopters. This finding was consistent with the Rogers' literature, which has always suggested that large firms are early adopters. Tung and Weygandt's study contributed to our knowledge of accounting innovations, but it also showed that a theory of political costs could not sufficiently explain the adoption of accounting innovations.

The Ayres (1986) and Tung and Weygandt (1994) studies are important contributions to our knowledge about the adoption of accounting innovations in the private sector. They employ a variety of independent variables to proxy the characteristics of would-be adopters and attempt to predict a dichotomous dependent variable (early adopter or not?). They use accounting and political theories to form hypotheses, although the hypotheses differ somewhat from the hypotheses that would be developed using Rogers' model. The Ayres (1986) and Tung and Weygandt (1994) studies contribute to our knowledge of private organizations, but they do little to inform our knowledge of the adoption decisions made by public organizations. Another stream of research involving accounting disclosure and policy covers this area.

The stream of research that looks at the accounting practices of public organizations and why these organizations choose the accounting policies they do is often called Behavioral Research in Government and Nonprofit Accounting (BRIGNA). Rita

Cheng (1994) published a comprehensive review of the BRIGNA research, which uses a variety of political and economic models to predict government accounting policy choice. The BRIGNA research includes over 27 studies of public accounting choice and disclosure and uses a variety of rational and public choice models. These studies examine the factors that affect the accounting practices of state and local governments and nonprofit organizations.

The BRIGNA studies make an important contribution to the field of government accounting policy choice. A review of all 27 studies is beyond the scope of this discussion; however, a few of the BRIGNA studies are described below. The first two look at the accounting practices of local governments; the last few examine the adoption of accounting policies in state governments. These particular studies have been selected because they are most relevant to this study.

Ingram and DeJong (1987) used a theory of the economic incentives of local government managers to examine the financial disclosure decisions of local governments. Ingram and DeJong used independent variables such as population, population growth, debt financing, state and federal aid, and state policies regarding compliance with GAAP to predict compliance with GAAP. Using logistic regression to predict a dichotomous dependent variable (GAAP-compliant or not?), Ingram and DeJong found that state regulations regarding compliance with GAAP seem to have little impact on local government financial reporting practices.

Evans and Patton (1983) looked at why local governments participate in the Municipal Finance Officer Association's (MFOA) Certificate of Conformance Program (CCP). They used independent variables such as whether the states required local

governments to comply with GAAP, prior participation in the CCP, municipal size measured in terms of population, and long-term debt financing to predict a dichotomous dependent variable (participate or not?). Their findings suggest that local governments use the CCP and GAAP-compliance to signal favorable characteristics such as quality, expertise, productivity, and best practices. They concluded that local governments signaled the quality of their activities with financial statements the same way citizens, lenders, and key stakeholders monitored the activities of local governments by using such statements (Evans & Patton, 1978). Evans and Patton (1983) held that although the associations were not strong, their model did predict participation in the CCP.

The BRIGNA studies also examined the adoption of accounting policies among state governments. Baber and Sen (1984) used interest group theory to examine compliance with GAAP and found a positive relationship between high levels of debt financing and GAAP-compliant financial reporting among state governments. Ingram (1984) used a theory of economic incentives to test the financial reporting practices of state governments. Using logistic regression to predict a dichotomous dependent variable (GAAP-compliant or not?), Ingram found independent variables such as the receipt of intergovernmental revenue, long-term debt financing, urbanization, income per capita, revenue per capita, and administrator salaries positively related to GAAP-compliant financial reporting.

Carpenter (1991) used a theory of political competition to examine the financial reporting practices of state governments. She used a theory of competing demands for financial information and logistic regression to predict a dichotomous dependent variable (GAAP-compliant or not). Carpenter found that state governments with high levels of

debt financing were positively associated with GAAP-compliant reporting. She speculated that governments with high levels of long-term debt issue GAAP-compliant financial statements to receive favorable bond ratings.

The studies in the BRIGNA stream of research are interesting and insightful, but they do not answer the research question addressed in this study because they use political and economical theories to examine the adoption of accounting policies, rather than a model of organizational innovativeness to examine the adoption of an accounting innovation. They advance the fields of governmental accounting and public administration, but they do little to further research in organizational theory or organizational innovativeness. That is, they do little to show how organizational culture, organizational structure, and inter-organizational interdependencies are associated with the adoption of accounting innovations. As a result, the BRIGNA studies help us understand the adoption of certain accounting practices in certain contexts, but they do not help us understand how organizational factors are associated with the adoption of accounting innovations.

How This Study Fills Those Gaps

Rogers' model of organizational innovativeness is a useful, but underutilized tool for studying the adoption of accounting innovations. Scholars can use Rogers' model of organizational innovativeness to examine almost any accounting policy or change (Comiskey & Groves, 1972; Copeland & Shank, 1971; Tritschler, 1970; Willingham &

Carmichael, 1969), yet they rarely do so. Rogers' model is not inappropriate for accounting topics; it is just not widely used by scholars studying government accounting.

Many accounting scholars avoid Rogers' model for examining accounting innovations because they do not believe it applies to accounting phenomenon; however, this claim is debatable and not shared by everyone. Scholars such as Hussein (1981), Malmi (1999), and Perera et al. (2003) believe the Rogers' model is ideal for examining the diffusion and adoption of accounting innovations. Whether the Rogers' model is appropriate for studying the adoption of accounting innovations will probably remain a subject of debate. The Rogers' model clearly contains a well-developed framework for researching organizational innovativeness and the adoption of administrative innovations such as accounting policies. For this reason, the Rogers' model is used in this study.

Chapter 2

METHOD

This section describes how this research was conducted. It includes five sections: (a) the importance of the study; (b) the research question; (c) population and sampling; (d) the dependent and independent variables; and (e) data collection and method of analysis.

The Importance of the Study

GASB 34 is arguably the most important change in government accounting history, yet there have been few studies about the adoption of GASB 34 across any governments or geographical area. This study attempts to identify the organizational determinants of adoption of GASB 34 across a sample of Pennsylvania local governments. The study uses logistic regression to predict adoption. The research question driving this study is: *Can a model of organizational innovativeness identify the determinants of adoption of GASB 34 among Pennsylvania's local governments*? The following discussion describes the methods used to answer this question.

The Population and Sampling

The population of Pennsylvania local governments is finite. It consists of 2,632 municipal units: 2,565 local governments and 67 counties. The 2,565 local governments consist of: 56 cities, one town, 1,547 townships, and 962 boroughs.

Local governments are required to adopt the provisions of GASB 34 based on their total annual revenues. Therefore, the population was first stratified by total revenue (e.g., phase), then alphabetically by county and then municipality. Twenty-eight (28) of the local governments had annual total revenues exceeding $100 million (Phase 1 governments). The Phase 1 local governments are required to adopt the prospective provisions by December 31, 2002 (all Pennsylvania local governments use a calendar yearend). One hundred seventy four (174) of the local governments had revenue between $10 and $100 million (Phase 2 governments). The Phase 2 local governments are required to adopt the prospective provisions by December 31, 2003. The remaining 2,430 local governments had revenue under $10 million (Phase 3 governments). The Phase 3 local governments are required to adopt the prospective provisions by December 31, 2003.

After the population was stratified by size (e.g., total revenue or phase), the appropriate sample size was determined for each stratification. The sample size of each phase was determined using statistical methods for finite populations. The populations of the Phase 1 and 2 governments were very small, so 100% of the Phase 1 and 2 governments were selected. All 28 of the Phase 1 governments and all 174 of the Phase 2 governments were selected for the study.

The population for the Phase 3 governments was fairly large and also finite (2,430 cases), so the sample size for the Phase 3 governments was determined using statistical techniques for finite populations. The criteria used to determine the sample size was a 5% level of precision and 95% confidence level. The statistical techniques indicated that a sample size of at least 300 observations was appropriate for the Phase 3 governments.

Now that the total sample size was determined, the sample size was evaluated to determine if it was large enough for the planned method of data analysis, which was logistic regression. Altogether, the sample consisted of 28 Phase 1 governments, 174 Phase 2 governments, and 300 Phase 3 governments, or 506 total local governments (28 + 174 + 300). Stevens (2002) recommends at least 15 observations for each independent variable when using logistic regression. This study employed nine independent variables, indicating that at least 135 observations were needed (9 independent variables x 15 observations per variable). The sample size for this study was 506 observations, satisfying Stevens' criterion.

With the sample size determined, the sample observations for the Phase 3 governments were selected from the population using systematic random sampling techniques. The first observation from the Phase 3 population was selected by generating a random number within the value range of the population size. The remaining observations were selected in equal intervals, until the entire sample for the Phase 3 governments was selected. In other words, the observations were selected by generating a random number to start the selection, and then choosing every N^{th} observation until the total sample was selected. A summary of the sample is shown in Table **1**.

Table 1: A Summary of the Sample

Phase	Total Revenue	Adoption Deadline	Population			Sample
			Municipal	County	Total	Total
Phase 1	+ $100 million	Dec 31, 2002	8	20	28	28
Phase 2	$10-100 million	Dec 31, 2003	139	35	174	174
Phase 3	- $10 million	Dec 31, 2003	2,418	12	2,430	304
Total			2,565	67	2,632	506

The Dependent and Independent Variables

The Dependent Variable

The dependent variable is dichotomous or binary. It is measured based on whether the local government has adopted GASB 34 or not (yes or no).

The Independent Variables

There are nine independent variables grouped into the three organizational components: (a) organizational culture; (b) organizational structure; and (c) the external environment. As previously mentioned, the independent variables are drawn from an adapted version of Rogers' model of organizational innovativeness (see Figure 3 – An Adapted Model of Organizational Innovativeness). The independent variables and the

indicators used to measure the variables are summarized in Figure **4**. A detailed description of the independent variables is presented below.

Independent Variables	*Indicators*
Organizational Culture	Organizational Culture
Propensity to Innovate	Innovativeness Index
Responsiveness to Constituents	Website Disclosure Index
Organizational Structure	Organizational Structure
Occupational Specialization	Degree of Occupational Specialization
Functional Differentiation	Number of Functional Departments
Administrative Intensity	Number of Administrators
Availability of Slack Resources	Excess (Deficit) Revenue/Total Revenue
Organizational Size	Log of Revenue
The External Environment	The External Environment
Debt Financing	Debt per Capita
Intergovernmental Revenue	Percentage of Intergovernmental Revenue

Figure 4: The Independent Variables

Organizational Culture

Organizational culture contains two independent variables: (a) the propensity to innovate, and (b) responsiveness to constituents.

Propensity to Innovate

The propensity to innovate is an organization's tendency to innovate in various areas. To measure the propensity to innovate, an innovation index was compiled to measure the number of innovative practices and the number of awards the organization had engaged in and earned between 1997 and 2005. The innovative practices and awards used to compile the innovation index included participation in a Council of Government (COG), participation in the DCED's Shared Municipal Services Program (SMSP), participation in Penn DOT's Agility Program, and the receipt of a DCED Annual Award for Excellence. These programs and practices are described in detail below.

COGs are cooperative organizations formed by a group of local governments to accomplish a set of public services (Pierce & Delbecq, 1977). They exemplify public-public inter-organizational partnerships. They are also administrative innovations, in that they combine the administrative resources of several organizations to achieve economies of scale and efficiency in service delivery (Pierce & Delbecq, 1977). Many of Pennsylvania's small, rural local governments lack the fiscal or administrative resources needed to provide public goods and services on their own. For this reason, many small, rural Pennsylvania local governments participate in COGs to improve service delivery. Local governments that participate in COGs are more innovative than local governments that do not participate in COGs (Pierce & Delbecq, 1977).

The DCED's SMSP and the Pennsylvania Department of Transportation's (Penn DOT) Agility Program are other joint programs. The DCED's Governor's Center for Local Government Services sponsors the SMSP, which strives to promote cooperation

between municipal governments for the purpose of improving efficiency and effectiveness at the local level. To promote the program, the DCED awards grants to participating local governments. These grants can be applied toward the establishment of a COG or to defray the cost of a service, providing the service involves local government cooperation.

Penn DOT holds itself out as a Total Quality organization, which seeks to earn the Malcolm Baldridge Award. As such, Penn DOT prides itself on its ability to create innovative programs. Penn DOT designed a program to maximize innovation in local governments: The Penn DOT Agility Program is a state-local-nonprofit program designed to improve the delivery of products and services through the sharing of human capital and equipment. It uses partnerships between Penn DOT, local governments, and other public organizations to provide products and services without the exchange of money (instead of money they exchange services). Local governments voluntarily participate in the Agility Program to apply innovations and best practices.

The DCED's Center for Local Government Services issues annually the Governor's Awards for Local Government Excellence to dozens of local governments and municipal employees for adopting and implementing "best practices" in a variety of service delivery and problem-solving areas. The categories for the awards include building community partnerships, responding to adversity, fiscal accountability, best management practices, innovative planning, and sound land use. Most of the awards are given to organizations, but awards are also granted to exemplary individuals within these organizations.

Local governments that participate in cooperative programs such as COGs, the DCED's SMSP Program, and Penn DOT's Agility Program are more innovative than local governments that do not engage in such programs. Participation in innovative inter-organizational programs indicates local governments that believe collaboration among small organizations can result in economies of scale (Pierce & Delbecq, 1977). Local governments that receive awards for excellence in service delivery are also highly innovative because these governments strive for continuous improvement.

Research shows that local governments with favorable attitudes towards innovations are most likely to adopt new innovations (Cyert & March, 1963; Daft & Becker, 1978; Damanpour, 1987; Dewar & Dutton, 1986; Hage & Dewar, 1973; Kaluzny et al., 1974; Kimberly & Evanisko, 1981; Mohr, 1969; Rogers, 2003). The receipt of awards is also highly associated with the propensity to innovate (Baldridge & Burnham, 1975; Blau & McKinley, 1979; Daft & Becker, 1978; Damanpour, 1991; Ettlie, Bridges, & O'Keefe, 1984; Hull & Hage, 1982).

This study developed and used an index that counted the number of awards received by the local government and its members, plus the number of innovative programs the organization engaged in since 1997. The formula for calculating the index was as follows: the number of memberships in a COG between 1997 and 2005, plus the number of SMSP grants received between 1997 and 2005, plus the number of SMSP awards for excellent received between 1997 and 2005, plus the number of Penn Dot Agility contracts entered into between 1997 and 2005. The index served as a proxy for the organization's propensity to innovate. Local governments with higher innovation indices are expected to be more innovative than organizations with lower indices.

Following this logic, Pennsylvania local governments with higher indices will be more likely to adopt GASB 34 than local governments with lower indices.

Responsiveness to Constituents

The quality of a municipal website reflects a local government's responsiveness to constituents (McNeal, Tolbert, Mossberger & Dotterweich, 2003). Local governments that make it easy for residents to communicate with them through the Internet and email are more innovative than organizations that do not facilitate communication with constituent groups through high technology. Websites are an innovative way to communicate with constituents and the external environment. In this regard, a website is a sophisticated communication channel that reflects the organization's culture and responsiveness to constituents. A well-developed, quality, website also indicates favorable attitudes towards innovation.

This study developed and used a Website Disclosure Index to rank the quality of a local government's website in three areas: (a) contact information and email access; (b) meeting calendars and minutes; and (c) financial disclosures. Each local government was awarded a score in each of the three areas. The scores in each area were then summated to arrive at a total score. A copy of the Website Disclosure Index is included as Appendix A.

Organizations with the highest scores provided the contact information of most members and made it possible for the public to contact these members via email. Higher-ranking organizations also provided the dates of upcoming meetings and gave the public

access to archived minutes via the website. These organizations also made current and archived financial information such as budgets and annual reports accessible to the public via the website. Local governments with lower ranking scores either did not have websites or failed to provide certain aspects of this information on their websites.

Local governments that facilitate communication with the public via the Internet and email are more arguably innovative than local governments that do not use modern communication channels to communicate with the public. Following this logic, Pennsylvania local governments with higher-ranking websites will be more likely to adopt GASB 34 than local governments with lower ranking websites.

Organizational Structure

Organizational structure contains five independent variables: (a) occupational specialization; (b) functional differentiation; (c) administrative intensity; (d) the availability of slack resources; and (e) organizational size.

Occupational Specialization

Staff possessing specialized skills and training in the area of financial reporting are more likely to adopt a financial reporting innovation than staff lacking specialized skills and training in accounting because highly specialized staff possess the needed expert technical knowledge and abilities, which make it easier to adopt innovative

accounting practices (Aiken & Hage, 1971; Kimberly & Evanisko, 1981). Occupational titles are a fair measure of occupational specialization.

Pennsylvania local government accounting and finance staff tend to possess titles such as controller, finance director, municipal manager, and municipal secretary. Municipal staff with titles such as controller and finance director are assumed to possess more specialized skills and knowledge in financial reporting than staff with titles such as administrative clerk, municipal manager, and municipal secretary. The highest ranking finance staff in each local government was ranked according to his or her title. Controllers were given a score of 1; finance directors were given a score of 2, chief administrators were given scores of 3; mangers were given scores of 4; and municipal secretaries were given scores of 5. Occupational titles served as the proxy for occupational specialization in financial reporting. Following this logic, Pennsylvania local governments with more specialized accounting and finance staff will be more likely to adopt GASB 34 than local governments with less specialized staff.

Functional Differentiation

Functional differentiation is the extent to which an organization is divided into different functional units (Lawrence & Lorsch, 1967). The number of different functional departments has been used as a proxy for functional differentiation in prior research (Lawrence & Lorsch, 1967), so the number of functional departments is used in this study, as well. Research shows that functional differentiation is positively associated with the adoption of innovations (Damanpour, 1987). Researchers believe functional

differentiation facilitates the sharing of ideas, information, and innovations (Damanpour, 1987; Zaltman et al., 1973). Following this logic, Pennsylvania local governments with higher levels of functional differentiation will be more likely to adopt GASB 34 than local governments with fewer levels of functional differentiation.

Administrative Intensity

Administrative intensity is the number of administrators in a local government. Research indicates that administrative intensity is strongly associated with the adoption of administrative innovations (Blau & Schoenherr, 1971; Damanpour, 1987), as administrators are the first to introduce innovations to the workplace and to seek support for their innovations (Daft, 1978; Damanpour, 1987; Evan, 1966). A count of the number of administrators in each local government serves as a proxy for administrative intensity. Pennsylvania local governments with higher levels of administrative intensity will be more likely to adopt GASB 34 than local governments with lower levels of administrative intensity.

Availability of Slack Resources

The availability of slack resources is the excess revenue available to adopt innovations. Local governments may wish to adopt an innovation but cannot do so because they lack the resources needed to implement it. Research shows that the availability of slack resources is positively associated with the adoption and

implementation of innovations (Baldridge & Burnham, 1975; Berry, 1994; Bingham, 1976; Feller & Menzel, 1978; Rogers, 2003; Rosner, 1968). This study used excess (deficit) revenue divided by total revenue as an indicator of available slack resources. This variable has been used in other research and is a fair measure of the availability of slack resources (Rosner, 1968). Pennsylvania local governments with more available slack resources will be more likely to adopt GASB 34 than local governments with less available slack resources.

Organizational Size

Research consistently finds organizational size positively associated with the adoption of innovations. Large organizations are more innovative than small organizations (Mahler & Rogers, 1999; Meyer & Goes, 1988; Mytinger, 1968). Studies have used various measures of size, including the number of staff, full-time equivalents, total revenue, log of revenue, and total assets. This study first attempted to use total revenue to approximate organizational size, but found this variable to contain too much variability to be a reliable predictor of adoption. Independent variables with high variability can distort a logistics regression. Therefore, the study transformed total revenue to the log of revenue and used it to approximate organizational size. The rationale for using log of revenue and the transformation process are explained in detail in the next chapter. Consistent with the existing research, Pennsylvania local governments with a higher log of revenue are expected to be more likely to adopt GASB 34 than local governments with a lower log of revenue.

