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Local Government Management Innovation Nested in State Government Levels: Local Service Delivery Contracting and Performance Measurement

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LOLCAL GOVERNMENT MANAGEMENT INNOVATION
NESTED IN STATE GOVERNMENT LEVELS: LOCAL
SERVICE DELIVERY CONTRACTING AND PERFORMANCE
MEASUREMENT

By

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ABSTRACT

The interaction of policy and management presents a close relationship in administrative practices. This dissertation estimates the impacts on use of local performance measures related to local service contracting. The previous research only tested individual state level or local level, rather than estimated how state factors influence local practices. For example, the hierarchical rules, mandates, and laws made by state levels might affect the adoption rates of local management innovation. As well, the previous efforts only used cross-sectional data to understand the adoption of local management innovation, which may overlook the changes over time that take place in local management performance measurement innovation.

In this dissertation, the propensity to "implement" the adoption of a new management instrument has been studied under the rubric of management innovation, specifically as adopting a variety of performance measurement in local service delivery contracting. To analyze the "diffusion" characteristic of space and time, the model strategies employed in this dissertation include the local level and state level with a time growth curve estimated by Hierarchical Linear Model (HLM) and Hierarchical Generalized Linear Model (HGLM). To enhance understanding of the adoption and the process of management innovation, the study employs panel data drawn from the survey of 1992, 1997, and 2002 International City and County Management Association (ICMA) city administrators' responses to local service delivery programs on municipal and county governments nested in state levels to test the adoption of local performance measures related to service contracting.

This dissertation intends to estimate the relationship about how contract management capacity and state factors influence the rate of use of performance measurement, and to compare two group differences of private contracting, and nonprofit contracting employed by local governments nested in state levels.

Beyond our expectations, the diffusion of local performance measurement nested in state level did not significantly change over time, but the findings with the growth curve models showed that the adoption of performance measurement indeed had grown over our observed time. In general, the local contract management capacity (e.g., feasibility

assessment, evaluation, and implementation) significantly matters to the adoption of three types of performance measurements (e.g., citizen satisfaction, cost, contract compliance). In individual, the contract management capacity and state factors (e.g., state divided government, state reinventions) significantly impacts the use of performance measurement for private contracting. However, the state factors weakly influence the adoption of performance measurements when local governments employed nonprofit contracting. Several factors--structural and institutional heterogeneity-- can explain these differences in use of performance measures related to private contracting, and nonprofit contracting.

The empirical findings also show that state factors have a large impact on the adoption of performance measurement related to service delivery contracting. The findings suggest that local practices are indeed embedded in multilevel diffusion that may be unobserved by the previous studies in public administration research.

CHAPTER ONE

INTRODUCTION

This chapter begins by discussing the relationship between policy innovation and management innovation. Then we will discuss management for results as a management innovation doctrine. Thirdly, we will focus on *"implementation"* rather than *"outcome"* of the adoption of performance measurement. Fourthly, the issue of local management innovation and service delivery contracting will be discussed (e.g., performance measurement and service delivery contracting). Fifthly, this chapter will discuss how state factors influence local practices. The previous research did not use multi-level modeling and thus may not have applied the appropriate methods to estimate multilevel relationships which would lead to biased results. Sixthly, this chapter will summarize the theoretical importance, practical importance, and methodological importance related to this dissertation. Finally, at the end of this chapter, I will present a short summary of the chapters, including theoretical background, literature review and hypotheses, research design, findings and discussions, conclusions, research limitations, and recommendations for future research.

1.1 From Policy Innovation to Management Innovation

The earlier literatures related to diffusion of state policy innovation was the focus of Walker's article (1969) in which he theorized why some states adopted reform policies more readily than others. In his words, innovation was defined as a program that is new to the government adopting it (p.881). Berry and Berry (2007) further explicated that, different to policy invention in which original policy ideas were conceived, a governmental jurisdiction can innovate by adopting a program that numerous other jurisdictions established many years ago (p.223). Building on previous research on innovative state policy (Clark, 1985; Eyestone, 1977; Gray, 1973; Savage, 1978, 1985; Walker, 1969), the recent research also has attempted to identify the distinctiveness and the factors associated with innovative state policy diffusion such as competitiveness,

learning (Berry & Baybeck, 2005), and the interactions between and within neighboring areas which often have an impact on diffusion paths (Berry & Berry, 2007).

The supply of good government from pressures of financial, citizens, and political reelections mint a critical need of management innovation (Walker & Boyne, 2006). Researchers are focusing on understanding how management affects policy making and performance so that government programs and services can be improved, thus improving the value of places where citizens live and work (Kirlin, 2001) and, ultimately, the status of government in citizens' eyes (Lynn et al., 2000; Coggburn & Schneider, 2003:206). As government expands to meet citizens' needs, public management essentially recedes to the background, with attention focused instead on such policy issues as national security, economic performance, social security, health and safety. Public management is generally regarded as a process through which policies are formulated, resources allocated, and programs implemented, rather than as a policy issue in its own right (Barzelay, 2001:i). The efforts of public management and policy are boiled down to guide, constrain, and motivate the public service, through established categories as expenditure planning and financial management, civil events and/or implementation outcomes (Barzelay, 2001:14). Thus, there is no clear dividing line between public management and public policy in practice, because both of them reciprocally interact with each other.

1.2 Managing for Results as a Management Innovation Doctrine

The actions about the running of public organizations are made on the basis of what Hood and Jackson (1991) referred to as "administrative arguments" or "doctrines." Such doctrines are ideally suited to policy choices in a political context[1]. Proponents of public administration based on social science have exposed such doctrines as contradictory administrative proverbs (Simon, 1997). The history of public administration is replete with examples of management doctrines. This persistence is partly the result of the demand-driven nature of public-sector reform (Moynihan, 2006). Managing for results (MFR) closely fits the categorization of management doctrine, employing many of the

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[1] Doctrines are a theoretical explanation of cause and effect, often presented as factual and widely applicable and designed to prompt actions consistent with this explanation (Moynihan, 2006).

rhetorical tools of administrative arguments (Hood & Jackson, 1994). MFR offers a theory of cause and effect for running public organizations, resulting in a series of policy options that demand implementation of the desired state of effective, efficient, and results-based public organizations (Moynihan, 2006). Evidence suggests that during the 1990s, the most intensively adopted reforms in U.S. state governments were those associated with the concepts of "results" and "performance" (Brudney, Hebert, & Wright, 1999; Moynihan, 2006).

Governments throughout the United States and the world have recently implemented similar major management innovations. The single new approach has been given many names, such as strategic management, performance-based management, results-based management, outcome management, and New Public Management, and we will call all such approaches, managing for results (MFR) or results-based management. When compared to traditional systems, MFR generally put a greater emphasis on strategic planning; on performance measurement, especially the measurements of program outcomes; on customer satisfaction as one of the desired outcomes; and on results-oriented objectives (Swiss, 2005). A good deal of recent public administration research and writing has focused on the use and the effectiveness of various managerial strategies for improving government performance (Kettl et al., 2006). These strategies include total quality management, reengineering, performance budgeting, deregulation, and privatization (Cohen & Eimicke, 1998; DiLulio, Garvey & Kettl, 1993; Savas, 1999).

1.3 Implementation and Adoption of Management Innovation

The determinants of the diffusion of management innovation may vary hinging on the operational definition which we made (Brudney & Selden, 1995). Management innovation has been defined as ideas, formulas, or programs that are perceived as new by involved individuals (Rogers, 1995) and as the adoption of an internally generated or purchased device, system, policy, program, process, product, or service that is new to the adopting organization (Damanpour & Evan, 1984). That is, the term "the implementation of adoption of management innovation" refers to the process whereby ideas and behaviors new to organizations are developed, evaluated, accepted, and become routine (Wolfe, 1994; Schneider, 2007).

The characteristics that lead a local government's decision to adopt a management innovation instrument may not the same as the factors that shape the diffusion of management adoptions. Research has tended to study organizational attributes that promote innovativeness rather than the attributes of innovations themselves and to focus on earlier stages of the adoption process (e.g., adoption decision) rather than the final stage of implementation. The broadness of this definition suggests a need for greater specificity regarding the stages of adoption (Wolfe, 1994; Schneider, 2007), which are widely recognized to include initiation, adoption decision, and implementation (Rogers, 1995). To best develop a sense of the management innovation, the previous empirical study focused on adoption's final stage of implementation, which encompass an organization's modification, acceptance, and continued use of the innovation (Damanpour, 1991; Zaltman et al., 1973; Schneider, 2007).

Therefore, the propensity to *"implement"* the adoption of a new management instrument in this dissertation has been studied under the rubric of management innovation such as adopting a variety of performance measurements (e.g., citizen satisfaction, cost, contract compliance). As well, this dissertation will focus on adoption's final stage of implementation, in which the innovation is past the decision stage and is put into use (Rogers, 1995; Schneider, 2007). In other words, the adoption of innovation is measured by whether a local government had or had not implemented the innovation.