The External Environment

The external environment contains two independent variables: (a) debt financing, and (b) intergovernmental revenue.

Debt Financing

Local governments must meet the demands of key stakeholders. The primary users of local government financial statements are bond-raters and creditors (Ingram, 1984). These users prefer financial information that is prepared in accordance with GAAP because GAAP-compliant information is comparable across organizations and time horizons (Ingram, 1984). GAAP-compliant information also enhances transparency and accountability (Ingram, 1984). Users of financial information need GAAP-compliant information to accurately assess an organization's financial viability (Ingram, 1984). Bond-raters and creditors may entice local governments into adopting GASB 34 with lower interest rates and favorable bond ratings (Ingram, 1984).

This study uses debt per capita to measure debt financing because it accounts for organizational size. Other measures of debt were considered, but not used. Debt in absolute dollars failed to reflect the amount borrowed relative to organizational size. Total debt as a percentage of total revenue failed to reflect organizational size because some local governments borrow many times more than their annual revenues while other local governments do not borrow at all. The best measure of debt financing is total debt over total assets because total assets are the collateral for debt financing, but total assets were not available for Pennsylvania's local governments, as they had not yet adopted

GASB 34. Therefore, the best proxy of debt financing is debt per capita. It shows debt relative to organizational size and reflects the burden of taxpayers, who are ultimately responsible for meeting the debt service. Pennsylvania local governments with higher levels of debt financing will be more likely to adopt GASB 34 than local governments with lower levels of debt.

Intergovernmental Revenue

Intergovernmental revenue reflects the relative amount of revenue obtained from outside sources that does not need to be repaid. Intergovernmental revenue was calculated by dividing total intergovernmental revenue by total annual revenue. The receipt of intergovernmental revenue has been positively associated with organizational innovativeness in other research (Ingram, 1984). State and federal governments provide intergovernmental revenue to local governments; they also regulate the way in which the funds can be used. Recipients must meet the financial reporting and auditing standards of grantors (Ingram, 1984). If grantors require GAAP-compliant information, local governments will have to adopt GASB 34 to continue receiving intergovernmental funds. Following this logic, Pennsylvania local governments with higher percentages of intergovernmental revenue will be more likely to adopt GASB 34 than local governments with lower percentages of intergovernmental revenue.

Data Collection and Method of Analysis

Data Collection

Most of the data for this study is available from archival documents filed by the local governments and maintained as public records by the DCED. Data not available from the DCED is available through archival data maintained by the State Data Center. Data unavailable from archival records is obtained from the local governments directly. The only item not available from archival sources is whether the local governments had adopted GASB 34 or not. Thus, a brief questionnaire is sent to the local governments, asking if they had adopted GASB 34. A copy of the questionnaire is included as Appendix B.

Method of Analysis

The data are collected for nine independent variables and a dichotomous dependent variable. The nature of the data indicated that a binary logistic regression is the appropriate manner of data analysis. Logistic regression is most appropriate when a study seeks to identify a combination of independent variables that predict membership in a particular group. Logistic regression is one of the few methods that can be used when the dependent variable is binary and discrete, as it is in this study (e.g., adopt or not?). Logistic regression is also appropriate when the independent variables consist primarily of ratio data, as they do here. All these factors indicated that logistic regression is the most appropriate method of analysis for this study.

A logistic regression analysis is fairly similar to a multiple regression, except that the logistic regression computes a regression equation that predicts the probability of a binary outcome (e.g., adopt or not?). Thus, the result of a logistic regression is a probability, whose output is a value with a range from zero to one. A logistic regression is also usually analyzed based on three output components: (a) the chi-square goodness-of-fit test; (b) the classification table for the dependent variable; and (c) the table of coefficients for the independent variables included in the model. These output components are utilized in this study.

The chi-square goodness-of-fit test produces a model that shows the independent variables that best predict the dependent variable. The chi-square goodness-of-fit test indicates the extent to which the independent variables in the model correctly classify the observations in the sample. To analyze the chi-square goodness-of-fit test, the actual values of the observations are compared with the predicted values on the dependent variable. The comparison of the actual and predicted values is accomplished by using the following measures to assess the goodness-of-fit: (a) the percentage of correctly classified observations for the independent variables in the model (a model that perfectly classifies the observations has a value of 1.0); (b) the -2 Log Likelihood (the lower the -2 Log Likelihood value the better the model is at predicting group membership; a model with perfect fit has a -2 Log Likelihood value of zero); (c) the goodness-of-fit estimation (the value should be similar to the -2 Log Likelihood value); (d) the chi-square measure for the overall model (a model that is able to significantly predict group membership will have a value close to 1.0); and (e) the Cox & Snell R Square and Nagelkerke R Square statistics. The Cox & Snell and Naglkerke are pseudo R Square values that estimate the

degree of variability in the dependent variable accounted for by all the independent variables in the model (a model fits best when the Cox & Snell R Square and Nagelkerke R Square values are high). More about how the findings are analyzed is presented in the next chapter.

A classification table for the dependent variable is also used to analyze the regression results. A classification table compares the actual values of the observations with the predicted values on the dependent variable. It does this by computing the probabilities of the sample observations and classifying them into the two possible categories (adopt yes or no?) based on their probabilities. The table is set up to classify observations with probabilities greater than 50% as adopters and observations with probabilities less than 50% as non-adopters. The classification table also indicates the extent to which the model can accurately classify the observations. Since a logistic regression always produces a probability, a classification table that can accurately classify adopters has a value close to 1.0.

The table of regression coefficients is also analyzed. The table of regression coefficients provides an array of information (B, standard error (S.E.), degrees of freedom, level of significance) and two test statistics (Wald and Exp (B)). The table is interpreted in a manner similar to that of multiple regression analysis, except the analysis of the logistic regression uses the Wald statistic instead of the t-test statistic. The Wald statistic is a measure of statistical significance, which indicates the degree to which each independent variable contributed to the model. The Exp (B) statistic indicates the odds ratio for each independent variable. The Exp (B) statistic reflects the increase in the odds

of being classified in a group when the independent variable increased by 1.0. The table of regression coefficients provides several ways to interpret the findings.

The data is analyzed using a binary logistic regression. The logistic regression poses additional obstacles such as having a large enough sample size to build and test a predictive model, problems created by missing data, distortions caused by errors and outliers, and redundancy caused by potential multicollinearity. These concerns are discussed in the next chapter, as they are encountered.

Chapter 3

FINDINGS

This section presents the statistical findings. It contains four subsections: (a) descriptive statistics; (b) the T-tests; (c) pre-analysis screening; and (d) the logistic regression.

Descriptive Statistics

This section provides the descriptive statistics for the dependent and independent variables. Descriptive Statistics describe numerical data and provide information about datasets. Descriptive statistics include basic statistics such as mean, median, minimum, maximum, range, standard deviation, and variance. They also include information about the distribution of the data such as normality, kurtosis, and skewness. Normality is the assumption that the data for each variable is grouped in linear patterns and concentrated about the mean. Kurtosis is the degree of peakedness of a distribution. The range of kurtosis is -1.0 to +1.0. The data are normally distributed when kurtosis is zero. Skewness is the degree of symmetry in a distribution. The range of skewness is -1.0 to +1.0. Skewness is also zero when the data are normally distributed.

The dependent variable (adopt or not?) is discussed first. The independent variables are presented in order of the model: (a) organizational culture; (b) organizational structure; and (c) the external environment.

The Dependent Variable

This study seeks to know whether local governments in Pennsylvania are adopting GASB 34, and, if so, to what extent. Descriptive statistics can answer this question. Forty-six percent (235/506) of the local governments in the sample adopted GASB 34; however, this adoption rate does not reflect the adoption rate in the population because the sample was stratified by size. The sample included 100% of the Phase 1 and Phase 2 governments, but only a portion of the Phase 3 governments. This information can be used to estimate the adoption rate in the population.

All the Phase 1 local governments in the sample adopted GASB 34, while only 85.6% of the Phase 2 governments adopted. The sample included 28 Phase 1 and 174 Phase 2 local governments. Thus, 28 of the Phase 1 and approximately 149 (174 x .856) of the Phase 2 local governments in Pennsylvania adopted GASB 34. The sample included 304 of the 2,430 Phase 3 local governments and only 19.1% of these local governments adopted GASB 34. Therefore, approximately 464 (2,430 x .191) of the Phase 3 local governments in Pennsylvania adopted GASB 34. These results suggest that approximately 641 (28 + 149 + 464) of the 2,632 local governments in Pennsylvania adopted GASB 34. This is an overall adoption rate of 24.3% (641/2,632). Table **2** shows the estimated adoption rate in the population by phase.

Table 2: Estimated Adoption Rate in the Population by Phase

Phase	Adoption Rate in the Sample	Adoption Rate in the Population	Est. No. Adopters in the Population	Est. Adoption Rate in the Popul.
Phase 1	100.0%	28	28	100.00%
Phase 2	85.6%	174	149	85.6%
Phase 3	19.1%	2,430	464	19.1%
Total	46.4%	2,632	641	24.3%

* n = 506

The Independent Variables

Organizational Culture

Propensity to Innovate

The propensity to innovate is measured by an innovation index representing a local government's propensity to innovate in various areas. Recall that the index was compiled by awarding each local government a point for each innovative practice they engaged in during the past seven years. The practices deserving of points for innovativeness included Penn Dot's Agility Program, participation in COGs, and being awarded grants or awards by the Governor for innovative practices.

The range of propensity to innovate is 14 (the minimum is 0.00 and the maximum is 14.0). The mean is 2.77 with a standard deviation of 2.30. The variance is 5.29. The

data are skewed to the right (positive skewness). The skewness and kurtosis values are 1.291 and 2.192, respectively, indicating that the data are nearly normally distributed, except for a slight positive skewness. Figure 5 shows the histogram of the propensity to innovate.

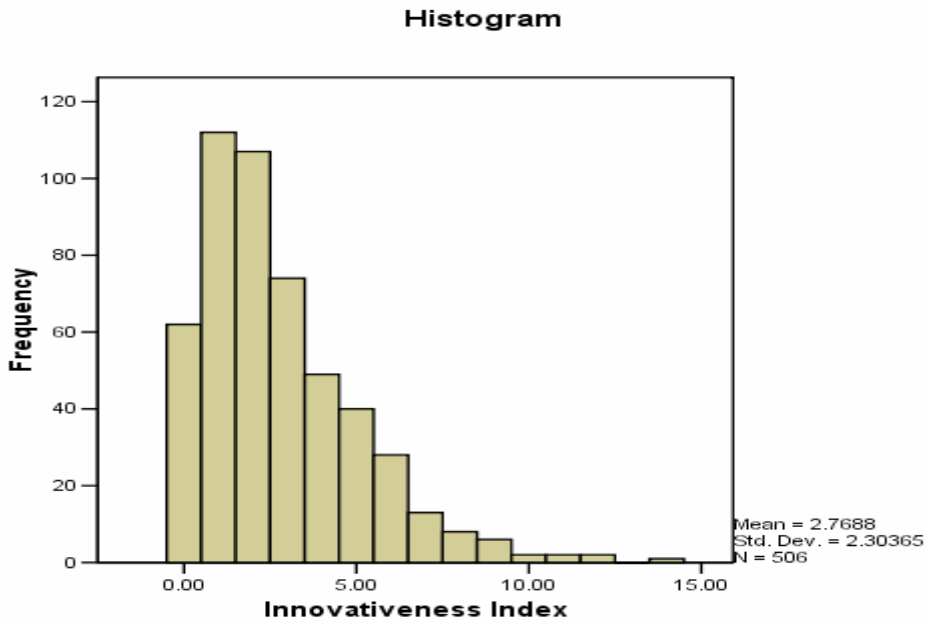

Figure 5: Histogram of Propensity to Innovate

Responsiveness to Constituents

Responsiveness to constituents is measured by a disclosure index based on the quality of the sampled local governments' websites. It is an index intended to reflect the local government's responsiveness to constituents. It measures the extent to which local

governments make available on their websites the names and emails of their members, the dates and times of upcoming meetings, the minutes of past meetings, and past and present budgets and financial reports.

The range of responsiveness to constituents is 20 (the minimum is 3.00 and maximum is 23.0). The mean is 11.83 with a standard deviation of 7.42. The variance is 55.12. The skewness value is .000. The kurtosis value is -1.765. These findings indicate that the data are bimodal, which suggest that the data fall into two distinct groups. This is not surprising, since the sampled local governments either had Internet access and email capability and used the technology to disclose information, or they did not have email and Internet capability and were unable to use this technology to disclose information.

The bimodal nature of this variable could cause problems during the regression analysis, as multivariate regression analyses assume normality (the assumption that each variable and linear combinations of variables are normally distributed), linearity (the assumption that there is a straight line between the independent and dependent variables), and homoscedasticity (the assumption that the variability of one continuous variable is roughly the same as all the other continuous variables). The bimodal distribution of this data violates all three assumptions, suggesting that the data are not normal, linear, or homoscedastic. Despite the potential problems that a bimodal distribution might cause, the decision is made to include the variable in the logistic regression because logistic regression is usually robust, even when some of the assumptions about the data are violated. Thus, the bimodal distribution itself is not a compelling reason to eliminate or transform this variable. Figure **6** shows the histogram of responsiveness to constituents and its bimodal distribution.

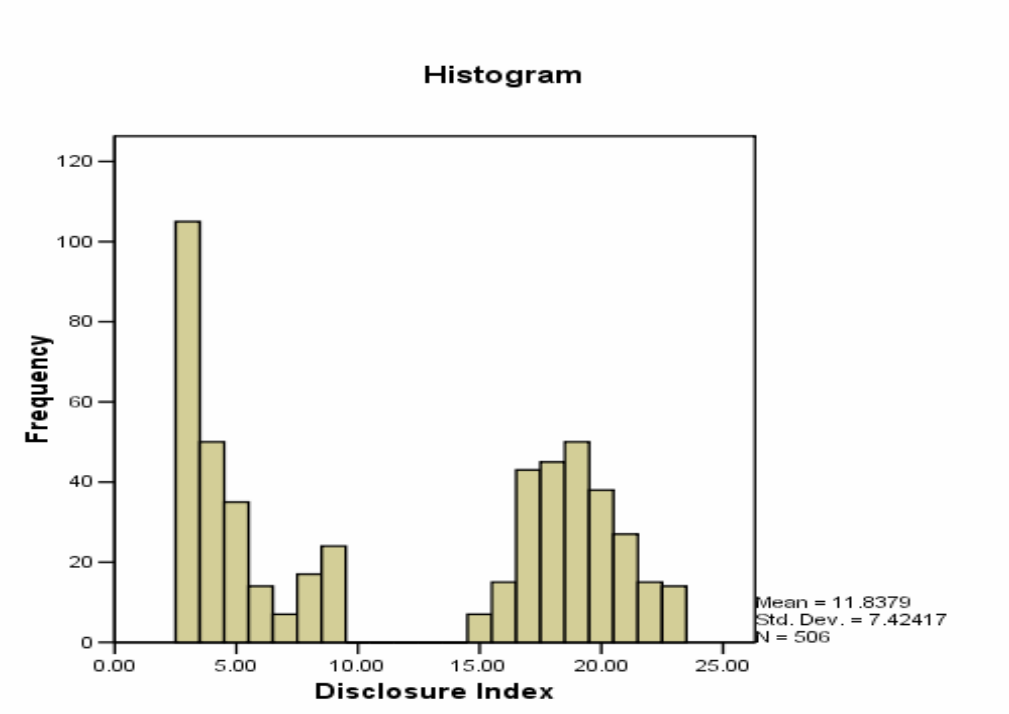

Figure 6: Histogram of Responsiveness to Constituents

Organizational Structure

Occupational Specialization

Occupational specialization is the extent to which staff members of the sampled local governments possess occupational expertise in finance and accounting. Recall that staff of the local governments were awarded scores, based on their occupational titles. Controllers were assumed to possess the most financial expertise and were coded with scores of 1.0. Municipal secretaries were assumed to possess the least financial expertise

and were coded with scores of 5.0. Occupations such as finance director, chief administrator, and manager were ranked with scores of 2.0, 3.0, or 4.0, respectively.

The range of occupational specialization is 4 (the minimum is 1.00 and maximum is 5.0). The mean is 4.09 with a standard deviation of 1.32. The variance is 1.76. The data are skewed to the left (negative skewness). The data are also J-shaped, as is evidenced by the lack of a tail on the side of the distribution with the highest frequency. The skewness and J-shape of this data violates the assumption of normality. This could cause problems during the logistic regression; however, the variable is not eliminated or transformed because the logistic regression is expected to be robust, despite the possible violation of the normality assumption. The data are also relatively normally distributed, as is reflected in the skewness and kurtosis values of -1.47 and -.889, respectively. Figure 7 shows the histogram of occupational specialization.

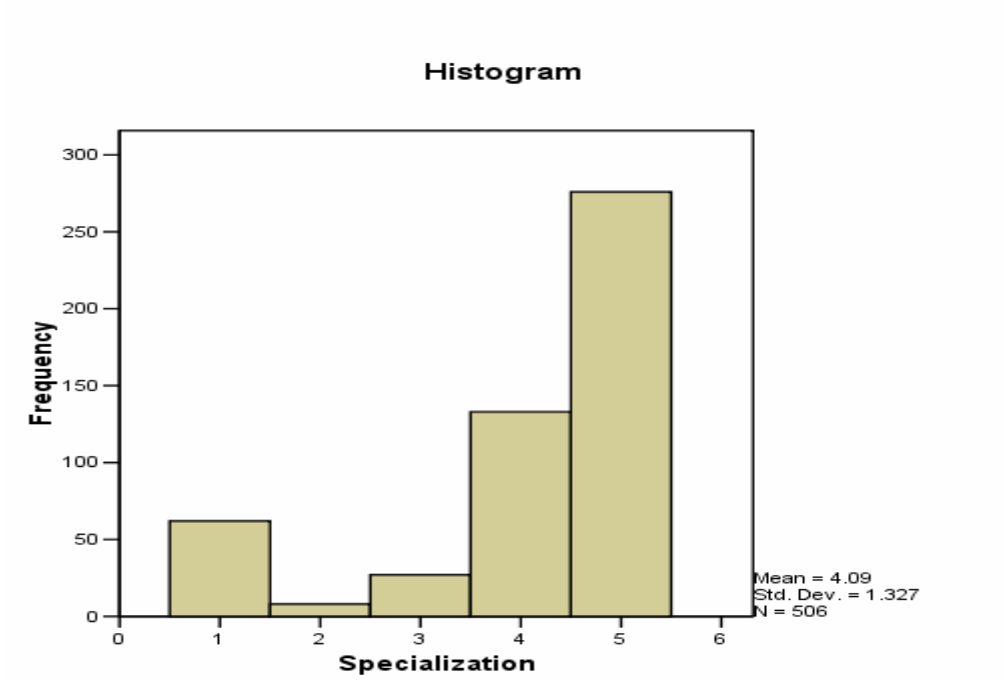

Figure 7: Histogram of Occupational Specialization

Functional Differentiation

Functional differentiation is the extent to which the local governments are divided into different functional units. Recall that the numeric value of functional differentiation represents the total number of different departments within the local government.