1.4 Local Management Innovation and Service Delivery Contracting

The previous studies are prone to study the adoption of management innovation based on overall programs rather than focused on certain program (Poister & Mc-Gowan, 1984; Poister & Streib, 1989; Poister & Streib, 1994; Poister & Streib, 1999; O'Toole & Stipak, 1988; Cope 1987; Berman & Wang, 2000; Berman, West, & Wang, 1999; Wang, 2002; Rivenbark & Kelly, 2003; Poister & Streib, 2005) that may obscure the understanding of the adoption of one management innovation operating in a certain service.

Local governments often use a contract approach to deliver public services in dynamic ways- contract out government services, contract in-house provision, public-private partnership or adopt interlocal service agreements- which have been treated as the path toward efficiency gains (Warner, Ballard, & Hefetz, 2003; Hefetz & Warner, 2004).

Therefore, this dissertation takes up local service delivery contracting to test the diffusion of local management innovation. As the International City/County Management Association (ICMA) studied, contracting for service delivery remained the most widely used alternative service delivery approach (ICMA, 1997). To a certain degree, it represents the operation of local practices and the alternative considered most frequently (Boston, 1991; Brown & Brudney, 1998; Gore, 1993; Osborne & Gaebler, 1992). As a result, the private sector organizations (private contracting) and nonprofit sector agencies (nonprofit contracting) have rapidly increased in volume and extended to various service areas (Chi & Jasper, 1998; Hirsch, 1991; ICMA, 1997; Schlesinger, Dorwart, & Pulice, 1986).

Advocates of contracting out services, who often work in public choice research traditions, concentrate on the potential benefits of contracting when government agencies are conceptualized as monopoly service providers (Landau, 1969; Niskanen, 1971; Savas, 1987). In this context, contracting overcomes bureaucratic inefficiencies by allowing public organizations to access scale economies, downsize costly labor and supply requirements, and yield efficiency gains through competition incentives, which promote competitive contracting with benefits of efficiency, cost savings, and improved effectiveness (Boyne, 1998; Ferris & Graddy, 1991; Mueller, 1989; Ostrom & Ostrom, 1977; Stein, 1990; Weimer & Vining, 1992; Brown & Potoski, 2003b).

1.4.1 Performance Measurement and Service Delivery Contracting

Reinventing government trickled to state and local levels in the 1990s (Bowling & Wright, 1998; Thompson, 2002), although some of its aspects, such as outsourcing of service delivery, occurred earlier (Whelan, 1999). Performance measurement has also been employed in government contracting; for instance government agencies have opted for privatization facilitates privatization or public-private partnerships by using performance-based contracting. An impetus for agencies to become more measurement-oriented besides privatization is the Government Performance and Results Act of 1993, which requires all federal agencies to develop performance measures. Another positive outcome of performance measurement for governments is that it improves upon the four guiding pillars of government reform— transparency, performance, accountability, and competition (Segal, 2003; Price, 2007). Donahue (1989), in his examination of

contracting, argued that successful contract compliance requires good performance measures that he argues are scarce for all but the simplest of public sector services. The implication is that measurement issues can undermine the contracting success.

1.5 Institutional Multilevel Influences

Traditionally, scholars have conceived of diffusion as arising through a process of social learning and economic competition (Berry & Berry, 2007); however, the previous research may outlook the significance of isomorphism such as mandates that may partly explain manage diffusion as a response to adopt. Once innovation is adopted and incorporated as part of the formal structure, they constrain the agency in terms of pursuing future courses of action. This constraining process forces one unit in a population to resemble, or to homogenize to other units that face the same set of environmental conditions which DiMaggio and Powell (1983) called it isomorphism. If this inference is true, we can expect that the changing patterns of management innovation in US cities located in the same state will reflect the same or the similar phenomenon because of learning and competitive factors (Berry & Berry, 2007). As some research has noted that management innovation might be promoted by institutional pressures (Tolbert & Zucker, 1983; Westphal, Gulati, & Shortell, 1997) or by fads or fashions (Abrahamson, 1991; Schneider, 2007).

Most of the studies mentioned previously only look at public management's impact on a particular jurisdiction. However, this ignores that the factors in higher hierarchical level is a key intervening variable in the local management innovation equation. As expected, the diffusion of management innovation may not only be rooted in internal determinants and other factors, but also be embedded in institutional influences (such as bureaucratic hierarchical rule) that may be unobserved by the past studies. The consideration of state-local relations may better account for variations in the adoption of local management innovation than merely consider local variation.

1.6 Appropriate Methods to Measure State-Local Relationships

As an applied science, public administration not only engages theory testing, but also more importantly imports reliable and valid results that contribute to the development of

a coherent body of knowledge in our field. The previous research sometime did not use the methods necessary to develop and evaluate new knowledge[2]. More skilled and appropriate use of research methods may promote discourse across the fields and understand the assumptions and logic of inquiry undergirding them (Streib & Roch, 2005). Another pervasive problem relates to generalizability and data aggregation in public administration data sets[3]. All too often state and local government data are combined (Lewis & Nice, 1994), despite important and substantively relevant differences in the two levels of government. Conversely, generalizing from low level to high level effects is also a common pathology in the public administration literatures (Gill & Meier, 2000). Given the heterogeneity of the local governments and hierarchical control, it was not uncommon to only see management innovation inferences made from dangerously small groups of local governments. In order to appropriately model these interactions of public agency, research must use multilevel methods in order to ensure that local-level and organization-level (state) impacts are appropriately measured and utilized (Pitts, 2007). If not, the modeling strategies of the research were flawed and may have yielded inaccurate results (Heinrich & Lynn, 2000)[4]. For example, Jennings and Ewalt (1998) estimated performances of local Job Training Partnership Act (JTPA) with state coordination. They simultaneously include the variables of state and local characteristics to estimate the performance of local JTPA, but their findings may fail to supply consistent, unbiased and efficient results. This is because they use multiple regression

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[2] Houston and Delevan (1990) studied articles published from 1984 to 1988 in six public administration journals. Their conclusion was overwhelmingly negative; they found that "research in public administration is still lacking in both methodological and quantitative rigor." As with other authors who found weaknesses in the research methods of public administration, Houston and Delevan were convinced that the field did not use the methods necessary to develop and evaluate new knowledge. In a more recent assessment, Gill and Meier (2000) also observed that "public administration research has fallen notably behind research in related fields in terms of methodological sophistication. This hinders the development of empirical investigations into substantive questions of interest to practitioners and academics"

[3] Lynn et al. (2001) noted the ubiquity of ordinary least squares (OLS) regression in governance research, finding little use of techniques designed for limited dependent variables or methods such as structural equation modeling, hierarchical linear modeling, or time series. In addition, much of the research on public administration studies has found that quantitative methods are often too basic and/or inappropriate for the analyses being conducted (Gill & Meier, 2000, 2001; McCurdy & Cleary, 1984; Stallings & Ferris, 1988).

[4] Ellwood (2000) demonstrated that relationships between education inputs and outputs have become clearer as data from multiple levels have been introduced into research. There appears to be strong arguments in favor of its use and a movement toward seeking multilevel data at the outset of data collection.

rather than multilevel regressions to assess the contributions to outcome variables from individual-level explanatory variables with contextual factors (Bickel, 2007; Snijders & Bosker, 1999; Hox, 2002; Raudenbush & Bryk, 2002).

The diffusion of management innovation results from shifts in adopting innovative management to more receptive jurisdictions of federal, states, and local jurisdictions, coupling with the acceptance of public problems across time. A wide range of research designs from case studies and historical tracks to quantitative analysis are employed to explicate the processes of innovation; most of them only assess the implications from a single level, such as the state level (McVoy, 1940; Mintrom & Vergari, 1997; Carter & LaPlant, 1997; Volden, 2006). These narrow analytic approaches usually suffer from the limitations of conventional statistical methods for multiple levels of data, including problems concerned with the accuracy of estimating standard errors, assessment of model fit and explained variance, omitted variable bias, and loss of information (Heinrich & Lynn, 2000). In a few examples, the practices of local levels are nested in state rules (McCabe & Feiock, 2005; McCabe, 2000).

If the research only tests the variables at the local level, we may gain little understanding of how specific state factors influence the diffusion and use of local management innovation. Previous research efforts, however, have limited their examination to a cross-sectional process of management innovation at local level (Poister & Harris, 2000; Schneider, 2007). There may have been measurement errors- that hide real changes and bias statistical results that partially and spuriously explain manage diffusion as a response to adopt in multilevel jurisdictions. If we do not emphasize the multilevel effects, some incorrect conclusions are likely to be made. Therefore, local management innovations should be modeled as a process rather than as a series of outcomes. Perhaps for this reason, the cross-section studies demonstrate an incapacity to predict innovation robustly[5].

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[5] Moon and Bretschneider (2002) advised, researchers should engage in comparative post-reinvention studies using recent data to correct the potential bias in cross-section research design.