The range of functional differentiation is 18 (the minimum is 4.00 and maximum is 22.0). The mean is 10.56 with a standard deviation of 3.39. The variance is 11.51. The data are fairly normally distributed, as is indicated by the kurtosis values of -.340 (a kurtosis value of 0.00 represents a normal distribution). The skewness value of .341 also

suggests that the data are fairly normally distributed (a skewness value of 0.00 represents a normal distribution). Figure **8** shows the histogram of functional differentiation.

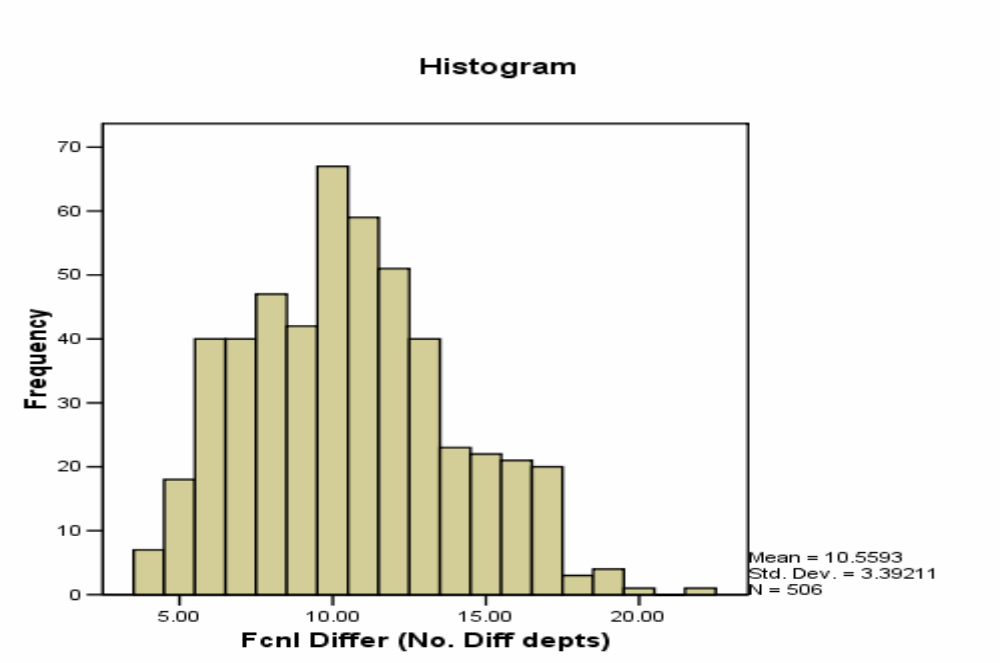

Figure 8: Histogram of Functional Differentiation

Administrative Intensity

Administrative intensity represents the total number of administrators in a local government. Recall that local governments were given scores based on their total number of administrators (e.g., if a local government had a manager, municipal secretary, director of public works, regional planning director, and three council members, it was awarded a score of 7.0).

The range of administrative intensity is 23 (the minimum is 7 and maximum is 30). The mean is 16.62 with a standard deviation of 4.35. The variance is 18.93. The skewness value is -.131, indicating the data are nearly normally distributed with a slight negative skewness. The kurtosis value is -.737, indicating that the data are somewhat peaked. Figure **9** shows the histogram of administrative intensity.

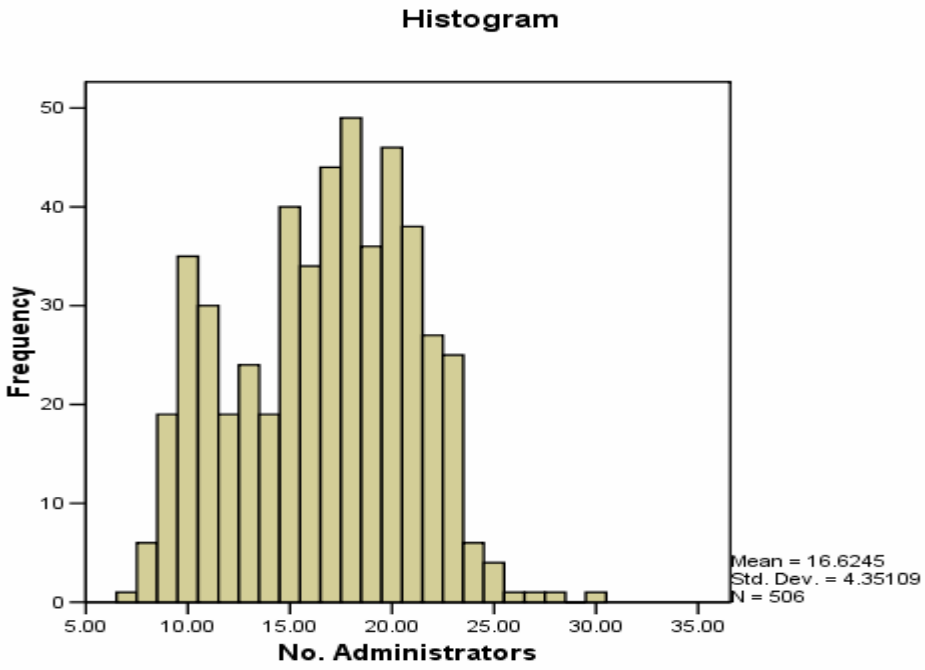

Figure 9: Histogram of Administrative Intensity

Availability of Slack Resources

The availability of slack resources reflects the net excess (deficit) revenue an organization has available to adopt innovations. Slack resources were calculated by subtracting total expenses from total revenues to arrive at the government's net excess (deficit) revenue. The local government's total annual revenues were then divided into the net excess (deficit) revenue to arrive at the government's percentage of excess (deficit) revenue. The result represents the percentage of slack resources available to invest in innovations.

The range of available slack resources is 1.47 (the minimum is -.815 and maximum is .662). The mean is -.0016 with a standard deviation of .164. The variance is .027. The data are normally distributed, as is indicated by the skewness value of -.014 (a skewness value close to zero represents a normal distribution). The kurtosis value is 3.65, indicating that the data are very peaked. Figure **10** shows the histogram of the availability of slack resources.

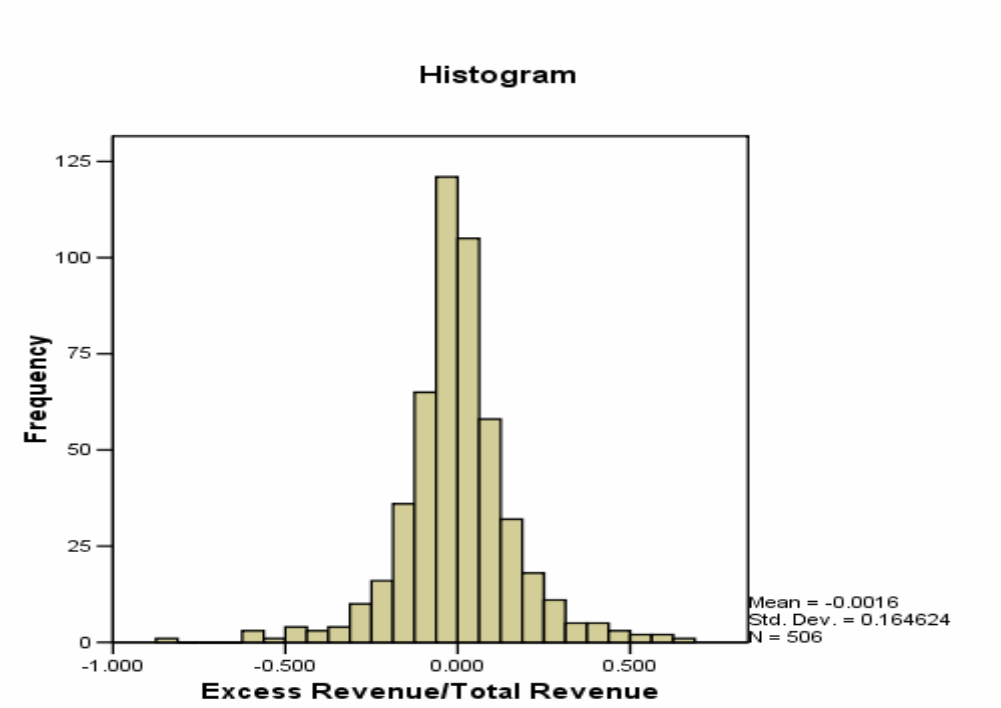

Figure 10: Histogram of the Availability of Slack Resources

Organizational Size

Local governments must comply with the provisions of GASB 34 based on the amount of their annual revenues. Total revenue was going to serve as the proxy for organizational size, but the data contained a high degree of variability. This variability is revealed in the descriptive statistics. The range of total revenue is $6.25 billion (the minimum is $10,687 and the maximum is $6.25 billion). The mean is $37.2 million with a standard deviation of $286 million. The data are extremely skewed to the right

(positive skewness) and J-shaped, as is evidenced by the skewness and kurtosis values of 19.66 and 415.88, respectively. Figure **11** shows the histogram of total revenue.

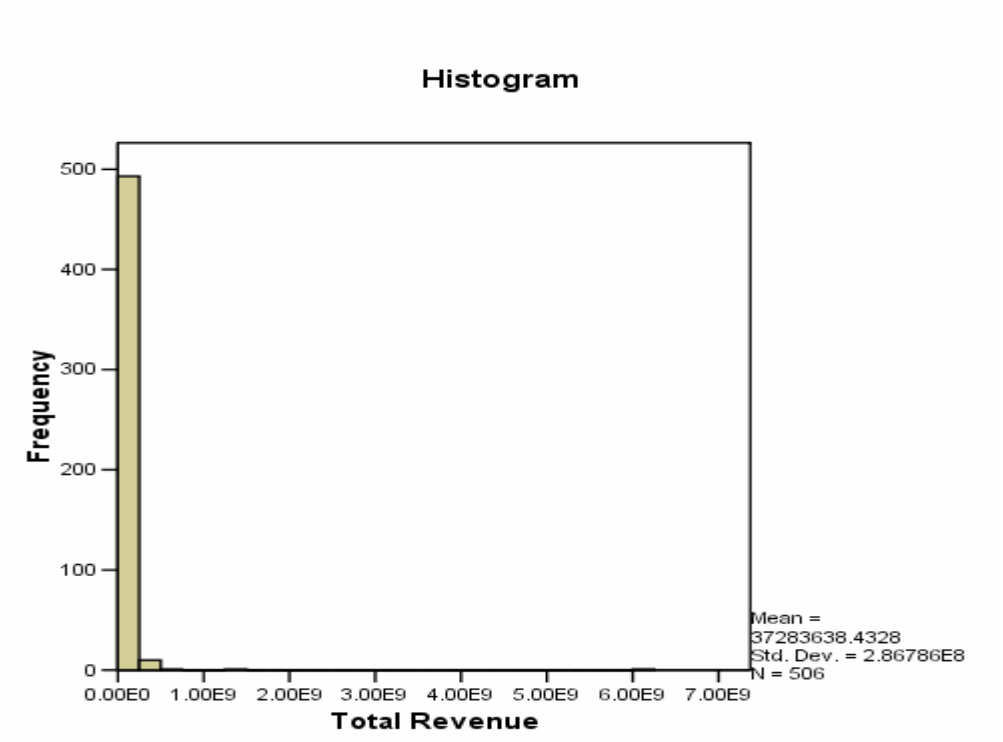

Figure 11: Histogram of Total Revenue

The histogram and descriptive statistics indicate that total revenue is not suitable for logistic regression because it contains a high degree of variability, and data with a high degree of variability can cause problems during data analysis.

According to Stevens (1992), data with a high degree of variability should be transformed or eliminated before the data analysis. Data transformation is not illegal. It simply involves applying a mathematical process to the data to reduce the variability. In other words, data transformation reissues the same data in different units. A variety of

methods can be used to transform data. These include using the square root, natural log, or inverse of a number. It can also involve adding a value to the number. Data transformation is an acceptable way to reduce the variability of data, as long as the same mathematical application is performed on every observation.

In this case, total revenue was transformed by replacing it with the log revenue. This transformation significantly reduced the variability in the data. After the transformation, the range of organizational size measured by log revenue is 5.76 (the minimum is 4.03 and the maximum is 9.79). The mean is 6.45 with a standard deviation of 1.00. The variance is 1.01. Figure **12** shows the histogram of organizational size.

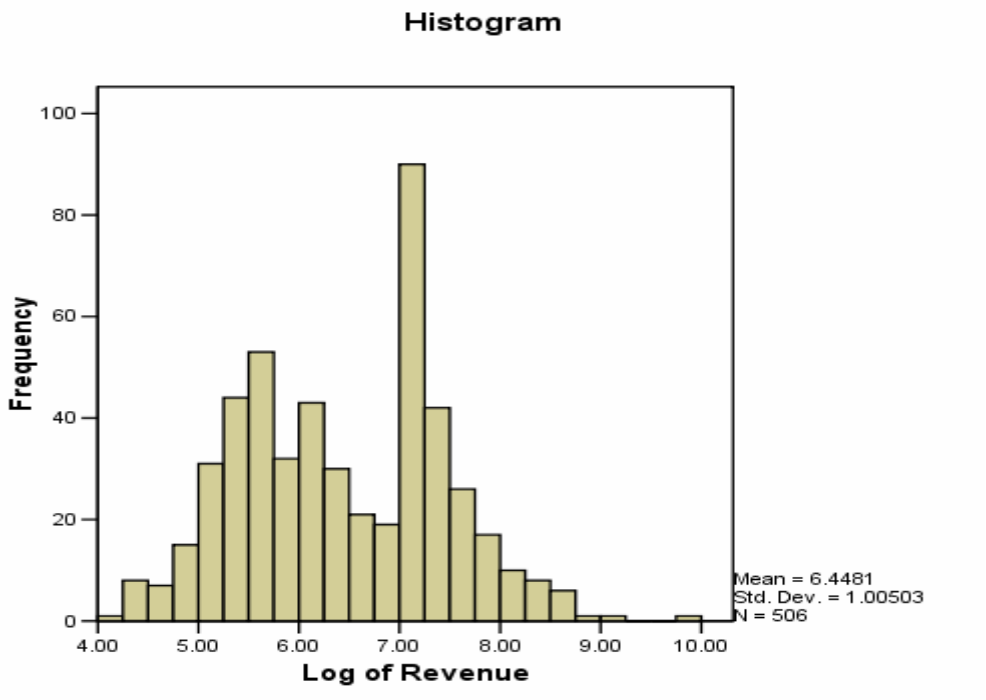

Figure 12: Histogram of Organizational Size

The histogram of organizational size using log revenue indicates data that are bimodal. The bimodal distribution suggests that the data come from two different populations. As previously mentioned, the bimodal distribution of this variable is not surprising, given what we know about the population. The Phase 3 governments represent small local governments with relatively little revenue. Their log revenue is between 4.03 and 7.98. Looking at only the Phase 3 governments, the histogram reveals an approximately normal distribution. The Phase 2 governments begin at log revenue 7.0. The data show a sharp peak beginning at log revenue 7.00, indicating that a large number of Phase 2 local governments begins here. Looking only at the Phase 2 governments, the distribution is J-shaped and skewed to the right (positive skewness). The Phase 2 governments blend smoothly into the Phase 1 local governments, which begin at log revenue 8.00 and move upward to 9.79.

Although the assumption of normality appears true for certain parts of this distribution, taken as a whole the data are bimodal. This is apparent by the sharp distinction between the Phase 2 and 3 local governments (e.g., the sharp peak at log revenue 7.00 where the Phase 2 local governments begin). The bimodal nature of the data is observable from a visual inspection of the histogram. It is confirmed by the skewness and kurtosis values of .101 and -.650, respectively. As previously mentioned, bimodal distributions can cause the problems during the data analysis; however, log revenue is retained for the logistic regression because logistic regressions can tolerate the violation of certain assumptions (e.g., normality, linearity, and homoscedasticity).

The External Environment

Debt Financing

Debt per capita is the proxy for the local government's level of debt financing. Recall that debt per capita was calculated by dividing total debt by total population. The range of debt per capita is $9,140 (the minimum is 0.00 and the maximum is $9,140). The mean is $508 with a standard deviation of $1,007. The data are skewed to the right (positive skewness) and J-shaped. The data are J-shaped because the data do not have a tail on the side with the highest frequency. The sharp positive skewness is reflected in the skewness value of 4.935. The data are also peaked, as is reflected in the kurtosis value of 32.32. Figure **13** shows the histogram of debt financing measured in terms of debt per capita.

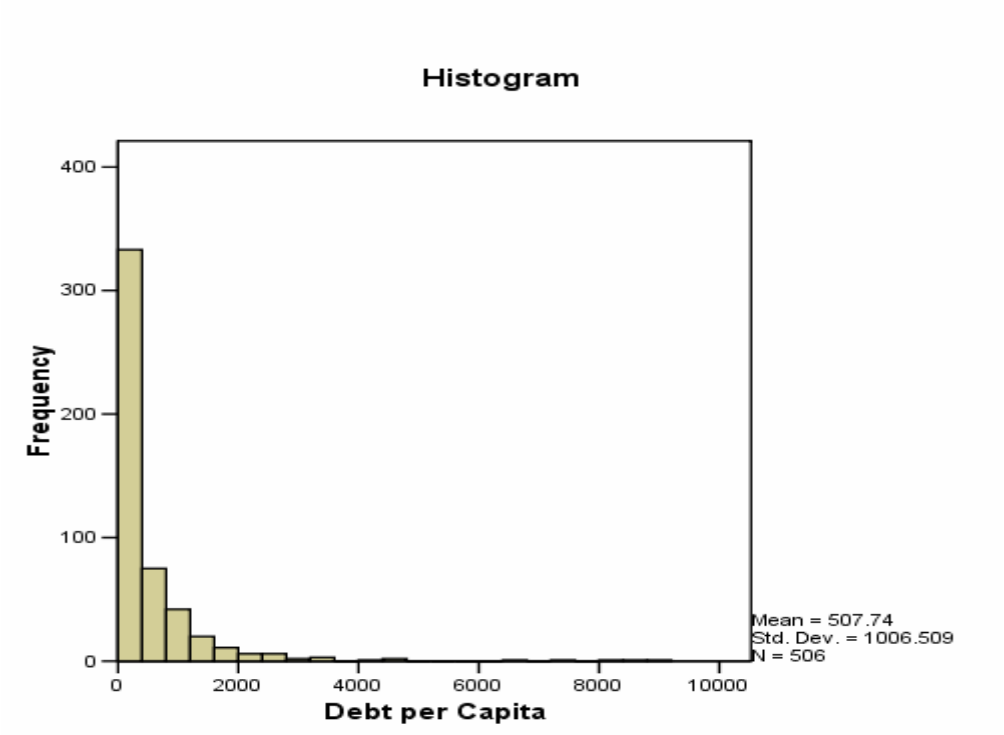

Figure 13: Histogram of Debt Financing

Intergovernmental Revenue

Intergovernmental revenue is the local government's percentage of intergovernmental funding relative to its total revenue. Recall that intergovernmental revenue was calculated by dividing the government's intergovernmental revenue by its total annual revenue. The result represents the percentage of annual revenue from intergovernmental sources.

The range of intergovernmental revenue is .84 (the minimum is 0.00 and maximum is .84). The mean is .192 with a standard deviation of .159. The variance is

.025. The data are skewed to the right (positive skewness), as is reflected in the skewness value of 1.055. Skewed data can cause problems during regression analysis because it violates the normality assumption (see Occupational Specialization above for a more thorough discussion); however, this variable is retained for the logistic regression due to its expected robustness. The data are distributed fairly normally, as is reflected in the kurtosis value of .542. Figure **14** shows the histogram of intergovernmental revenue.