1.7 Summary

In summary, this dissertation has important implications for aspects of theory, practices and methods for the study of local performance measurement nested in state levels:

1.7.1 Theoretical Importance of This Dissertation

This dissertation employs the concepts of policy innovation and the diffusion of local management innovation. However, we only look at the implementation of adoption of performance measurement, rather than estimate how the early adoption spreads to other places. As well, the previous research only uses cross-sectional data to understand the adoption of management innovations, which does not allow us to observe changes over time. Even if we know the adoption rates for each management tool employed by local governments, some questions are still unanswered. For example, the hierarchical rules, mandates, and laws made by state levels may also influence the adoption rates of local management innovation because of the hierarchical control relationship[6]. Therefore, this dissertation intends to fill the gap in the ignorance of the practical interaction in the previous research. In addition, this dissertation also compares group differences of private contracting, and nonprofit contracting in terms of the relationship of contract management capacity, state factors, and performance measurements nested in state levels.

1.7.2 Practical Importance of This Dissertation

Although we have learned much about a state's institutional responses to local governments (for instance, laws, mandates, grants and so on), we know little about their empirical effects. In short, if we want to have a complete picture of the diffusion of local management innovation, we must consider how the state factors influence local management innovation. Little empirical study has been undertaken on the various adoptions of management innovation associated with performance measurement nested in the state level. Thus, it has not been possible to discern whether characteristics or attributes of the state practices might affect decisions regarding local practical adoption of performance measurements. In addition, this dissertation also emphasizes contract

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[6] In the policy innovations of local Charter school, state legislators may find the prospect of introducing such innovation as the restrictive laws in Charter Schools appealing; for examples, the New Mexico charter school of 1993, limits the number of charter schools to five (Mintrom & Vergari, 1997:47).

management capacity and state factors which are expected to affect the differences of private contracting and nonprofit contracting.

1.7.3 Methodological Importance of This Dissertation

Scholars have called to introduce more longitudinal designs (Streib & Roch, 2005; Gill & Meier, 2000; Houston & Delevan, 2000; Berry, 1994a) and multilevel methods (Heinrich & Lynn, 2000; Pitts, 2007) into public administration research. This dissertation will seek to understand the ways a management innovation (performance measurement) is impacted by multilevel governmental relationships over time (Perry & Kraemer, 1986; Houston & Delevan, 1990; Streib & Roch, 2005)[7]. To enhance understanding of the adoption and the process of management innovation, the study employs panel data drawn from surveys from city administrators' responses to local service contracting on municipal and county governments to estimate how contract management capacity and state factors influence the diffusion of local performance measurement. In addition, to analyze the "diffusion" being characteristic of space and time, the model strategies employed by this research includes the local level and the state level with time growth model. As expected, the diffusion of management innovations may not only be rooted in time growth rates, but also may be embedded in multilevel diffusion that may be unobserved by the previous efforts in public administration research.

1.8 Organization of This Dissertation

This dissertation will be organized as follows:

1. Chapter two provides the background knowledge related to types of service delivery contracting, factors influencing local management innovation, managing for results as a

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[7] As Gill and Meier (2000) observed, in traditional public administration research, very few time series analyses were conducted, despite a plethora of research questions that have longitudinal aspects or characteristics. Perry and Kraemer (1986) also concluded that, "Very little empirical research involved field experiments, structural equations, or longitudinal studies". In their view, the methods most frequently used in public administration did not lend themselves to the development of empirical theory. Houston and Delevan (1990) observed that "few data sets are collected to facilitate numerous or long-term studies of administrative phenomena. Streib and Roch (2005) believed that the step up from studying comparable populations is to study the same respondents over a longer period of time. This technique has the potential to provide far greater insights than the cross-sectional studies that predominate today.

management innovation doctrine, performance measurement and management innovation.

2. Chapter three begins with a review of literatures regarding types of service delivery contracting, the status of management innovation and the influences of management innovation that would affect local service delivery programs. Then I also derive a series of hypotheses coupling my research questions with prior literatures.

3. Chapter four summarizes the research design, including data sources, and operational definitions of variables that estimate different factors of management innovation are then addressed. In addition to applications of repeated ANOVA, which are often used to estimate the between-subject variation of panel data, we also introduce multilevel models to explore fully the potential variations for the spread and use of performance measures between and within state and local levels.

4. Chapter five will state the findings and discussions related to estimating the hypotheses studied in this dissertation. These include descriptive statistics, ANOVA repeated measures, multilevel linear growth model, multilevel growth curve model, model comparison, and intraclass relationship.

5. Chapter six will conclude with a summary of the hypotheses tested and results found, research limitations and recommendations for future research, implications for public management research, and recommendations for local management practices.