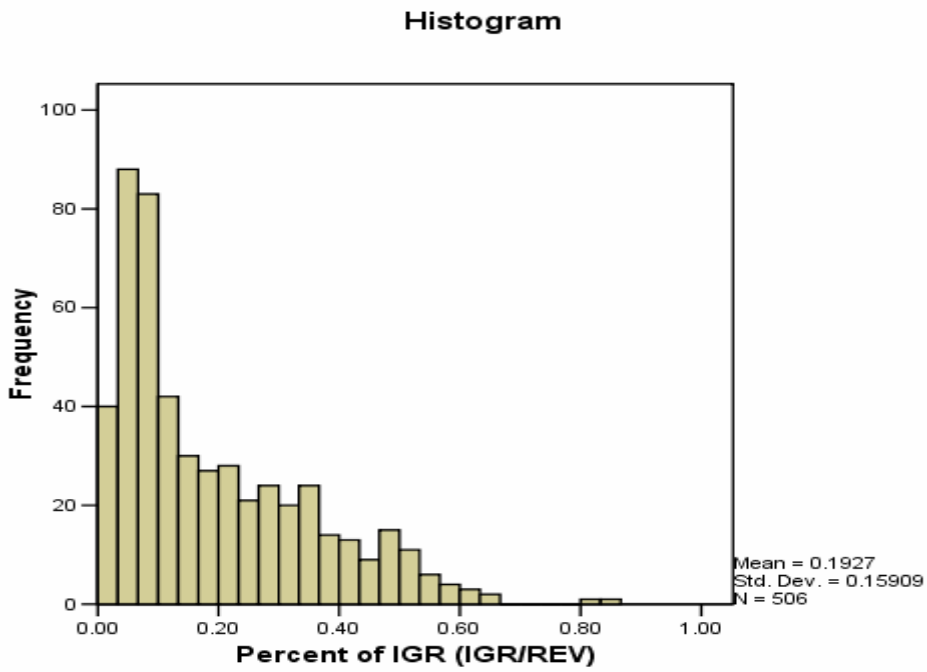

Figure 14: Histogram of Intergovernmental Revenue

Conclusion of the Descriptive Statistics

The purpose of this study is to use logistic regression to build a model of organizational innovativeness that can identify the determinants of innovativeness. The descriptive statistics indicate that some of the data are normally distributed while others are skewed or bimodal, violating the assumptions of normality, linearity, and homoscedasticity. Despite these violations of the assumptions necessary for a robust multivariate analysis, all the variables are retained for the logistic regression. A summary of the descriptive statistics is provided in Table **3**.

Table 3: Summary of the Descriptive Statistics

Variable	Minimum	Maximum	Mean	Standard Deviation	N
Organizational Culture					
Propensity to Innovate	0.00	14.00	2.768	2.303	506
Responsiveness to Constituents	3.00	23.00	11.837	7.424	506
Organizational Structure					
Occupational Specialization	1.00	5.00	4.090	1.327	506
Functional Differentiation	4.00	22.00	10.559	3.392	506
Administrative Intensity	7.00	30.00	16.624	4.351	506
Available Slack Resources	-.815	0.662	-.0016	.1646	506
Organizational Size	4.03	9.79	6.448	1.005	506
Interdependencies					
Debt Financing	0.00	9140.00	507.74	1006.59	506
Intergovernmental Revenue	0.00	.84	.1927	.1590	506

The T-tests

T-tests are used to identify differences between groups. In this case, T-tests were used to determine if adopters and non-adopters differed across the nine dependent measures. Independent sample T-tests were used to identify these differences because the one-sample T-test and paired-sample T-test were not appropriate for this study.

The one-sample T-test is not appropriate for this study because the population mean is not known. The one-sample T-test is used to compare a sample mean to a known population mean. For example, it would be used to compare the actual weight of sampled cereal boxes to an established weight. The one-sample T-test cannot be used here because the population mean is unknown.

The paired-samples T-test is inappropriate for this study because it is used to analyze the results of an experiment conducted on the same sample observations. Paired-samples T-tests are used in before and after studies to determine the effects of an intervention on the same cases. For example, a paired-sample T-test would be used to examine students' mean test scores before and after a new teaching approach. A paired-sample T-test is inappropriate here because an intervention or experiment is not being conducted on the same subjects.

The two-independent-samples T-test is most appropriate for this study because it compares differences in groups from the same population across certain dependent measures. The two-independent-samples T-test is similar to the one-sample T-test, except that it uses two independent samples, instead of the same sample. It calculates the sample means and estimates the standard error of the mean difference based on two

sample variances and two sample sizes, rather than one. The two-independent-sample T-test is appropriate here because it can test whether adopters and non-adopters differ across the organizational determinants identified in this study.

T-tests using two independent samples make certain assumptions about the data. The first assumption is that the data are normally distributed. The assumption of normality implies that the data follow a bell-shaped curve. The other assumption involves homogeneity or equality of variance. This assumption means that the variance of the dependent measures should be the same for each sample. That is, any variation in the sample mean is assumed to be due to variations in the subjects' actual scores and the variance between the groups is assumed to be similar. This assumption is made because the results of the tests can be difficult to interpret when the variations between the two groups is disparate.

Assumptions of normality and homogeneity of variance are required; however, T-tests are usually robust enough to tolerate moderate violations of these assumptions under certain circumstances. Normality can be violated if the sample size is large enough and the dependent measure has a similar distribution within each comparison group. Thus, normality is less important if the sample size exceeds 25 observations and the data in both groups is skewed to the right (or left). Violations of homogeneity of variance can be tolerated if the sample size of the two groups is about the same. Similar sample sizes help minimize the distortions caused by violations of homogeneity of variance. Thus, T-tests are robust and can tolerate departures from normality if the sample sizes are large enough, and departures from homogeneity of variance, if the sample size of the two groups is close in number (Kirk, 1968). In this study, there are 235 adopters and 271

non-adopters. These samples should be large enough and close enough in size to minimize the consequences of violations of these assumptions.

Descriptive statistics are important when analyzing T-tests. The mean and standard deviation from the mean for each sample is important. These statistics are important because the difference in sample means is the focus of the T-test. The difference between the means and the standard error of the mean differences are also important. The difference between the means (the mean difference) measures the difference between the two sample means. The standard error of the mean difference is the estimated standard deviation of the difference between the two sample means. The standard error of the mean difference is based on the two sample variances and two sample sizes. These statistics measure the extent to which the samples are different.

In addition to descriptive statistics, the T-test statistic and Levene test of homogeneity of variance are important. The T-test statistic is calculated two ways. The first way calculates the standard error of the mean differences assuming that the variances in the groups are equal. The second way calculates the standard error of the mean differences assuming that the group variances are not equal. The two versions are very similar. The only difference is that a pooled estimate of the variance is used when the variances in the groups are assumed to be equal and the individual sample variances are used when the group variances are not assumed to be equal. In this study, the group variances are assumed to be equal because the homogeneity of variance is always assumed when conducting T-tests. The null hypothesis also assumes the groups are equal.

The T-test statistic is used to test the null hypothesis. A test statistic less than .0005 is statistically significant and indicates a difference between the group means. A test statistic of .0005 indicates that there are fewer than 5 chances in 10,000 of finding a difference in the sample means, when the null hypothesis is true (e.g., if the two groups are identical). The null hypothesis should be rejected when the T-test statistic is less than .0005 because the difference between the groups is statistically significant.

The T-test compares the equality of the group means. The Levene test compares the equality of the group variances. A Levene test statistic of .05 or less indicates that the two groups are different and the homogeneity (equality) requirement is not met. A statistically significant Levene test statistic (.05 or less) will result in a rejection of the null hypothesis and a conclusion that the groups differ. By contrast, the null hypothesis will not be rejected when the Levene test statistic is greater than .05 (not statistically significant). A large Levene statistic indicates that the groups are not different and the homogeneity requirement is met.

The results of the T-tests are presented below in order of the organizational innovativeness model: (a) organizational culture; (b) organizational structure; and (c) the external environment.

Organizational Culture

Organizational culture contains two independent variables: (a) the propensity to innovate, and (b) responsiveness to constituents.

Propensity to Innovative

The propensity to innovate is measured with an innovativeness index. The innovativeness index is an ordinal variable that attempts to measure organizational innovativeness in several areas. The index ranks local governments based on the extent to which they engage in innovative practices available to Pennsylvania local governments. Local governments are considered more innovative if they engage in more innovative practices. The range spans from 0 to 14 practices with a mean of 2.77.

The mean propensity to innovate of adopters is 3.3830 with a 2.41924 standard deviation from the mean. The mean propensity to innovate of non-adopters is 2.2362 with a 2.05920 standard deviation from the mean. The mean difference is -1.14682, assuming the group variances are equal. The standard error of the mean difference is .19909. The T-test statistic is -5.760 and significant at .000, indicating a difference between the group means. The Levene test statistic is 8.783 and significant at .003, indicating a difference between the group variances. These findings indicate that adopters and non-adopters are different when it comes to the propensity to innovative. The null hypothesis is rejected because the findings support Hypothesis No. 1: Pennsylvania local governments with a higher propensity to innovate are more likely to adopt GASB 34 than local governments with a lower propensity to innovate.

Responsiveness to Constituents

Responsiveness to constituents is measured by a website disclosure index. The index is an ordinal variable that attempts to measure the extent to which local governments disclose information on their websites and the extent to which they facilitate communication with their constituents through email. Local governments are considered more responsive, if they have websites and communicate with the public through email. Local governments are considered less responsiveness, if they do not have websites or fail to provide email capabilities for their members. Website disclosure index scores range from 3 to 23 with a mean of 11.83.

The mean responsiveness of adopters is 16.6170 with a 5.85419 standard deviation from the mean. The mean responsiveness of non-adopters is 7.6937 with a 6.02267 standard deviation from the mean. The mean difference is -8.92329, assuming the group variances are equal. The standard error of the mean difference is .52992. The T-test statistic is -16.839 and significant at .000, indicating a difference between the group means. The Levene test statistic is 4.037 and significant at .045, indicating a difference between the group variances. These findings indicate that adopters and non-adopters are different when it comes to responsiveness to constituents. The null hypothesis is rejected because the findings support Hypothesis No. 2: Pennsylvania local governments with better quality websites are more likely to adopt GASB 34 than local governments with poorer quality websites.

Organizational Structure

Organizational structure contains five independent variables: (a) occupational specialization; (b) functional differentiation; (c) administrative intensity; (d) the availability of slack resources; and (e) organizational size.

Occupational Specialization

Occupational specialization is the degree to which the financial administrator's of the local government possesses occupational expertise. Occupational specialization is an ordinal variable that ranks governments based on the occupational expertise possessed by the most qualified financial member. The range of occupational specialization spans from governments with staff possessing high levels of financial expertise (controllers and finance directors) to governments with staff possessing low levels of financial expertise (municipal secretaries). The range of occupational specialization is 4 with a mean of 4.09 (recall that occupational specialization of municipal secretaries is 5.0).

The mean occupational specialization of adopters is 3.33 with a 1.497 standard deviation from the mean. The mean specialization of non-adopters is 4.75 with a .640 standard deviation from the mean. The mean difference is 1.421, assuming the group variances are equal. The standard error of the mean difference is .100. The T-test statistic is 14.206 and significant at .000, indicating a difference between the group means. The Levene test statistic is 260.334 and significant at .000, indicating a difference between the group variances. These findings indicate that adopters and non-adopters are different when it comes to occupational specialization. The null hypothesis

is rejected because the findings support Hypothesis No. 3: Pennsylvania local governments with members who possess higher levels of occupational specialization are more likely to adopt GASB 34 than local governments with members that possess lower levels of occupational specialization.

Functional Differentiation

Functional differentiation is an ordinal variable representing the number of the organization's different departmental units (public works, public budgeting, finance, planning, the mayor's office, etc.). Functional differentiation spans from governments with four departments to those with 22 different departments. The range of functional differentiation is 17 with a mean of 10.56.

The mean functional differentiation of adopters is 12.5064 with a 2.95894 standard deviation from the mean. The mean differentiation of non-adopters is 8.8708 with a 2.78786 standard deviation from the mean. The mean difference is -3.63553, assuming the group variances are equal. The standard error of the mean difference is .25569. The T-test statistic is -14.218 and significant at .000, indicating a difference between the group means. The Levene test statistic is .888 but not significant at .346, indicating no difference between the group variances. These findings are mixed, but there is enough evidence to suggest that adopters and non-adopters are different when it comes to functional differentiation. The null hypothesis is rejected because the findings support Hypothesis No. 4: Pennsylvania local governments with higher levels of

functional differentiation are more likely to adopt GASB 34 than local governments with lower levels of functional differentiation.

Administrative Intensity

Administrative intensity is an ordinal variable representing the number of administrators in an organization. Administrative intensity ranges from local governments with very few administrators (7) to those with many administrators (30). The range of administrative intensity is 21 with a mean of 16.62.

The mean administrative intensity of adopters is 18.9489 with a 3.13608 standard deviation from the mean. The mean intensity of non-adopters is 14.6089 with a 4.25508 standard deviation from the mean. The mean difference is -4.34008, assuming the group variances are equal. The standard error of the mean difference is .33667. The T-test statistic is -12.891 and significant at .000, indicating a difference between the group means. The Levene test statistic is 39.114 and significant at .000, indicating a difference between the group variances. The findings indicate that adopters and non-adopters are different when it comes to administrative intensity. The null hypothesis is rejected because the findings support Hypothesis No. 5: Pennsylvania local governments with higher levels of administrative intensity are more likely to adopt GASB 34 than local governments with lower levels of administrative intensity.

Availability of Slack Resources

The availability of slack resources is a ratio variable representing the excess resources a local government has available to adopt innovations. The availability of slack resources is calculated by dividing excess (deficit) revenue by total revenue. Available slack resources range from an annual deficit of -.815 to annual excess revenue of + .662. The range of slack resources is 1.477 with a mean of -.0016.

The mean slack resources of adopters are .00724 with a .124127 standard deviation from the mean. Mean slack resources of non-adopters are -.00927 with a .192895 standard deviation from the mean. The mean difference is -.016512, assuming the group variances are equal. The standard error of the mean difference is .014670. The T-test statistic is -1.126, but not significant at .246, indicating no difference between the group means. The Levene test statistic is 23.520 and significant at .000, indicating a difference between the group variances. The findings are mixed, but there is enough evidence to suggest that adopters and non-adopters are different when it comes to the availability of slack resources. The null hypothesis is rejected because the findings support Hypothesis No. 6: Pennsylvania local governments with more available slack resources are more likely to adopt GASB 34 than local governments with less slack resources.

Organizational Size

Organizational size is a ratio variable measured in terms of log of revenue. The smallest organizations have a log of revenue of 4.03 while the largest organizations have a log of revenue of 9.79. The range is of organizational size is 5.76 with a mean of 6.45.

The mean organizational size of adopters is 7.2124 with a .69832 standard deviation from the mean. The mean organizational size of non-adopters is 5.7854 with a .71924 standard deviation from the mean. The mean difference is -1.42703, assuming the group variances are equal. The standard error of the mean difference is .06325. The T-test statistic is -22.561 and significant at .000, indicating a difference between the group means. The Levene test statistic is 1.982, but not significant at .160, indicating no difference between the group variances. These findings are mixed, but there is enough evidence to suggest that adopters and non-adopters are different when it comes to organizational size. The null hypothesis is rejected because the findings support Hypothesis No. 7: Larger Pennsylvania local governments are more likely to adopt GASB 34 than smaller local governments.

The External Environment

The external environment contains two independent variables: (a) debt financing, and (b) intergovernmental revenue.

Debt Financing

Debt financing is a ratio variable measured by debt per capita. Debt per capita is calculated by dividing total debt by total population. The range of debt per capita spans from organizations that have no debt per capita ($0) to organizations with high debt per capita ($9,140). The range of debt financing is $9,140 with a mean of $508.

The mean debt financing of adopters is $681.79 with a $1,036.60 standard deviation from the mean. The mean debt financing of non-adopters is $356.81 with a $956.19 standard deviation from the mean. The mean difference is $324.98, assuming the group variances are equal. The standard error of the mean difference is $88.63. The T-test statistic is -3.667 and significant at .000, indicating a difference between the group means. The Levene test statistic is .922, but not significant at .338, indicating no difference between the group variances. These findings are mixed, but there is enough evidence to suggest that adopters and non-adopters are different when it comes to debt financing. The null hypothesis is rejected because the findings support Hypothesis No. 8: Pennsylvania local governments with higher levels of debt financing are more likely to adopt GASB 34 than local governments with lower levels of debt financing.

Intergovernmental Revenue

Intergovernmental revenue is a ratio variable representing the portion of the local government's total revenue derived from intergovernmental sources. Intergovernmental revenue ranges from organizations with no intergovernmental revenue (0.00%) to those

with high intergovernmental revenue (84%). The range of intergovernmental revenue is 84% with a mean of 19.2%.

The mean intergovernmental revenue of adopters is 15.35% with a 14.59% standard deviation from the mean. The mean intergovernmental revenue of non-adopters is 22.67% with a 16.24% standard deviation from the mean. The mean difference is 7.03%, assuming the group variances are equal. The standard error of the mean difference is 1.38%. The T-test statistic is 5.298 and significant at .000, indicating a difference between the group means. The Levene test statistic is 4.222 and significant at .040, indicating a difference between the group variances. These findings indicate that adopters and non-adopters are different when it comes to the receipt of intergovernmental revenue; however, the association between adoption and the receipt of intergovernmental revenue is negative. Local governments that adopted GASB 34 in the highest numbers were those receiving the least intergovernmental revenue.

These findings result in a rejection of the null hypothesis, since adopters and non-adopters do differ, but the findings do not support Hypothesis No. 9: Pennsylvania local governments with higher levels of intergovernmental revenue are more likely to adopt GASB 34 than local governments with lower levels of intergovernmental revenue. In fact, local governments with lower levels of intergovernmental revenue are more likely to adopt GASB 34 than local governments with higher levels of intergovernmental revenue.

Conclusion of the T-tests

The T-tests indicate that adopters and non-adopters differ on all nine measures. All the tests are statistically significant for the propensity to innovate, responsiveness to constituents, occupational specialization, administrative intensity, and intergovernmental revenue. The findings are less conclusive for functional differentiation, slack resources, organizational size, and debt financing. The T-test does not find group differences on slack resources, but the Levene test does. Conversely, the T-test finds group differences for functional differentiation, organizational size, and debt financing, but the Levene test does not. This evidence suggests that adopters and non-adopters differ on all nine measures. Table **4** summarizes the results of the T-tests.

Table 4: The Results of the T-tests

Dependent Measures		T-Tests		Levene Tests	
	Mean Diff.	Statistic	Signif.	Statistic	Signif.
Propensity to Innovate	-1.14	-5.76	.000*	8.78	.003**
Responsiveness to Constituents	-8.92	-16.83	.000*	4.03	.045**
Occupational Specialization	1.42	14.20	.000*	260.33	.000**
Functional Differentiation	-3.63	-14.21	.000*	.88	.346
Administrative Intensity	-4.34	-12.89	.000*	39.11	.000**
Available Slack Resources	-.016	-1.12	.246	23.52	.000**
Organizational Size	-1.42	-22.56	.000*	1.98	.160
Debt Financing	325	-3.66	.000*	.92	.338
Intergovernmental Revenue	7.03	5.29	.000*	4.22	.040**

* Statistically significant at the .005 level (one-tailed test).
** Statistically significant at the .05 level (one-tailed test).

Pre-analysis Screening

The purpose of this study is to build a logistic regression model that can identify the organizational determinants associated with the adoption of GASB 34. However, before a regression model can be built, the data must be screened for missing data, outliers, and multicollinearity. These steps are necessary to prepare the data for the binary logistic regression because logistic regression is sensitive to missing data, outliers, and multicollinearity. This section describes the pre-analysis screening, which includes: (a) a search for missing data; (b) a search for errors and outliers; and (c) a review for multicollinearity.

A Search for Missing Data

Logistic regression is sensitive to missing data; however, the data does not contain any missing values. The response rate to the survey is 100% and archival data is available for all data fields. Therefore, missing data is not a concern for this study.

A Search for Errors and Outliers

The pre-analysis screening also includes a search for errors and outliers. The screening begins with a search for errors. Errors are often represented by observations with extreme values, so the data are examined for cases with extreme values. The search begins with an examination of each value in the dataset. The values of the observations are first compared with the other values for the same variable. Extreme values are then

compared with the prior year data (the archival data used for this study is available for several consecutive years).

If an extreme datum appears reasonable in light of the prior year data, and given what the datum was supposed to represent, the datum is assumed correct and left unchanged. If the datum appeared to be in error, given the prior year data, and what the datum was supposed to represent, the local government is contacted to confirm the datum. Corrected data are obtained from the local governments and entered into the database. The search for errors is concluded with a review of the frequency distributions and histograms, which help to identify possible errors and outliers. Any data representing extreme values are investigated and changed, if necessary. The search revealed several errors. The nature of one of those errors is described below.

The data indicated that Biglerville Borough's debt per capita was $126 million. This is extremely high compared to the debt per capita of the other local governments (the next highest debt per capita is $9,140), and for the debt we would expect from a small, rural, local government such as Biglerville. The data is compared with the prior year. Biglerville's debt per capita is much lower in the prior year, indicating the datum is likely to be an error. Biglerville is contacted and its actual debt per capita of $391 is obtained and used to replace the erroneous database value.

After investigating all the possible errors, the data are tested for outliers. Outliers are also data with extreme values. Outliers can distort statistical models and cause extremely large residuals. Residuals are the portions of the scores not accounted for by the statistical analysis. In other words, residuals are the difference between the actual and predicted values of each observation on the dependent variable. Outliers are undesirable

because they distort the data analysis and cause large residuals. To prevent these distortions, outliers must be detected and deleted or transformed.

Mahalanobis distance scores are one way to identify outliers. Mahalanobis distance scores measure how far an observation is from the average value of all the independent variables. Outliers can be identified other ways such as with Cook's distances and leveraged values. Cook's distance measures how much the residuals of all the observations would change if the observation in question was omitted from the analysis. Leverage values show how much the observation in question influences the fit of the regression model. Researchers can use any one or all of these methods to identify outliers. In this study, Mahalanobis distance scores are used to identify outliers.

Outliers are observations with Mahalanobis distance scores greater than the critical value of chi-square (χ^2). In this study, the critical value for chi-square is χ^2 (9) = 27.87, where $p<.001$ and $df = 9$ (degrees of freedom equals the number of independent variables). The critical value of chi-square is obtained from the chi-square table in Stevens' (1992) textbook and is used throughout this section. Following the decision rule, any independent variable with a Mahalanobis distance score greater than χ^2 (9) = 27.87 is deemed an outlier and is deleted or transformed in a justifiable manner.

Mahalanobis distance scores are calculated by running a linear regression on all the observations. The observations with Mahalanobis distance scores exceeding the critical value of chi-square are identified for possible transformation or elimination. Since data elimination should always be used as a last alternative, ways to transform the data were considered first. Table **5** shows the observations with extreme Mahalanobis distance scores in descending order.

Table 5: Observations with Extreme Mahalanobis Distance Scores

Observation	Mahal. Dist*.	Indep Variable	Value	Mean	Decision
Greencastle Boro	85.1	Debt/Capita	$ 8,668	$ 508	Retain
Harrisburg City	78.9	Debt/Capita	$ 9,140	$ 508	Retain
Steuben Twp	73.2	Debt/Capita	$ 8,294	$ 508	Retain
Lewis Twp	55.4	Debt/Capita	$ 7,248	$ 508	Retain
Philadelphia City	52.2	Log revenue	9.79	6.4	Retain
Williamsport City	46.1	Debt/Capita	$ 6,451	$ 508	Retain
Allegheny Co.	44.4	Functional Diff	22	10.5	Retain
Sharon City	41.4	Propensity to Innovate	14	2.8	Retain
White Haven Boro	33.9	Debt/Capita	$ 4,157	$ 508	Retain
Abington Twp	33.6	Undetermined	Unknown	Unknown	Retain
Northampton Co.	32.8	Undetermined	Unknown	Unknown	Retain
Gray Twp	30.9	Slack Resources	- .815	- .001	Retain

* Where the critical value of chi-square is χ^2 (9) = 27.87 (p < .001, *df* = 9)

A review of the extreme Mahalanobis distances scores revealed that six of the observations had extreme values of debt per capita (debt financing). Six observations from the same independent variable suggested that debt per capita may contain a high degree of variability (recall the discussion of total revenue above). A possible solution is to transform debt per capita using the natural log of debt per capita. This transformation worked well for total revenue and might work well for debt per capita, too. However, shortly after transforming debt per capita to the log of debt per capita, it became apparent that this transformation was not going to work. The reason is simple: many local

governments do not have any debt and the natural log of zero is undefined. Transforming debt per capita with a natural log resulted in dozens of cases with missing data. Thus, the data had to be transformed another way or the outlying observations would have to be eliminated.

There are other ways to transform data for the purpose of reducing outliers. In the case of debt per capita, these include using the log of total debt or dividing total debt by total revenue. Both of these alternatives were explored. Log of total debt produced very few outliers, but was ruled out because it failed to reflect debt relative to organizational size. Total debt as a percentage of total revenue was ruled out because it contained a high degree of variability. Some local governments do not have any debt while others borrowed well in excess of annual revenues. This caused debt as a percentage of total revenue to possess a wide range of data and many observations with extreme values. Ruling out these alternatives made debt per capita the best proxy of debt financing, even if it produced six outliers.

Once the outliers were identified, a decision had to be made to retain or delete the observations with Mahalanobis distance scores greater than the critical value of chi-square. These observations included the six observations with extreme values of debt per capita, as well as Philadelphia City, which had the highest log of revenue (organizational size) in the sample. They included Sharon City, who had the highest innovativeness index in the sample. Sharon City had a high propensity to innovate because it frequently received grants to complete innovative projects. It included Allegheny County, who had the highest number of functional departments of any case in the sample, and Gray Township, Greene County, which had the least amount of available slack resources (e.g.,

the highest revenue shortfall). It also included Abington Township, Montgomery County and Northampton County, although the reasons for their extreme Mahalanobis distance scores were unclear.

Mahalanobis distance scores identify outliers by calculating the distance the observation lies from the centroid of the mean of all the other observations. Some researchers routinely delete outliers. Stevens (1992) cautions against routinely deleting outliers simply because they have high Mahalanobis distance scores. He believes we lose valuable information when we delete observations, even if their values are extreme. By contrast, Mertler and Vannatta (2001) suggest that any observation with an excessive Mahalanobis distance score should be deleted. They say that to retain outliers violates the decision rule established at the outset of the procedure (e.g., delete all outliers with Mahalanobis distance scores greater than the critical value of chi-square). Mertler and Vannatta believe that retaining these observations distorts the regression model.

After carefully considering the arguments for and against deleting outliers, all the outliers (observations with Mahalanobis distance scores greater than the critical value of chi-square) were retained in this study due to the potential contribution they may make to the model.

A Review for Multicollinearity

After addressing the data for errors and outliers, the data were reviewed for multicollinearity. Multicollinearity is a condition where the intercorrelation among the independent variables is so high the researcher cannot tell which independent variables

are driving the dependent variable. Multicollinearity is a problem because it can distort the values of the regression coefficients. Regression coefficients reflect the proportion of the variance explained by the particular combination of independent variables. Multicollinearity is a problem because it can severely limit and distort the regression coefficients. Multicollinearity can also increase the variance of the regression coefficients, resulting in an unstable predictive model. These distortions make it difficult to determine the importance of the independent variables.

The underlying problem causing multicollinearity is an intercorrelation of the independent variables. Independent variables with multicollinearity are usually intercorrelated because they contain the same or nearly the same information. That is, they are redundant because they measure the same thing. This redundancy prohibits each one from adding anything new or valuable to the analysis (Sprinthall, 2000). The goal is to build a parsimonious model. Building a predictive model with redundant independent variables is inefficient. The distortions described above are also problematic. Therefore, multicollinearity must be addressed before the logistic regression is run.

There are several ways to reduce multicollinearity. The easiest way is to eliminate the redundant independent variables (Stevens, 1992). Eliminating the redundant independent variables is a common way of handling mulitcollinearity because the redundant variables measure much of the same information anyway. If one variable is eliminated, there another variable measuring the same information still exists. Thus, eliminating the redundant independent variables is a common solution.

Eliminating the redundant independent variables can be advantageous because it allows the data to be analyzed with a smaller sample size. Recall that Stevens (1992)

recommends approximately 15 observations for every independent variable. If an independent variable is eliminated, the sample size can also be proportionally reduced. To gain the potential advantages of using a smaller sample size, Stevens recommends eliminating any independent variable with an intercorrelation greater than .80. Mertler and Vannatta (2001) recommend eliminating an independent variable when its intercorrelation is at least .90. Thus, there are certain advantages to eliminating the redundant independent variables.

Multicollinearity can be identified several ways. One way is to run a principal components factor analysis on the variables. Factor analysis is a procedure designed to identify measurement overlap in the independent variables. It does this by grouping variables that measure the same thing into clusters or constructs. Once identified, redundant variables can be combined into one predictor, creating a new single independent variable. There are other ways to identify multicollinearity.

In this case, multicollinearity was identified by running tolerance and variance inflation factor (VIF) test statistics on each independent variable. Tolerance and VIF statistics measure the degree of multicollinearity among the independent variables. Tolerance measures the strength of the linear relationship among the independent variables. It is the portion of the variability not explained by the independent variable's relationship with the other independent variables. Tolerance is a value between 0.0 and 1.0. Low tolerance values indicate possible multicollinearity. Although there are no rules regarding acceptable tolerance levels, Norusis (1998) suggests that values less than .10 indicate multicollinearity. VIF also identifies multicollinearity by measuring the linear association between one independent variable and the other independent variables.

There are no rules for VIF values, but Stevens (1992) suggests that VIF scores greater than 10.0 indicate possible multicollinearity.

Tolerance and VIF test statistics were run for each independent variable. The tolerance and VIF tests revealed that multicollinearity was a potential problem with two independent variables: (a) functional differentiation, and (b) administrative intensity. The tolerance scores for these variables were close to .10 (.153 and .188, respectively), indicating potential multicollinearity. The VIF scores for these variables were less than 10.0 (6.540 and 5.331, respectively), indicating that multicollinearity was not present.

The tolerance and VIF tests produced conflicting results, so the inter-correlation of the two independent variables was reviewed. The inter-correlation between administrative intensity and functional differentiation was $r = .862$, indicating that the variables were highly correlated. Stevens recommends eliminating any independent variable with an inter-correlation of at least $r = .80$. Mertler and Vannatta (2001) recommend eliminating any independent variable with an inter-correlation of at least $r = .90$. The tests suggest that functional differentiation and administrative intensity should be eliminated or combined.

After reexamining the variables, it was determined that the two variables are redundant because they measure nearly the same thing. Functional differentiation measures the number of departments, whereas administrative intensity measures the number of administrators. The only difference between these two variables is that functional differentiation counts each department once while administrative intensity counts each administrator within a department once. The difference between this information is not important enough to justify retaining both variables at the risk of

distorting the model. Therefore, one of the variables would be eliminated. The question now is which of the two variables should be eliminated.

After careful consideration, functional differentiation was retained over administrative intensity because it has the stronger bivariate correlation with the dependent variable. The strength of the bivariate correlation between the independent and dependent variables is a justifiable basis for deciding which independent variable to retain. The bivariate correlation for functional differentiation is .535, whereas the bivariate correlation for administrative intensity is only .498. It is always preferable to use an independent variable that is more strongly correlated with the dependent variable. Table 6 summarizes the test statistics used to evaluate functional differential and administrative intensity.

Table 6: Functional Differentiation Verses Administrative Intensity

Independent Variable	Tolerance	VIF	Intercorrelation	Bivariate Correlation
Functional Differentiation	.153	6.540	.862	.535
Administrative Intensity	.188	5.331	.862	.498
Decision Rule	.100 or less	10.000 or more	.800 or more	

Conclusion of the Pre-Analysis Screening

This concludes the pre-analysis screening. Recall that the decisions made during the pre-analysis screening reduced the data to eight independent variables. Administrative intensity was eliminated due to its multicollinearity with functional differentiation. Recall also that none of observations with extreme Mahalanobis distance scores were eliminated because they were deemed to possess valuable information. The data were screened for missing data, errors, outliers, and multicollinearity, and are now ready for the logistic regression.

Logistic Regression

Introduction

The purpose of this study is to use binary logistic regression to build a model that can identify the organizational determinants of adoption. The goal is to use logistic regression to identify the independent variables (organizational characteristics) associated with the adoption of GASB 34. A logistic regression involves three steps: (a) deciding upon a logistic regression approach (listwise or stepwise); (b) running the regression model; and (c) the conclusion of the logistic regression. The discussion follows this format.

Deciding Upon a Logistic Regression Approach

There are several ways to run a binary logistic regression. Among the more common ways are the listwise and stepwise approaches. One or both of these approaches can be used to run a logistic regression. The biggest difference in the approaches is in how the independent variables are entered and removed from the model.

In a listwise regression, all the independent variables are entered into the model at once and are retained by the model whether the variables show a statistically significant relationship to the dependent variable or not. A listwise regression is used when the independent variables have already been tested for statistical significance using another technique and it is desirable to include all of them in the model. The listwise approach is also used to avoid selection bias. Problems can arise when independent variables are pre-selected. This pre-selection of independent variables can result in selection bias, which reduces the generalizability of the model (Stevens, 2001). Pre-selected independent variables are often only associated with the dependent variables in the sample in which they are tested, not with the population at large (Stevens, 2001). A listwise regression will reduce the possibility of pre-selection bias by including all the independent variables in the model.

A stepwise regression handles the independent variables differently. In a stepwise regression, all the independent variables are entered into the model, but the variables that are not statistically significant are dropped because they do not do not add value to the model. A stepwise regression uses an algorithm, which first computes the correlations between all the independent variables and the dependent variable. It then selects the

independent variable with the highest correlation and uses it as the first variable in the equation, assuming it is statistically significant. It then selects the independent variable with the next highest correlation and adds it to the equation, if it is statistically significant. The process continues until all the independent variables with statistical significance and a linear relationship to the dependent variable are added to the equation. At the conclusion of each step, the algorithm checks the equation and drops any independent variable that no longer bears a statistically significant linear relationship to the dependent variable. This approach results in the most parsimonious model, as only the independent variables with the strongest predictive values are retained by the model. This approach is recommended when there are no preconceived notions about which independent variables contain the strongest predictive value.

This study utilizes a listwise and stepwise regression because both approaches offer advantages. The listwise regression avoids selection bias. The stepwise regression results in the most parsimonious model and is best when there are no preconceived notions about the model (Mertler & Vannatta, 2001). Thus, both listwise and stepwise regression analyses are run. Any conclusions will be based on the combined findings.

Running the Regression Models

This section presents the logistic regression models. The analysis contains two regression models. The first analysis utilizes the listwise approach. The second analysis utilizes the stepwise approach. The findings are presented in this order.

Model No. 1 - A Listwise Regression

A listwise binary logistic regression is run to determine the independent variables that are most associated with the adoption of GASB 34. Eight independent variables are simultaneously entered into the model. The results indicate a model with three predictors (organizational size, responsiveness to constituents, and propensity to innovate) that is statistically significant in distinguishing between adopters and non-adopters (-2 Log Likelihood = 356.369; Nagelkereke R Square = .657; the Hosmer and Lemeshow Goodness of Fit test statistic = 15.423 with significance of .051; and χ^2 (8) = 342.533, where $p < .05$).

The -2 Log Likelihood is 356.369, indicating that the model does not perfectly predict adoption. Recall that the smaller the value of -2 Log Likelihood, the better a model is at predicting adoption. A perfectly fitting model has a -2 Log Likelihood value of zero. While this -2 Log Likelihood appears fairly large, the model can reasonably predict adoption. This will become clearer as the analysis continues.

The Nagelkerke R Square value is .657, indicating that the independent variables in the model can explain .657 of the variance in local government adoption patterns. Recall that a Nagelkere R Square value of 1.0 indicates that the independent variables explain all the variance in adoption patterns. A Nagelkerke R Square value of .657 for a model that includes only three variables (organizational size, responsiveness to constituents, and propensity to innovate) is reasonably high.

The Hosmer and Lemeshow goodness of fit test statistic, distributed as a chi-square value, is 15.423 with significance of .051. This goodness of fit statistic, given the

sample size (recall that sample size drives the chi-square value), indicates that the model is a relatively good fit, despite the significance level of .051. These findings support Hypotheses No. 1, 2, and 7, where Hypothesis No. 1 is: Pennsylvania local governments with a higher propensity to innovate are more likely to adopt GASB 34 than local governments with a lower propensity to innovate; Hypothesis No. 2 is: Pennsylvania local governments with better quality websites are more likely to adopt GASB 34 than local governments with poorer quality websites; and Hypothesis No. 7 is: Larger Pennsylvania local governments are more likely to adopt GASB 34 than smaller local governments. The null hypotheses for these three hypotheses are rejected.

The values of the observed and expected observations support this conclusion. The Hosmer and Lemeshow contingency table (not shown) displays the observed and expected values of ten cases. All are very similar in value and the table contains only a few expected values that are less than five. These findings indicate a statistically significant model that passes the goodness of fit test.

The classification table of adoption, presented as Table **7**, indicates that the model's overall predictive accuracy is 84.2%. The model can correctly predict adopters 83.0% of the time and non-adopters 85.2% of the time. This suggests that the model has a high degree of predictive accuracy. However, if only this information were used to assess the predictive ability of the model, one might incorrectly conclude that the model does a good job of predicting adoption, when this is not necessarily the case.

Table 7: Classification Table of Adopters (Listwise Regression)

	Predicted		
	Adopt or Not?		Percentage
Observed	Non-Adopter	Adopter	Correct
Non-Adopter	231	40	85.2%
Adopter	40	195	83.0%
Overall	271	235	84.2%

For example, if one uses only the distribution of the dependent variable in the classification table to predict adoption, one would correctly predict adoption only 46.44% ((40 + 195)/506) of the time. Non-adoption would be correctly predicted only 53.55% ((231 + 40)/506) of the time. These odds are barely better than random chance (e.g., 50% probability). Thus, the test statistics (-2 Log Likelihood, Nagelkerke R Square, Hosmer and Lemeshow goodness of fit, and the classification table) indicate a model that is statistically significant, but one which does not necessarily have a high degree of predictive ability.