CHAPTER TWO
THERORETICAL BACKGROUND

This chapter will present the theoretical background as a base to develop the hypotheses stated in the following chapter. Firstly, we discuss the factors which influence local management innovation. Then, we discuss diffusion and performance measurements. Thirdly, we provide the evidence to address the affiliated state and local relationships. Finally, this chapter will explain the types of service delivery contracting, including private contracting, and nonprofit contracting.

2.1 Factors Influencing Local Management Innovation

In general, researchers have focused on the regional diffusion effects motivated by learning and competitive factors (Walker, 1969; Glick & Hays, 1991). Learning theory posits that local officials tend to draw on the experiences of nearby jurisdictions or similar jurisdictions when considering whether they should adopt a management instrument (Berry & Berry, 1990, 1992; Berry & Baybeck, 2005). On the other hand, the factor of economic competition may explain diffusion as a response to inter-local pressures in the form of lost business, tax revenues and jobs. The process of diffusion through economic forces is built from competition between nearby jurisdictions for business, tax dollars, and financial incentives (Berry & Berry, 1990, 1992). Localities are highly competitive with a very large number of communities vying for a number of business firms (Lindblad, 2006). As Tiebout argued local governments compete over citizens by offering different mixes of taxes, expenditures and public policies (Tiebout, 1956), local governments are inclined to offer different incentives, instruments and management innovation through which to attract and retain businesses such as grants, loans, and subsidized infrastructure or land (Kinsley, 1997). Their arguments imply that local governments tend to adopt management innovations in order to compete with other local governments to attract and retain more business.

Schneider (2007) explored the perceived characteristics of an innovation that might influence its adoption, and explored the relation between innovation attributes and actual

innovation adoption. He examined three attributes of innovation: (a) cost, which is considered a primary attribute (Downs & Mohr, 1976) and is included in several studies of administrative innovation (Fliegel & Kivlin, 1966); (b) complexity, which reflects difficulty in understanding and using an innovation (Rogers, 1995); and (c) relative advantage, which compares the impact of the innovation to others adopted by the organization (Rogers, 1995). He also introduced a new innovation attribute, ideological alignment, defined as the degree to which an innovation reflects the values advocated by a social movement; the movement in this case is the one associated with New Public Management. His findings suggest that ideological alignment and relative advantage are positively related to innovation adoption (i.e., the innovation's beneficial impact on local government) and that administrators adopt innovations based not on their cost or complexity but on their alignment with New Public Management ideology and their beneficial impacts on local governments (i.e., the innovation's embodiment of the new public management/reinventing government movement's ideals). These might be related positively to innovation adoption and account for some of the variance in innovation adoption in U.S. local governments (Schneider, 2007).

2.2 The Diffusion of Performance Measurement

Public administration has always been concerned with government performance. Indeed, following Woodrow Wilson's (1887) call to make the government more businesslike, we have witnessed a series of reform commission recommendations, continuing waves of administrative reform (McGregor, 2000; Light, 1997), and new managerial practices (such as zero-based budgeting, planning, programming and budgeting, management by objectives, total quality management and management for results). Together, these actions are supposed to achieve high performance from government's administrative machinery (Coggburn & Schneider, 2003).

Performance measurement is an increasingly widely adopted practice in the United States. At the turn of the 20th century, the New York Bureau of Municipal Research had already suggested the concept of measuring the economy or cost-efficiency of public programs to assist public managers in resource allocation decisions (Williams, 2003). In the federal government, performance measurement initiatives have now been adopted by

almost every administration since the 1960s, starting with the Planning-Programming-Budgeting System in the late 1960s, to the Program Assessment Rating Tool introduced by the Bush administration in 2001(U.S. General Accounting Office, 2001). The history of performance measurement in many U.S. state and local governments is even longer (Bouckaert, 1990). As early as the 1930s, the International City Management Association, which later became the International City/County Management Association, had begun to promote the practice of performance measurement and offer technical assistance to cities using the tool (Ho, 2007a).

More than a decade has passed since the widespread implementation of performance measurement requirements across all levels of government in the United States—from the Government Performance and Results Act of 1993 at the federal level to a range of similar requirements in state and local governments (Berman & Wang, 2000; Melkers & Willoughby, 1998; Poister & Streib, 1999; Melkers, 2006) [8] . The Government Performance and Results Act of 1993 (GPRA) required federal agencies to develop strategic plans that were tied to proposed budgets and performance measures by way of legislation and mandates (Franklin & Long, 2003), and GPRA has also influenced policy and management practices in state and local governments. Researchers noticed that the increasing applications of strategic planning moved forward policy programs in state agencies (Berry & Wechsler, 1995), as well as that the states had legislation that linked their agencies' strategic planning process to the developments of performance measurement based on the agency's missions and goals (Melkers & Willoughby, 1998).

2.3 The Affiliated State and Local Relationships

States directly and indirectly shape the institutional rules that affect local governments. State-level rules include provisions for creating local-level governments (McCabe & Feiock, 2005). Local programs are made within the decision space established by the boundaries of state rules. That is, the adoption of management innovation related to expected outcomes operate not only within the local provisions but

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[8] The Government Performance and Results Act requires federal agencies to consult with Congress and other stakeholders to develop a mission statement and a long-term strategic plan, establish annual performance goals that should be outcome-oriented, and measure their accomplishments against these goals and report the results to Congress (Ho, 2007b).

also the opportunities and constraints created in the state-level rules. Thus, it may be more accurate for considerations of state-local relationships to study local management innovation within the nested levels of the state.

Through decentralization to other governments, the national government has shed much of its policy, administrative and management load to the states. It is the states, then, that bear considerable responsibility for the public programs (Nice & Fredericksen, 1995). And often it is the local governments' service delivery that affects citizens most directly and fundamentally. The decentralization of the responsibility from the state level to the local level means the success of some of government policy and programs depends on the state's influence on local governments (Bowling & Wright, 1998; Coggburn & Schneider, 2003). State, and local governments are tied together by a variety of factors: money, programs, political parties, and the activities of interest groups. In recent years, state and local governments have had to make up for the federal government's failure to fully fund programs that it has required or encouraged in a number of areas, particularly education and homeland security (Berman, 2006: 41, 43).

Rodriguez (2007) found that service delivery patterns have more to do with the state in which the county is located than urbanization or county population size. Some factors that influence county service delivery include: differing state laws regulating public debt and debt service, and county government deficits. Based on a 50-state telephone survey to members of the National Association of State Auditors, Comptrollers and Treasurers in 2002, Honadle (2003) found that ten states had played defined formally local government fiscal crisis while the rest varied between having a weak working definition, having no definition, or leaving it to local governments to define a fiscal crisis for themselves. Although the majority of states lacked a careful, legal definition of a local government fiscal crisis, 36 states reported that they had had a mechanism to define it in recent history in their states.

2.4 Types of Service Delivery Contracting

Contracting advocates believe that contracting out services is an effective tool for governments to reduce costs, to increase efficiency, to improve services, to encourage innovations (Gore, 1993; Kettl, 1993; Osborne & Gaebler, 1992; Salamon, 1989; Savas,

1987; Ni & Bretschneider, 2007), and to deal with concerns over tight budgets and growing demands for public services. Prescriptions for improving contracting focus on how public managers plan, negotiate, implement, and evaluate contracts to improve service delivery and save costs. Contracting could also help public organizations overcome financial constraints. When implementation is contracted to outside firms, governments are freed up from having to finance large overhead or start-up costs (Brown & Brudney, 1998; Ni & Bretschneider, 2007). In the competition for contracts, the contracting organizations can overcome the principal–agent problems, monopoly inefficiencies, and other weakness that defer service delivery through government supply. Although some research has supported efficiency and cost savings claims (Miranda & Lerner, 1995), recent empirical findings suggested this support was mixed at best (Boyne, 1998; Hirsch, 1995; Lavery, 1999; Brown & Potoski, 2004). Contracts may be designed to purchase a single service or multiple services. As well, contractors can include private sector, and nonprofit organizations (LeRoux, 2007), which will be discussed and estimated in this dissertation.

2.4.1 Private Contracting

Starting with the Reagan administration, a more conservative philosophy of smaller government has dominated public thinking, and promoted the idea of realigning public and private sector roles through privatization (Ni & Bretschneider, 2007). More recently, the Clinton administration's reform initiatives, such as Reinventing Government Movement and National Performance Review, encouraged the application of private sector business management practices to the public sector (Osborne & Gaebler, 1992). Born from a desire to "make government work better and cost less," the reformers suggested that governments should seek market rather than administrative solutions to facilitate the delivery of services (Gore, 1993).

2.4.2 Contracting with Nonprofits

While the vast majority of contracts local governments make with nonprofits are with social service agencies, they may also contract with other types of nonprofits such as mediation centers, neighborhood associations, or research firms. In many ways, contracting with nonprofits is no different than contracting with private sector organizations. Indeed, nonprofit agencies often find themselves in competition with

private social service providers. Although they may compete to provide the same service, the nonprofit sector is different from private businesses, as private businesses have a clear incentive to keep operating costs low in order to make a profit. In contrast, nonprofits cannot disburse any profits to staff or board members, so they are less motivated by financial gain. The motives of nonprofit boards and staff for wanting to do business with government may stem from a desire to extend their services to more people ((LeRoux, 2007:9-12).