The regression equation contains three statistically significant independent variables (organizational size, responsiveness to constituents, and propensity to innovate). The Wald statistics for these variables are: (1) organizational size 49.090; (2) responsiveness to constituents 5.561; and (3) propensity to innovate 5.051. The Wald statistic represents the degree to which the independent variable contributes to the model. A decision rule does not exist for the Wald statistic, so a judgment call is made regarding the size of the Wald statistic. A large Wald statistic is desirable, since a small Wald

statistic can cause a Type II error (e.g., the failure to reject a false null hypothesis). In this case, the Wald statistics are large enough to conclude that organizational size, responsiveness to constituents, and propensity to innovate can reasonably predict adoption. The Wald statistics are significant at .000, .018, and .025, respectively. The logistic regression coefficients are presented in Table **8**.

Table 8: The Logistic Regression Coefficients (Listwise Regression)

	B	S.E.	Wald	df	Signif.	Exp(B)
Propensity to Innovate	.133	.059	5.019	1	.025*	1.142
Responsiveness to Constituents	.053	.023	5.561	1	.018*	1.055
Occupation Specialization	-.178	.184	.936	1	.333	.837
Functional Differentiation	-.106	.071	2.217	1	.136	.900
Slack Resources	-1.205	.850	2.009	1	.156	.300
Organizational Size	2.296	.328	49.090	1	.000*	9.938
Debt Financing	.000	.000	.089	1	.765	1.000
Intergovernmental Revenue	-.035	1.192	.001	1	.997	.966
Constant	-14.222	2.443	33.888	1	.000	.000

* Statistically significant at $P < .05$

The B coefficient represents the effect a one-unit change in the independent variable will have on the log of odds while the Exp(B) coefficient is the exponentiated value of B. The B coefficient and Exp(B) coefficient of organizational size are 2.296 and 9.938, respectively. The Exp(B) coefficient indicates that every time a local government's log of revenue increases by one unit, the log odds will increase by the

Exp(B) coefficient. In this case, an odds ratio of 9.938 will increase the likelihood of adoption by a factor of 9.938 every time revenue is increased one unit.

The effect a change in the Exp(B) will have on the probability of adoption depends on the original odds. If the original odds are very small (e.g., 0 to 100), increasing the odds by a factor of 9.938 will increase the probability of adoption to 9.03% (.09938/1 + .09938). This is a small increase in the probability of adoption. By contrast, if the original odds are high (e.g., 1 to 1), the odds of adoption will increase to 9.938 to 1.0, and the probability of adoption will increase to 90.85% (9.938/(1 + 9.938)). This is a large increase in the probability of adoption. Thus, an odds ratio of 9.938 can greatly increase the likelihood of adoption, depending on the initial odds.

The last test involves an inspection of the observations with studentized residuals greater than 2.0. Observations with studentized residuals greater than 2.0 standard deviations are observations that are misclassified by the model. They represent observations that are difficult to predict based on what we know about the behavior of the other observations. This model misclassified 16 observations. Seven of the misclassified observations are adopters; the other nine are non-adopters. These observations represent outliers and 3.16% (16/506) of the sample. It is expected that the model will misclassify some observations, since the model can accurately predict adopters only 83.0% of the time and non-adopters 85.2% of the time. These observations represent the inability of the model to correctly classify all the observations.

Table No. **9** shows the misclassified observations. Additional research would be needed to determine why these local governments were misclassified.

Table 9: Misclassified Observations

Obs. #	Local Government Name	Actual Status	Predicted Status
56	Fork Twp, Northampton County	Non-adopter	Adopter
60	Spring Twp, Berks County	Non-adopter	Adopter
77	Northampton Twp, Bucks County	Non-adopter	Adopter
80	Kutztown Borough, Berks County	Non-adopter	Adopter
94	East Pennsboro Twp, Cumberland County	Non-adopter	Adopter
106	West Reading Borough, Berks County	Non-adopter	Adopter
132	South Park Twp, Allegheny County	Non-adopter	Adopter
167	Lawrence County (a Phase 2 county)	Non-adopter	Adopter
178	Indiana County (a Phase 2 county)	Non-adopter	Adopter
230	Sugar Creek Twp, Armstrong County	Adopter	Non-adopter
295	Highland Twp, Clarion County	Adopter	Non-adopter
305	Crawford Twp, Clinton County	Adopter	Non-adopter
309	Conyngham Twp, Columbia County	Adopter	Non-adopter
417	Pennsburg Borough, Montgomery County	Adopter	Non-adopter
477	Carroll Twp, Washington County	Adopter	Non-adopter
480	Jefferson Twp, Washington County	Adopter	Non-adopter

Model No. 2 – A Stepwise Regression

A stepwise binary logistic regression is run to identify the independent variables most associated with the adoption of GASB 34. The eight independent variables are simultaneously entered into the model. The stepwise process dropped the statistically insignificant variables from the model.

The results indicate an overall model with three predictors (organizational size, responsiveness to constituents, and propensity to innovate) that are statistically significant in distinguishing between adopters of GASB 34 and non-adopters (-2 Log Likelihood = 360.642; Nagelkereke R Square = .651; the Hosmer and Lemeshow

Goodness of Fit test statistic = 12.711 with significance of .122; and χ^2 (3) = 338.259, where $p < .05$).

The -2 Log Likelihood was 360.642, which indicates that the model does not perfectly predict adoption. The smaller the value of -2 Log Likelihood the better the model is at predicting adoption. A perfectly fitting model has a -2 Log Likelihood value of zero. While this -2 Log Likelihood appears large, it is actually reasonable. This will become clearer as the analysis continues.

The Nagelkerke R Square value is .651, indicating that the independent variables in the model can explain .651 of the variance in local government adoption patterns. A Nagelkere R Square value of 1.0 indicates that the independent variables can explain all the variance in the adoption patterns. Thus, a Nagelkerke R Square value of .651 for a model that includes only three variables (organizational size, responsiveness to constituents, and propensity to innovate) is fairly high.

The Hosmer and Lemeshow goodness of fit test statistic, distributed as a chi-square value, is 12.711 with significance of .122. This goodness of fit statistic, given the sample size, indicates that the model is a relatively good fit. These findings support Hypotheses No. 1, 2, and 7, where Hypothesis No. 1 is: Pennsylvania local governments with a higher propensity to innovate are more likely to adopt GASB 34 than local governments with a lower propensity to innovate; Hypothesis No. 2 is: Pennsylvania local governments with better quality websites are more likely to adopt GASB 34 than local governments with poorer quality websites; and Hypothesis No. 7 is: Larger Pennsylvania local governments are more likely to adopt GASB 34 than smaller local governments. The null hypotheses for these three hypotheses are rejected.

The values of the observed and expected observations support this conclusion. The Hosmer and Lemeshow contingency table (not shown) show the observed and expected values of ten cases. All are very similar in value and the table contains only a few expected values that are less than five. This indicates a statistically significant model that passes the goodness of fit test.

The classification table of adoption, presented as Table **10**, indicates that the model's overall predictive accuracy is 84.8%. The model can correctly predict non-adopters 85.2% of the time and adopters 84.3% of the time. This suggests that the model has a high degree of predictive accuracy. However, if only this information is used to assess the model, one might incorrectly conclude that the model can reasonably predict adoption, when this is not necessarily the case.

Table 10: Classification Table of Adoption (Stepwise Regression)

	Predicted		
	Adopt or Not?		Percent Correct
Observed	Non-Adopter	Adopter	
Non-Adopter	231	40	85.2%
Adopter	37	198	84.3%
Overall	269	238	84.8%

Using the distribution of the dependent variable shown in the classification table, the model can correctly predict non-adopters only 52.96% ((37 + 231)/506) of the time.

The model can correctly predict adopters only 47.03% ((40 + 198)/506) of the time. These odds barely improve random chance (e.g., 50% probability). Thus, the test statistics (-2 Log Likelihood, Nagelkerke R Square, Hosmer and Lemeshow goodness of fit, and the classification table) indicate a model that is statistically significant, but which does not necessarily have a high degree of predictive ability.

The regression equation contains three independent variables (organizational size, responsiveness to constituents, and propensity to innovate). The Wald statistics for organizational size, responsiveness to constituents, and propensity to innovate are 85.179, 5.174, and 5.009, respectively. The Wald statistic indicates the degree to which the independent variables contribute to the model. A Wald statistic of 85.179 is fairly large, but a large Wald statistic is more desirable than a small Wald statistic, since a small Wald statistic can cause a Type II error (e.g., failure to reject a false null hypothesis). The Wald statistics in this case are large enough to conclude that organizational size, responsiveness to constituents, and propensity to innovate are reliable predictors of adoption. The Wald statistics are significant at .000, .023, and .025, respectively. The regression coefficients are presented in Table **11**.

Table 11: The Logistic Regression Coefficients (Stepwise Regression)

	B	S.E.	Wald	df	Signif.	Exp(B)
Organizational Size	2.158	.234	85.179	1	.000*	8.653
Responsiveness to Constituents	.050	.022	5.174	1	.023*	1.052
Propensity to Innovate	.132	.059	5.009	1	.025*	1.141
Constant	-15.171	1.427	113.853	1	.000	.000

* Statistically significant at P < .05

The B coefficient represents the effect a one-unit change in the independent variable will have on the log of odds while the Exp(B) coefficient is the exponentiated value of B. The B coefficient and Exp(B) coefficient of organizational size are 2.158 and 8.653, respectively. The Exp(B) coefficient indicates that every time a local government's log of revenue increases by one unit, the log odds will increase by the Exp(B) coefficient. In this case, an odds ratio of 8.653 will increase the likelihood of adoption by a factor of 8.653 every time log of revenue is increased one unit.

The effect a change in Exp(B) will have on the probability of adoption depends on the original odds of the local government in adopting. If the original odds are very small (e.g., 0 to 100), increasing the odds by a factor of 8.653 will increase the probability of adoption to 7.96% (.08653/1 + .08653), which will be a small increase. However, if the original odds are fairly high (e.g., 1 to 1), then the odds of adoption will increase to 8.653 to 1.0, and the probability of adoption will increase to 89.64% (8.653/(1 + 8.653)), which is a large increase the probability of adoption. Thus, an odds ratio of 8.653 can increase the likelihood of adoption, depending on the initial odds.

An inspection of the observations with studentized residuals greater than 2.0 standard deviations reveals that 11 of the 506 observations are misclassified. Five of the misclassified observations are adopters; the other six are adopters. A review of these observations reveals that they are the same observations misclassified in the listwise model in the previous section, except that this list does not include Kutztown Borough, East Pennsboro Township, West Reading Borough, Pennsburg Borough, and Carroll Township. These misclassified observations represent approximately 2% (11/506) of the observations in the study. It is expected that the model will misclassify some

observations, since the model can accurately predict adopters only 84.3% of the time and non-adopters 85.2% of the time. These observations represent the inability of the model to correctly classify all the observations.

Conclusion of the Logistic Regression

The logistic regression generated two models that could consistently and reliably identify three determinants of adoption. The results indicate that organizational size, measured in terms of log of revenue, is the strongest determinant in both models. The propensity to innovate and responsiveness to constituents are also strong determinants, though not as strong as organizational size. These findings suggest that components of organizational structure (size) and organizational culture (the propensity to innovate and responsiveness to constituents) are strong determinants of adoption.

Both models are able to consistently and reliably predict adoption. The overall predictive ability of both models is 84%. The models can correctly predict adopters 83% of the time and non-adopters 85% of the time. These findings suggest that both the listwise and stepwise models could identify strong predictors of adoption. These findings support Hypotheses 1, 2 and 7, suggesting that Pennsylvania local governments that are innovative, responsive, and large are more likely to adopt GASB 34.

Chapter 4

DISCUSSION AND CONCLUSIONS

This chapter discusses the implications of the study. It contains the following sections: (a) discussion of the findings; (b) the limitations of the study; (c) areas for future research; and (d) the relevance to public administration.

Discussion of the Findings

The discussion of the findings is presented in the order of the model: organizational culture; (b) organizational structure; and (c) the external environment.

Organizational Culture

Propensity to Innovate

The propensity to innovate is positively associated with the adoption of GASB 34, as is evidenced by the variable's inclusion in both logistic regression models. The propensity to innovate is positively associated with adoption in both regression models. The T-tests support this conclusion by finding adopters more innovative than non-adopters. Mean propensity to innovate is 2.77 with a 2.30 standard deviation from the mean. The mean propensity to innovate of adopters is 3.383. The mean propensity to innovate of non-adopters is 2.236. The mean difference is -1.14 and statistically significant. These findings indicate that local governments with a higher propensity to

innovate are more likely to adopt GASB 34 than governments with a lower propensity. These findings are consistent with other studies in organizational innovativeness, which find the propensity to innovate positively associated with the adoption of innovations (Pierce & Delbecq, 1977; Rogers & Shoemaker, 1971; Zaltman & Duncan, 1977).

While it is true that innovative Pennsylvania local governments are more likely to adopt GASB 34, some of the most innovative local governments did not adopt GASB 34. A review of the most innovative local governments shows that approximately half did not adopt GASB 34. This finding raises an important question: Why did half of the most highly innovative local governments in Pennsylvania not adopt GASB 34? An examination of these local governments shows that they come from two counties: Beaver and Mercer Counties. Both counties are located in the Western part of the State and consist of small, rural, local governments. Most use municipal secretaries to keep their daily books and CPA firms to prepare their annual financial reports. More than half use CPA firms and the accrual basis of accounting, but do not adopt GASB 34.

This finding is puzzling, as it is difficult to understand why these local governments would use CPA firms to prepare their financial statements and adopt the accrual basis of accounting, but not adopt GASB 34. It seems as though the adoption of GASB 34 would be fairly easy for these local governments, given that their statements nearly comply with GASB 34 already (they use the accrual basis of accounting). Additional research is needed to determine why these local governments are highly innovative in some areas, use CPA firms, use the accrual basis of accounting, yet do not adopt GASB 34.

Another surprising feature of these local governments is their very high level of innovativeness. These local governments stand out as the most innovative in the State of Pennsylvania. They all received a high number of grants and awards, and participated in a number of innovative programs. Each of these local governments received no less than five grants during the period of question ─one received eight grants. They all also participated in one or more COGs (many participated in several COGs), more than half received the Governor's award for excellence, and more than half participated in Penn Dot's Agility Program. One local government had three Agility contracts. Thus, these local governments are highly innovative in many areas.

The fact that the most innovative local governments fall within two counties in the State of Pennsylvania is interesting in itself. This suggests that a highly innovative change agent is diffusing innovative practices to local governments in this region of the State. The presence of an active change agent would explain why these local governments adopted so many other innovative practices, but it does not explain why they did adopt GASB 34. Unfortunately, this research also does not explain whether these local governments ever heard of GASB 34, whether they considered adopting it but decided not to, or once tried it and later rejected it. It also does not explain who advises these governments on matters of financial reporting. Additional research is needed to determine why these local governments have adopted many innovations, but not GASB 34. Future research might begin by identifying the change agents that work with these local governments.

Responsiveness to Constituents

Responsiveness to constituents is positively associated with the adoption of GASB 34, as is evidenced by the variable's inclusion in both logistic regression models. Responsiveness to constituents is positively associated with adoption in both models. The T-tests support this conclusion by finding adopters more responsive than non-adopters. Mean responsiveness to constituents is 11.83 with a standard deviation of 7.42. The mean responsiveness of adopters is 16.62. The mean responsiveness of non-adopters is 7.69. The mean difference is -8.92 and statistically significant. These findings indicate that more responsive governments are more associated with adoption than less responsive governments.

These findings are consistent with other organizational innovativeness research, which finds organizations that communicate with the external environment more innovative (Aiken et al., 1980; Aiken & Hage, 1971; Kaluzny et al., 1974; Kimberly & Evanisko, 1981; McNeal, Tolbert, Mossberger & Dotterweich, 2003). These findings are important and consistent with the bimodal nature of the data of Pennsylvania's local governments.

Pennsylvania's local governments tend to fall into two groups: large, urban, local governments with full-time, expert, staff; and small, rural, local governments with part-time, generalist, staff. Phase 1 and 2 local governments tend to be the large, urban, local governments, and Phase 3 governments tend to be the small, rural local governments. The dichotomous nature of these local governments is apparent in their communication patterns. Large, urban, local governments frequently use the Internet and email to

communicate with their constituencies (the mean responsiveness of Phase 1 and 2 governments is 17.80), whereas small, rural, local governments often do not even have email or Internet capabilities (the mean responsiveness of Phase 3 governments is 7.87).

All the Phase 1 governments in the sample adopted GASB 34, 85.6% of the Phase 2 local governments adopted GASB 34, and 19.1% of the Phase 3 local governments adopted GASB 34. The adoption patterns roughly parallel patterns in Internet and email capabilities. Ninety-six percent of the Phase 1 governments have extensive Internet and email capabilities; 81.0% of the Phase 2 local governments have extensive Internet and email capabilities; and only 21.1% of the Phase 3 local governments have extensive Internet and email capabilities. In fact, 93.7% of the local governments severely lacking in Internet and email capabilities are the small, rural, Phase 3 governments.

Given these findings, it is safe to assert that responsiveness to constituents is positively associated with the adoption of GASB 34. That is, the use of technology to exchange information with the external environment is positively associated with the adoption of GASB 34. It is also safe to assert that patterns in Internet and email capabilities tend to parallel local government size, and local government size tends to parallel adoption patterns, but these findings do not indicate a causal relationship. It is not appropriate to claim a causal relationship among organizational size, Internet capabilities, and the adoption of GASB 34. All that can be safely asserted is that large, urban, local governments frequently use the Internet and email to communicate with their constituencies, while small, rural, local governments often do not have email or Internet capabilities, and these same large, urban, local governments are the ones who tended to adopt GASB 34 in high numbers.

Organizational Structure

Occupational Specialization

Occupational specialization is not included in either of the logistic regression models; however, evidence suggests that occupational specialization is positively associated with adoption. Highly specialized staff (e.g. controllers) adopted GASB 34 nearly all the time (95%), while moderately specialized staff (e.g. finance directors, chief administrators, and municipal managers) adopted GASB 34 approximately 75% of the time, and staff lacking in occupational specialization (e.g. municipal secretaries) adopted GASB 34 only 19% of the time.

Occupational specialization is not included in the regression models, yet the evidence suggests a positive association. These findings are consistent with other organizational innovativeness research, which finds occupational specialization positively associated with the adoption of administrative innovations (Becker, 1970; Rogers & Shoemaker, 1971; Kimberly & Evanisko, 1981; Rogers, 2003).

The T-tests also find a difference between adopters and non-adopters on the measure of occupational specialization. Mean occupational specialization is 4.09 with a standard deviation of 1.32. The mean specialization of non-adopters is 4.75, indicating that non-adopters are primarily municipal secretaries (municipal secretaries are coded with scores of 5.0). By contrast, the mean specialization of adopters is 3.33, indicating that adopters are more highly specialized staff. The T-tests indicate that a difference exists between adopters and non-adopters when it comes to occupational specialization.

The frequency distribution supports this finding. The most specialized staff is the county controller. Nearly all the county controllers adopted GASB 34. Controllers of Phase 1 counties adopted 100% of the time while controllers of Phase 2 counties adopted less frequently. Approximately 96% of the controllers work in Phase 1 governments.

This study hypothesized that controllers would adopt GASB 34 because they possessed occupational specialization, predisposing them in favor of administrative innovations. This may be true, but there are other factors at work. In June 2002, Pennsylvania amended Section 1705 of the Commonwealth County Code (P.L. 323, No. 130), requiring all Pennsylvania counties to make and keep financial records in accordance with GAAP. GASB 34 is a GAAP requirement, so the 2002 amendment effectively required all Pennsylvania county controllers to adopt GASB 34. All of the Phase 1 counties are in compliance with the law. Some of the Phase 2 counties have yet to adopt GASB 34.

The recent change in the law may explain some of the association between adoption and occupational specialization, but it cannot explain the high levels of voluntary adoption seen in the study. Seventy-five percent of the finance directors, 77.8% of the chief administrators, and 72.2% of the managers also adopted GASB 34, and these administrators were not required by the County Code to adopt. Most of these administrators work in non-county governments. Thus, something other than the County Code is motivating these highly specialized municipal staff to adopt GASB 34 on a voluntary basis. Could it be the occupational specialization of these staff?

Interestingly, non-specialized municipal secretaries are the only staff not adopting GASB 34 in high numbers. Only 19.2% of the local governments with municipal

secretaries adopted GASB 34. A closer analysis of these governments shows that 90% of these municipal secretaries work in small, rural, Phase 3 governments. One explanation for the lack of adoption among the Phase 3 governments may be that municipal secretaries have never heard about GASB 34. Another explanation may be that they lack the skills needed to adopt GASB 34. This research did not examine *why* local governments adopted or not. It only looked at whether they did. Thus, this research cannot answer why municipal secretaries did not adopt GASB 34; however, the lack of adoption among municipal secretaries is worth investigating.

It is difficult to understand why the municipal secretaries in Phase 3 governments tended to not adopt GASB 34 because it is arguably easy for a Phase 3 local government to adopt. Phase 3 governments only need to adopt the prospective provisions of GASB 34 and the accrual basis of accounting. This should be easy for small, rural, local governments that do not have many transactions or complex financial issues. Moreover, the DCED, Penn Dot, and Pennsylvania State Association of Township Supervisors (PSATS) offers small, rural, local governments with assistance and training on accounting issues, including GASB 34. If occupational specialization was the issue, most municipal secretaries had access to training.

These findings suggest that a lack of occupational specialization cannot fully explain the lack of adoption among municipal secretaries. The findings imply that factors beyond the organizational components identified in this study may influence adoption patterns. An exploration of these factors might begin with PSATS, the professional association and change agent for the Phase 3 local governments in Pennsylvania.

Functional Differentiation

Functional differentiation is not included in either of the logistic regression models; however, evidence suggests that functional differentiation is positively associated with adoption. Local governments with the highest functional differentiation always adopted GASB 34 (e.g., they adopted at a rate of 100%). By contrast, non-adopters possessed the least functional differentiation. That is, local governments with the lowest functional differentiation never adopted GASB 34 (e.g., they failed to adopt at a rate of 100%). These findings indicate that functional differentiation is positively associated with adoption, even if the variable is not included in the regression models.

The T-tests support this association. Mean functional differentiation is 10.56 with a standard deviation of 3.39. The mean functional differentiation of adopters is 12.5. The mean functional differentiation for non-adopters is 8.8. The mean difference is -3.63 and statistically significant in at least one test. The T-test finds the difference between the group means statistically significant, but the Levene test does not. Together, these findings suggest that functional differentiation is positively associated with adoption. These findings are consistent with other research in organizational innovativeness, which finds functional differentiation positively associated with the adoption of innovations (Lawrence & Lorsch, 1967; Kimberly & Evanisko, 1981; Walker & Lorsch, 1968).

Scholars believe that functional differentiation facilitates the adoption of innovations because varied organizational members bring different ideas to the organization for consideration (Lawrence & Lorsch, 1967). Different types of members are needed during the implementation and adoption-decision phase of organizational

innovativeness (Lawrence & Lorsch, 1967; Walker & Lorsch, 1968). This may be especially true for the adoption of GASB 34 in a local government, where many different departments would need to be involved. The department of public works, for example, might be asked to compile inventories of public roads, sewers, bridges, etc., while the departments of planning, and parks and recreation might also be recruited to help in another manner. In a large local government, the implementation of GASB 34 would require the help of many organizational members. It is easy to imagine that the cooperation and coordination of many different departments would be necessary to adopt and implement GASB 34.

By contrast, research also suggests that the more functional departments, the more the adoption-decision and implementation processes can be hindered (Lawrence & Lorsch, 1967; Walker & Lorsch, 1968). Just as it is easy to imagine how the skills of many departmental members could facilitate adoption, it is easy to imagine how coordinating the implementation of GASB 34 across many functional departments would be difficult. This study did not look at *how* the existence of functional departments affected the adoption-decision or implementation. It simply examined the association of functional departments with adoption patterns and found a positive relationship. Additional research would be needed to explore how the adoption-decision and implementation process is helped or hindered by functional differentiation.

Administrative Intensity

Administrative intensity was eliminated during the pre-analysis screening due to possible multicollinearity. As a result, it was not entered into the regression models. Nevertheless, the T-tests indicate that administrative intensity differs between adopters and non-adopters. Mean administrative intensity is 16.62 with a standard deviation of 4.35. The mean administrative intensity of adopters is 18.95 and 14.61 for non-adopters. The mean difference is -4.34 and the difference is statistically significant for both the T-test and Levene test of homogeneity, indicating a positive association between adoption and administrative intensity.

A closer examination reveals that nearly all the adopters have high administrative intensity while nearly all the non-adopters have low administrative intensity. These findings support the assertion that administrative intensity is positively associated with the adoption of GASB 34. This is consistent with existing research, which finds administrative intensity positively associated with the adoption of administrative innovations (Blau & Schoenherr, 1971; Damanpour, 1987). Prior research finds that administrators are more likely to hear about and bring administrative innovations to the workplace (Blau & Schoenherr, 1971; Damanpour, 1987). They are also more likely to recognize the importance of an administrative innovation and to be in favor of it. This research did not attempt to identify causal relationships, but it did find administrative intensity positively associated with the adoption of GASB 34, an administrative innovation.

Availability of Slack Resources

The evidence for the availability of slack resources is mixed. Slack resources are not included in either of the logistic regression models, suggesting that slack resources are not associated with adoption. The mean of slack resources is -.0016 (a deficit) with a standard deviation of .164. The mean for adopters is .00724 while the mean for non-adopters is -.00927. The mean difference is -.016 and statistically significant in at least one test. The T-test does not find the difference statistically significant, but the Levene test of homogeneity does at .000. Thus, the findings are mixed for adoption and slack resources.

An examination of slack resources indicates that 78% of the organizations with the largest deficits did not adopt GASB 34. Beyond the association of very large deficits and non-adoption, governments were as likely to adopt as they were to not adopt. In other words, the ratio of adoption to non-adoption was about a 1:1 ratio. This indicates that adoption is not associated with slack resources. These findings do not support the hypothesis that organizations with more available slack resources are more likely to adopt administrative innovations.

These findings are inconsistent with the existing research, which finds available slack resources positively associated with the adoption of innovations (Rosner, 1968). Research suggests that innovations requiring large investments are positively associated with adoption (Rosner, 1968). The theory is that only organizations with sufficient resources can adopt innovations requiring large initial investments. This study has always assumed that GASB 34 would require a large initial outlay of funds, particularly

if the local government needed to retroactively record its infrastructure assets. However, the lack of association between slack resources and adoption suggests that GASB 34 may not require a large initial investment.

The data do not show an association between adoption and slack resources, but some patterns in the data were noted. Adopters tended to be large, urban, local governments with modest deficits. They were usually Phase 2 governments with specialized staff, high debt, and modest deficits. The data does not show what caused the debt or deficits. It also does not indicate why these local governments decided to adopt GASB 34. All the data indicates is that the governments who adopted GASB 34 tended to be large, urban, local governments with specialized staff, large amounts of debt, and modest deficits. By contrast, the governments with the largest deficits did not adopt GASB 34. This indicates that if a relationship does exist between slack resources and adoption, it may be curvilinear.

These findings raise the following questions: How could large, urban, local governments with fairly high deficits afford to adopt GASB 34 and what caused the deficits? Did the implementation process cause the deficits or were the deficits caused by existing debt service requirements? Did these local governments adopt because they had deficits and were expecting to raise capital with debt financing in the near future? Did they need GAAP-compliant statements to enter the bond market? Additional research is needed to understand the relationship between available slack resources and the adoption of GASB 34.

Organizational Size

Organizational size is strongly and positively associated with adoption, as is evidenced by its inclusion in both regression models. This variable has the strongest association of all the variables in the models. The Wald statistic is 85.179 in the stepwise model and 49.090 in the listwise model. By contrast, the Wald statistics are only about 5.0 for the two other variables in the models. This indicates that organizational size is a strong and positive determinant of adoption.

The T-tests support this conclusion. The mean of organizational size is 6.45 with a standard deviation of 1.00. The mean of adopters is 7.2124; the mean of non-adopters is 5.7854. The mean difference is -1.42. The T-test finds the difference statistically significant, but the Levene test of homogeneity does not. Together, these findings support the hypothesis that adopters and non-adopters differ on organizational size. These findings are consistent with existing research, which finds organizational size positively associated with the adoption of innovations (Aiken & Hage, 1971; Kaluzny et al., 1974; Kim, 1980; Moch & Morse, 1977; Mytinger, 1968; Rosner, 1968).

As previously mentioned, size has special implications for Pennsylvania's local governments. In June 2002, Pennsylvania legislators amended the County Code (P.L. 323, No. 130), requiring Pennsylvania counties to make and keep financial records in accordance with GAAP. This change effectively requires counties to adopt GASB 34, since GASB 34 is a requirement of GAAP. Counties are among the largest of the Pennsylvania's local governments (most are Phase 1 governments), so it is not surprising that organizational size is strongly associated with the adoption of GASB 34.

However, the change in Pennsylvania's laws cannot account for all the statistical association between adoption and organizational size. All the Phase 1 governments, 85% of the Phase 2 governments, 19% of the Phase 3 governments adopted GASB 34, but most of these governments are not counties. Counties represent only 13% (67/506) of the sample. The remaining 170 (235 adopters – 65 adopting counties) local governments in the sample adopted GASB 34 on a voluntary basis. This raises the question: Why did some local governments voluntarily adopt GASB 34 while others did not? Size is positively associated with adoption, but the reason for the association is unclear. Additional research is needed to more fully understand the relationship of organizational size and the adoption of administrative innovations such as GASB 34.

The External Environment

Debt Financing

Debt Financing is not included in the logistic regression models; however, there is evidence to suggest that debt financing is mildly associated with adoption. The data show that the many of the local governments with the highest and lowest amounts of debt financing did not adopt GASB 34 while the organizations with mild to moderate debt did tend to adopt GASB 34. These findings indicate that debt financing is mildly associated with adoption, but the association is not linear.

The T-tests support this conclusion. Mean debt financing for all the sampled governments is $508. The mean debt for adopters is $682 and the mean for non-adopters

is $357. This produces a mean difference of $325. The T-test finds the difference between the group means statistically significant, but the Levene test does not find the difference between the group variances statistically significant. Together, these findings indicate that debt financing may be mildly associated with adoption.

The data were examined further to explore the unusual adoption pattern described above. The examination revealed that most of the governments who adopted GASB 34 had moderate levels of debt financing, but not high levels of debt financing as expected. For some reason, the local governments with the highest amounts of debt did not adopt GASB 34. This pattern is contrary to what was expected. Local governments with high levels of debt were expected to adopt GASB 34 to satisfy their inter-organizational interdependencies with creditors and bond-raters, but this does not seem to happen.

Non-adopting local governments with high amounts of debt were examined further to reveal why they did not adopt. The examination revealed that non-adopting local governments falls into two distinct groups. In one group is a set of very small, rural, local governments that do not necessarily have excessive amounts of debt, as much as they lack the population base needed to pay their modest debt. These governments all run deficits (negative slack resources), use municipal secretaries to keep their books, and use the cash basis of accounting. None are affiliated with CPA firms who could assist them with adoption or financial reporting. They are all Phase 3 local governments and none has a website. Given what we now know about Pennsylvania local governments, these governments would not be expected to adopt GASB 34.

The other set of non-adopting local governments is more puzzling. They have very high levels of debt and deficits. This group consists entirely of boroughs and all but

one is located in Berks County. These boroughs generally use municipal secretaries and the cash basis of accounting, but they also use CPA firms to prepare their financial reports. However, despite their affiliations with CPA firms, none of them adopted GASB 34. Two of these local governments are Phase 2 governments; the other two are Phase 3 governments. These boroughs are unusual in that they could conceivably reduce the interest rates on their debt by adopting GASB 34, yet they fail to do so. They could also easily adopt GASB 34 through their existing relationship with their CPA firms, yet they do not do so. The reason for their choices is unclear. It is equally difficult to understand why the CPA firm change agents have not convinced their clients to adopt GASB 34. Perhaps these governments do not adopt because they are already experiencing deficits and do not wish to incur what they perceive of as unnecessary expenses to implement GASB 34.

Whatever reason these local governments have for not adopting GASB 34 is beyond the scope of this study. Their behavior is inconsistent with existing research, which finds debt financing positively associated with the adoption of innovations. The adoption of GASB 34 is mildly associated with debt financing in this study, but the adopters are not the local governments with the highest levels of debt financing. Moreover, the adopters tend to be local governments with mild to moderate debt, not high levels of debt financing, causing the relationship between adoption and debt to be curvilinear. The findings for debt financing are mixed. Additional research is needed to explore the reasons for these unusual findings.

Intergovernmental Revenue

Intergovernmental revenue is not included in the logistic regression models; however, the T-tests suggest that the variable is negatively associated with adoption. The mean of intergovernmental revenue is 19.2% with a 15.9% standard deviation from the mean. The mean of adopters is 15.35%. The mean of non-adopters is 22.67%. The mean difference is 7.03 and statistically significant; however, adopters tend to have higher, not lower, intergovernmental revenue than non-adopters. This indicates a negative association between adoption and the receipt of intergovernmental revenue. This finding is inconsistent with the existing research, which finds the receipt of intergovernmental revenue positively associated with organizational innovativeness (Pugh, Hickson, Hinings, & Turner, 1968, 1969).

A closer examination shows that local governments with moderate and high intergovernmental revenue do not adopt GASB 34, while local governments with low intergovernmental revenue do adopt. The reason for this inverse relationship is not clear; however, certain assertions can be made. The biggest recipients of intergovernmental revenue are not adopting GASB 34 for the purpose of providing grantors with greater financial transparency and accountability, as expected. Instead, the governments receiving the least intergovernmental revenue are adopting GASB 34 in the highest numbers. This research cannot explain why the intergovernmental revenue is negatively associated with the adoption of GASB 34. Perhaps this is what Evan's (1996) meant when he said that boundary and inter-organizational relationships are complex and must be investigated carefully to understand the effect they have on innovativeness.

Conclusion of the Discussion

Organizational size is a strong and positive determinant of adoption and innovativeness. This association was evident in all the statistical tests. The propensity to innovate and responsiveness to constituents are also positively associated with adoption. These associations were also supported by the statistical tests. The propensity to innovate and responsiveness to constituents are components of organizational culture, while organizational size is a component of organizational structure. These findings suggest that the choices administrators make regarding organizational structure and culture may affect organizational innovativeness.

The other six variables are less strongly associated with adoption. Occupational specialization, functional differentiation, administrative intensity, the availability of slack resources, and debt financing are associated with adoption, but the strength of the association is mild to moderate. None of these variables were included in the regression models. Intergovernmental revenue is only weakly associated with adoption and the association is negative. It, too, was excluded from the models. These variables may be associated with adoption, but the associations are not strong enough to make them consistent determinants of adoption. Nevertheless, all these variables provide some contribution to our knowledge of public administration, organizational innovativeness, and governmental accounting.

Limitations to the Study

This study identifies several determinants that can reasonably predict the adoption of GASB 34; however, the study has several shortcomings. First, the results of the study are not generalizable to the adoption of any administrative innovation, except GASB34, or to any local government, except those in Pennsylvania. The sample is sufficiently large and randomly drawn, but it contains only Pennsylvania local governments and deals with only one innovation. The characteristics of Pennsylvania's local governments, state laws, financial reporting requirements, and change agents are unique to Pennsylvania, so the study cannot be generalized to local governments outside of Pennsylvania. The study also deals with only one administrative innovation −GASB 34. Therefore, the findings cannot be inferred to any other organizations or innovations than those in this study.

The data are able to answer certain questions about whether GASB 34 is adopted or not, but it cannot answer any questions about *why* it was adopted or not. This limitation is due primarily to the nature of the data. The data used in this study are quantitative. They are numeric data derived almost entirely from archival databases. The data do not contain qualitative information, such as interviews and open-ended questions. The quantitative nature of the data used in the study means that the study can answer only certain limited questions about what seem to have happened. It cannot answer why any of those things happened. Thus, the study is limited due to the nature of its data.

The study is also unable to identify causal relationships. The study is able to produce statistically significant associations, but it cannot produce findings that suggest

causal relationships. Thus, the findings are interpreted as statistical associations, not causal relationships.

The study is also limited by its dichotomous dependent variable. The binary dependent variable significantly restricts the statistical methods available for data analysis. Logistics regression is one of the few approaches that can be used to analyze statistical findings with a dichotomous dependent variable.

Finally, the study looks at only nine independent variables and one dichotomous dependent variable. These are variables that conveniently fit into the model of organizational innovativeness. It is possible that other organizational determinants, which are not included in this model, could produce just as strong statistical associations with adoption. Thus, this study is important, but it is limited by its choice of population, data, and methodological approach.

Areas for Future Research

This study identifies several objective organizational determinants that can reasonably predict the adoption of GASB 34, but the topic could be explored in much more detail because it fails to answer many important research questions. For example, the study does not look at why local governments did (or did not) adopt GASB 34. It does not look at what influenced the administrators of these local governments in their decisions to adopt. It does not teach us anything about the role change agents may have played in diffusing the innovation to administrators. It also teaches us nothing about the role local or national politics may have played in adoption decisions.

This study does not show us the effect training may have effected the decisions to adopt. It teaches us nothing about how the adopting local governments implemented GASB 34, the obstacles they faced, or the costs they incurred. It teaches us nothing of the decision process or how the characteristics of the innovation influenced adoption. It does not even indicate whether the local governments ever heard of GASB 34. Thus, we do not know if local governments chose to adopt GASB 34, or if they never heard of it. These things are not learned through this research.

These questions could be answered by using the Rogers' model to delve deeper into the diffusion and adoption of GASB 34. Future research could explore: (a) the innovation-decision process; (b) the attributes of the innovation; (c) characteristics of the adopters; (d) diffusion networks; (e) the role of change agents; (f) innovation in organizations; and (g) the consequences of innovation.

The Innovation-Decision Process

The Rogers' model could be used to examine the innovation-decision process. The innovation-decision process begins with a would-be adopter's knowledge of an innovation. The process progresses to the formation of an opinion about the innovation, to a decision to adopt or reject, the implementation of the innovation, and the confirmation of the adoption decision. The innovation-decision process consists of five stages: knowledge, persuasion, decision, implementation, and confirmation; and it can be applied to individual or organizational adopters.

Knowledge is dependent upon the would-be adopter's socioeconomic characteristics, personality variables, and communication behavior. Wealthier and more educated would-be adopters tend to adopt earlier than their less wealthy and educated counterparts. Early adopters are also more cosmopolite and have greater access to mass media and interpersonal communications. Knowledge is largely a matter of cognition (what information is received) whereas persuasion is a matter of affect or feelings (how the innovation is perceived).

During the persuasion stage, the would-be adopter experiences uncertainty and seeks information to reduce this uncertainty. This information is used to evaluate the innovation. Some would-be adopters experience an attitude-adoption gap. These would-be adopters consider adopting, but do so mainly to prevent the occurrence of an unwanted event (i.e., they fear criticism or a loss). Others consider adopting due to a cue-to-action, a crisis that scares them into adoption. Others are influenced by more positive influences (i.e., they perceive themselves as efficacious and able to implement the innovation).

The decision stage occurs when the would-be adopter participates in events that lead to a decision to adopt or reject. Would-be adopters can actively decide to reject an innovation. This happens when they consider the innovation, but ultimately decide to reject it. Would-be adopters can also passively reject an innovation. This happens when they never really consider the innovation. Rogers (1995) cautions that organizational culture and sociocultural factors always influence the adoption-decision process.

The implementation stage occurs when the adopter puts the innovation to use. Implementation always involves overt behavior. One of the more fascinating aspects of implementation is re-invention. Re-invention is the modification of an innovation or the

adaptation of an innovation for customized use. Early diffusion studies assumed that re-invention was rare and that adopters adopted fully without modification. More recent research has indicated that re-invention is quite common and that it occurs when the innovation is complex, loosely bundled with other technologies, or when the adopter fails to fully understand the innovation. An interesting aspect of implementation involves the degree to which the innovation is re-invented. Rogers (1995) notes that organizations encounter implementation problems more frequently than individuals and implementation can represent the commencement or termination of an innovation.

During the confirmation stage, the adopter attempts to gain information that reinforces the decision to adopt. This is done primarily to reduce the dissonance experienced after adoption. Dissonance is the disequilibrium felt by humans when they are uncomfortable about something. It is a normal but uncomfortable condition, so humans strive to reduce it. During this stage, the adopter seeks new information that either confirms the decision to adopt or causes a discontinuance of the innovation. Disenchantment discontinuance occurs when someone ceases to use the innovation because they are dissatisfied with its performance. Replacement discontinuance occurs when the adopter rejects the first innovation and adopts a superior innovation.

The Rogers' (1995) model can be used to look at any stage of the innovation-decision process, keeping in mind that the stages of the diffusion process are not necessarily distinct. The diffusion process often takes many years, so researchers should conduct longitudinal studies that look more at the diffusion process and less at the attributes of the innovation and adopter. Researchers should also avoid one-shot studies. Studies of the innovation-process require longitudinal examinations and mixed research

methods. They might also involve an examination of the communication patterns of would-be adopters.

Attributes of the Innovations

The Rogers' (1995) model could also be used to examine the characteristics of the innovations and how those characteristics affect the rate of adoption. Based on existing research, we know that innovations are more likely to be adopted, if they provide the would-be adopter with an advantage such as prestige or profitability; if they are compatible with the adopters current practices, values and beliefs; if they are simple rather than complex; and if the adopter can try them out or observe others using them prior to adoption.

Communication channels affect the rate of adoption. Interpersonal communications are more influential than mass media communications in decisions to adopt, but the rate of adoption is slower when interpersonal communications are the main mode of communication. The rate of adoption is also affected by the nature of the social system and the degree to which the change agent tries to promote the innovation. The Rogers' model is especially good for studying mandates such as GASB 34, as innovations need not be mandatory in order to be applied to the theory.

Characteristics of the Adopters

The Rogers' model is especially good for examining the characteristics of the adopters. For this reason, researchers often look at the characteristics of the adopters. Based on existing research, we know that innovators and early adopters tend to come from higher socioeconomic backgrounds, have better access to information, are more intelligent and rational, have better attitudes towards science and change in general, and are better able to cope with uncertainty.

Adopters have been classified into five categories: innovators, early adopters, early majority, late majority, and laggards. Innovators are very progressive while early adopters are cosmopolitan and seek prestige and respect. The early majority is deliberate in their actions while the late majority is downright skeptical. Laggards are the last to adopt and may not adopt. They are suspicious of innovations and change agents.

As is true for any human trait, the classifications of adopters are normally distributed along a bell-shaped curve. The rate of adoption follows an S-shaped curve. Adoption is slow in the beginning, until it builds a critical mass. Then adoption is rapid. It eventually levels off after most of the would-be adopters have adopted. Examining the characteristics of adopters is an excellent way to research the adoption of GASB 34; however, researchers should keep in mind that adopters of administrative innovations such as GASB 34 are organizations, not individuals. Thus, researchers can examine the characteristics of individuals within organizations, but they cannot attribute the adoption decisions of organizations to individuals. When examining the adoption decision of organizations, it is appropriate to use a model of organizational innovativeness.

Diffusion Networks

The Rogers' model could also be used to look at the role diffusion networks have played in the adoption of GASB 34. Early researchers believed that the mass media had a direct and powerful influence on a mass audience. We now know that people are more highly influenced by their interpersonal communications than they are by the mass media. We also know that people tend to communicate with people similar to themselves, but are often influenced by people of higher socioeconomic status.

Rogers defines two classes of people with the potential ability to influence would-be adopters: (a) opinion leaders, and (b) change agents. Opinion leaders are influential people within the community. Opinion leaders usually have a high degree of exposure to mass media, are accessible, possess high social status, and are more innovative then their followers. Change agents are employees of the organizations promoting the change. Change agents attempt to diffuse innovations in their roles with organizations, such as universities and governmental agencies. They are usually higher in socioeconomic status than the would-be adopters and this can create a barrier to communication, since communication between homogeneous people is usually more effective than communication between heterogeneous people.

There are four ways to examine diffusion network: (a) sociometrics; (b) informant ratings; (c) self-designated techniques; and (d) observation. A researcher using a sociometric approach would ask respondents from whom they sought advice. The researcher would ask this as an open-ended question and allow for an unlimited number of responses. This method has the highest validity. A researcher using informant ratings

would attempt to determine whom the adopters might interact with and limit their inquiries to these parties. This method is the most cost-efficient, but it requires knowledge of the network in the research design. The self-designated techniques ask a series of question to determine the extent to which the respondents perceive of themselves as opinion leaders. This approach is obviously subject to perceptual biases. Finally, researchers can simply observe and record information about communication patterns within the network. This method has high validity, but it can be intrusive and costly. Regardless of the approach taken, researchers cannot fully understand the diffusion and adoption of an innovation until they understand the role of relevant diffusion networks. Additional research could explore the role of diffusion networks in diffusing GASB 34.

The Role of Change Agents

The Rogers' model could be used to look at how change agents influence the diffusion and adoption process. A change agent is someone who works in an organization and is charged with influencing clients about innovations. The role of the change agent is to facilitate the adoption of innovations among a particular client-base. The role of the change agent has a logical sequence: (a) develop a need for change; (b) establish an information-exchange relationship; (c) help diagnose the client's problems; (d) motivate the client to change; (e) translate intent into action; (f) stabilize adoption and prevent discontinuance; (g) achieve a terminal relationship.

Change agents generally have more success in getting clients to adopt if they spend time communicating with the client, if they are empathetic with and trusted by the client, if they are more oriented toward the client than the change agent's organization, and if the innovation is compatible with the client's needs. Change agents are impaired in their ability to effect change to the extent that they are dissimilar from the client. Differences in socioeconomic status and demographics are barriers to the communication and diffusion process. For this reason, change agents must either learn to communicate with lower-status clients or use aides that are more homogeneous with the client.

Rogers warns that trust is an important factor in the diffusion of innovations. Change agents that are unable to develop trust with the client will be ineffective. Likewise, the assistants of change agents that dress in suits or otherwise attempt to mimic the change agent will also be ineffective, particularly in rural communities and third world countries where most of the diffusion efforts take place. Field campaigns that take innovations to the field and provide demonstrations are effective and can help to build trust, providing the change agent works to develop it. Additional research about GASB 34 could look at the role of change agents.

Innovation in Organizations

This study showed one way to examine organizational innovativeness. There are many ways to research organizational innovativeness. One of these ways is to look at the decision process within an organization. Decisions to adopt innovations can be individual, authoritative, or collective. Individual decisions are the easiest to research

because they involve one decision-maker. Authoritative decisions are also easy to research because they are made by a few individuals with the status or formal position power to make them. Organizational decisions are collective and often require consensus. Organizational decisions are the most difficult to research because they cannot be attributed to individuals. Instead, researchers must use a model of organizational innovativeness.

Researchers studying organizational innovativeness must make the organization, not the individual, the unit of analysis. A common mistake is to reduce the organization to one decision-maker. In order to properly study organizational innovativeness, the researcher must look at how the diffusion and adoption process occurred *within* the organization, not the individual. The best way to do this is with a longitudinal study that looks at the innovation process or by using one of the models of organizational innovativeness.

We know certain things about organizational innovativeness from prior research. We know that larger organizations are more innovative than smaller ones and that centralization impairs innovation. We know that organizations with highly trained and specialized members tend to be more innovative than those with generalists. Complex internal and external environments are also positively associated with organizational innovativeness; however, implementation is more difficult in complex organizations and complex organizations have a harder time achieving consensus. Highly interconnected networks within organizations enhance the diffusion of adoptions and innovativeness, as does the availability of slack resources. Researchers wishing to study organizational innovativeness must examine the organizational determinants of innovation, not

individual attributes. And, they must study the diffusion and adoption process, as well as the organization's characteristics.

Implementation is a key way to study organizational innovativeness and the diffusion process. Implementation focuses on the way the innovation is put to use, rather than on way the decision is made. The implementation process consists of re-invention, clarification, and institutionalization. Re-invention is the way in which the innovation or organizational structures are modified to make the innovation compatible with the organization. Clarification is the organization's attempt to better understand the innovation and its relationship to the organization. Institutionalization is the process of making the innovation routine or part of the organization's everyday existence.

The implementation process can be influenced by financial uncertainty, technical uncertainty, and social uncertainty. An innovation champion (an organizational sponsor) can enhance the implementation process, providing the champion is a high-level person who uses his or her status to influence the diffusion and adoption process. There are many ways to look at organizational innovativeness. A case study to examine the implementation of GASB 34 would be an excellent approach.

Consequences of Innovation

The Rogers' model could also be used to examine the consequences of an innovation. Not all innovations are good. Innovations always widen the socioeconomic gap between the haves and the have-nots, and innovations can have very undesirable unintended impacts. All innovations have desirable, direct, and anticipated

consequences. The same innovations can have undesirable, indirect, and unanticipated consequences. The desirable effects of an innovation cannot be parsed out or separated from the undesirable effects.

The Rogers' model could be used to examine the positive and negative effects of GASB 34; however, there are several things the researcher must know about studying innovation consequences. First, consequences are difficult to measure, and, for this reason, tend to be understudied. Thus, there is a gap in our knowledge about innovation consequences. We know that change agents tend to promote the positive effects of innovations while ignoring the potential negative effects, and we know that the traditional positivistic research approaches are inappropriate for studying consequences.

The case study method is more appropriate than empirical research for studying innovation consequences, but the case study approach produces results that are not generalizable. Further complicating innovation consequence research is the fact that consequences often do not emerge until well after the innovation is implemented. Thus, researchers must conduct longitudinal studies of consequences. Consequences are also relative to culture and perception. This presents additional problems related to data measurement.

Finally, the consequences of an innovation are often compounded by other events, other innovations, and how the innovation was introduced, making it difficult to parse out the positive and negative effects of an innovation. Despite these difficulties, the Rogers' model can be used to study the consequences of innovations.

Conclusion of Areas for Future Research

This study only touched the surface of what we could know about the diffusion and adoption of administrative innovations. The Rogers' model provides an excellent framework for studying public administration, organizational innovativeness, and government accounting policy. It applies well to topics in the fields of public administration, organizational theory, governmental accounting, and public policy.

The Rogers' model is very similar to the stages of the policy process, which include agenda setting, implementation, and evaluation. Diffusion theory is similar to agenda setting because they are both communication theories that look at how ideas are communicated and accepted. Diffusion theory can be used to look at how resistance to change was overcome or how new policies were implemented. Diffusion theory can be used to study policy implementation or program evaluation. It can be used to look at who is doing what, to what extent, and why. It can measure the effectiveness of policy implementation. Even the change agent in diffusion theory resembles the concept of policy entrepreneur in policy studies. In these ways, Rogers' theory of the diffusion and adoption of innovations is closely related to the stages of the policy process.

The roots of diffusion theory are in rural sociology, making it especially applicable to studies about small, rural, local governments. However, the researchers need not be limited to small, rural local governments. The Rogers' model can look at the diffusion and adoption of innovations in large public organizations. The Rogers' model has already been used to examine government mandates and programs administered in large organizations such as public health agencies. Rogers' model is applicable to many

topics in public administration, yet scholars of public administration rarely use the theory for research.

Scholars of public administration can advance the theory of diffusion and adoption by using Rogers' model to examine the diffusion and adoption of accounting innovations in public organizations. The Rogers' model is a widely used and interdisciplinary approach to research. The fields of management, marketing, education, communication, sociology, information technology, medicine, and public health embrace diffusion theory. Scholars of public administration and governmental accounting should likewise use the theory to answer questions about the diffusion and adoption of accounting innovations in public organizations. By continuing this field of research, scholars will simultaneously contribute to our knowledge of public administration, organizational innovativeness, and governmental accounting.

Relevance to Public Administration

GASB 34 is arguably the most important change in governmental accounting history, yet we know little about whether local governments have adopted it. GASB 34 was initially unpopular among certain Pennsylvania local governments and their professional associations. Additionally, many of Pennsylvania's small, rural, local governments may lack the capacity to implement it. Change agents may have tried to influence its adoption, yet we know little about whether those efforts have been successful.

This study sheds light on the extent to which GASB 34 has been adopted by local governments in Pennsylvania and important information about those local governments.

This information is important to policy makers, would-be adopters, local government administrators, elected officials, and any organization contemplating adoption. It is also important to state agencies charged with financial reporting oversight. The study is even more important to scholars of public administration and organizational theory, who wish to understand organizational innovativeness more thoroughly. This study contributes to our knowledge of the interface of public administration, organizational theory, and governmental accounting. This knowledge can be applied to the formulation and adoption of future administrative innovations in public organizations.

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Appendix A

Website Disclosure Index

WEBSITE DISCLOSURE INDEX

LOCAL GOVERNMENT NAME & COUNTY _____

CONTACT INFORMATION & EMAIL

_____ 10. Website contains email of MOST members
_____ 9. Website contains email of MANY KEY members
_____ 8. Website contains email of a FEW members
_____ 7. Website contains only ONE organizational email
_____ 6. Website contains NO email
_____ 5. NO website but contact info of MANY KEY members thru COUNTY or COG website
_____ 4. NO website but contact info of a FEW members thru COUNTY or COG website
_____ 3. NO website but contact info of ONE organizational member thru COUNTY website
_____ 2. NO website but the municipal name AND address can be found thru GOOGLE
_____ 1. NO website and NO contact information can be found thru GOOGLE or COUNTY

MEETING CALENDAR AND MINUTES

_____ 7. Website contains BOTH the upcoming meeting calendar AND archived minutes
_____ 6. Website contains EITHER the meeting calendar OR archived minutes
_____ 5. Website DOES NOT CONTAIN a meeting calendar or minutes
_____ 4. NO website but meeting calendar AND archived minutes are available thru COUNTY
_____ 3. NO website but meeting calendar OR minutes are available thru COUNTY
_____ 2. NO website but meeting calendar OR minutes is found on GOOGLE
_____ 1. NO website and NO calendar or minutes can be found on GOOGLE or COUNTY

FINANCIAL DISCLOSURES

_____ 6. Website contains current AND archived financial reports AND/OR budgets
_____ 5. Website contains current OR archived financial reports OR budgets
_____ 4. Website contains NO financial reports or budgets
_____ 3. NO website but certain financial reports or budgets are available thru COUNTY
_____ 2. NO website but certain financial reports or budgets can be found on GOOGLE
_____ 1. NO website and NO financial reports or budgets can be found on GOOGLE

_____ TOTAL SCORE (Add score obtained in each category above; possible range of 3 to 23)

Appendix B

Local Government Questionnaire

LOCAL GOVERNMENT QUESTIONNAIRE

Dear _____,

The following information is being requested pursuant to the Pennsylvania Right to Know Law. The information will be used in a study about the accounting practices of Pennsylvania's local governments. Prior to receiving this request, substantial amounts of public information were already collected about you and 500 other local governments selected for the study. Therefore, it is very important that you comply with the request. Thank you for cooperating.

1. Please indicate the date below that best describes when your local government adopted GASB Statement No. 34:

_____ December 31, 2001
_____ December 31, 2002
_____ December 31, 2003
_____ December 31, 2004
_____ December 31, 2005
_____ We have yet to adopt GASB Statement No. 34
_____ I am not sure
_____ Other (please explain) _____

2. Please indicate whether your local government's financial statements were compliant with Generally Accepted Accounting Principles (GAAP) for the year ended December 31, 2002:

_____ Yes, we were GAAP-compliant
_____ No, we were not GAAP-compliant
_____ I am not sure

3. Please indicate the method of accounting that best describes the method your local government used to prepare the government funds of its annual financial statements for the year ended December 31, 2002:

_____ The accrual basis of accounting
_____ The modified accrual basis
_____ The cash basis of accounting
_____ I am not sure

Thank you!
Patricia A. Patrick
Doctoral Candidate
Program of Public Administration
School of Public Affairs
Penn State Harrisburg

Please indicate your responses by checking the appropriate boxes and return this page to:

Patricia A. Patrick

VITA

Patricia A. Patrick

EDUCATION

PhD in Public Administration (May 2007), Penn State Harrisburg
Master's in Business Administration (August 2003), Penn State Harrisburg
Bachelor's of Science in Business Administration with a major in Professional Accountancy (May 1986), Penn State Harrisburg

PROFESSIONAL DESIGNATIONS AND AWARDS

Certified Public Accountant (CPA), PA #CA-025694L; February 1989 to Present
Certified Fraud Examiner (CFE), November 2000 to Present
Recipient of 2000 Walker Award for score on the CFE exam
Recipient of 2003-2004 Graham Fellowship for superior academic achievement
Recipient of 2006 American Accounting Association Dissertation Grant
Recipient of 2006 Association of Government Accountants Dissertation Award

PUBLICATIONS

Gabbidon, Shaun L., & Patrick, Patricia A. (January 2005). Characteristics and Outcomes of Shoplifting Cases In the U.S. Involving Allegations of False Arrest. *Security Journal, Vol. 18,* 7-18.

Gabbidon, Shaun L., Patrick, Patricia A., & Peterson, Steven A. (April 2006). An Empirical Assessment of Employee Theft Lawsuits involving Allegations of Employer Misconduct. *Journal of Criminal Justice, 34,* 2, 175-183.

Morcol, Goktug & Patrick, Patricia A. (January 2006). Business Improvement Districts in Pennsylvania: Implications for Democratic Metropolitan Governance. *International Journal of Public Administration, Vol. 29, Issues 1-3,* 137-172.

Patrick, Patricia A. & Gabbidon, Shaun L. (October 2004). False Arrest Lawsuits against Retailers: Fact or Fiction? *Security Management, Vol. 48, No. 10,* 48-64.

Patrick, Patricia A. & Gabbidon, Shaun L. (Fall 2006). A Commentary on Bowden v. Caldor: A Case Study of the Intersection of Racial Animus and Private Security Misconduct. *Journal of Ethnicity in Criminal Justice, Vol. 4, Number 4,* 51-64.

MEMBERSHIPS

Member, American Institute of Certified Public Accountants, April 1989
Member, Association of Certified Fraud Examiners, November 2000
Member, Beta Gamma Sigma, Business and Management Honor Society, March 2002
Member, Sigma Iota Epsilon, Management Honor Society, April 2003
Member, Pi Alpha Alpha, Public Affairs and Administration Honor Society, May 2005
Member, American Accounting Association, August 2005
Member, Association of Government Accountants, August 2006