As the research on organizational research argued (e.g., Selznick, 1966; Hannan & Freeman, 1989; DiMaggio & Powell, 1983; Scott, 2003), environmental variation influences the values, goals, and procedures. Therefore, different types of service delivery contracting may be used due to the differences in institutional design, environments, and expectation. And this heterogeneity is expected to produce the variation in politics, values, profits, conflicts, performance, internal management operations and so on.

2.5 Summary

This chapter provides the background information on which the literature review and hypotheses will be developed. As discussed above, we discuss the factors driving local management innovation, such as learning, competition, and ideology with New Public Management techniques, and we expect to find variation in two types of contracting under a federal system due to institutional, environmental and other differences.

CHAPTER THREE

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

This chapter will review the components of performance measurement, management innovation, types of performance measures, performance measurement and contracting services, contract management capacity, contract management capacity and performance measurement, implementation obstacles and performance measurement, state factors and local management innovation, as well internal determinants. All of these components will be used to develop several hypotheses which will be tested in this dissertation.

3.1 Performance Measurement and Management Innovation

Recent efforts to innovate public service organizations have focused on constructing and analyzing measures of organizational performance. These measures guide decisions about resource use, staffing, and financial supports, among other uses (Rubenstein, Schwartz & Stiefel, 2003)[9]. Performance measurement is the use of quantitative indicators to measure the efforts, economy, and results of public services (Broom et al., 1998; Hatry, 1999). For the past few decades, many local governments in the United States and elsewhere in the world adopted the tool and tried to integrate performance measurement into budgeting, planning, and program management.

In response to growing concerns and critiques regarding government performance, the New Public Management (NPM) reform movement promoted the development of a series of administrative innovations intended to improve government effectiveness and efficiency (Schneider, 2007). Performance has come to be defined succinctly as the

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[9] Behn (2003) summarized eight purposes that public managers have for measuring performance: 1. Evaluate: How well is my public agency performing? 2. Control: How can I ensure that my subordinates are doing the right thing? 3. Budget: On what programs, people, or projects should my agency spend the public's money? 4. Motivate: How can I motivate line staff, middle managers, nonprofit and for-profit collaborators, stakeholders, and citizens to do the things necessary to improve performance? 5. Promote: How can I convince political superiors, legislators, stakeholders, journalists, and citizens that my agency is doing a good job? 6. Celebrate: What accomplishments are worthy of the important organizational ritual of celebrating success? 7. Learn: Why is what working or not working? 8. Improve: What exactly should who do differently to improve performance?

effective and efficient use of resources to achieve results. Effectiveness involves comparison of actual outcomes to planned goals, and efficiency refers to costs associated with the process of converting inputs to outcomes (Berman, 2006).

3.1.1 The Reasons Explaining the Adoption of Performance Measurement

Results address the contextual, organizational, and leader antecedent factors that affect the extent to which the reform movement has been adopted (Brudney, Hebert, & Wright, 1999; Kearney, Feldman, & Scavo, 2000; Teske & Schneider, 1994; de Lancer Julnes & Holzer, 2001; Moon & deLeon, 2001). Widespread interest in performance measurement has been ignited at all levels of government. More and more governments, either due to an external pressure to demonstrate results or a desire to highlight accomplishments and improve internal processes, has invested in metrics that track outputs and, to a lesser extent, outcomes (Marvel & Markel, 2007:173). The motives governments have in implementing performance management systems stem from various sources (Ammons, 2001); technical, political and cost reasons are accountable for these changes. Technical reasons are caused by know-how, known causalities, or guidelines, management capacity; political reasons are those in which political factors lead to the decision of the policy targets or indicators; and cost reasons come into play when the measurement of an indicator is too expensive and therefore not realistic (Boyne et al., 2004; Proeller, 2007).

Performance measurement has provided the public sector with tools to track "how well do we do what we do?" as well as a potential tool to assess the calls for privatization. Wilson and Gnall (1996) defined performance measurement as a management process that involves (p.1148): 1. identifying important objectives consistent your organization's mission, 2. measuring how you are doing against those objectives (in terms of outputs and outcomes), 3. using what you learn to inform decisions and improve performance, and 4. reporting to your customer how you are doing (Campbell, 1996).

3.1.2 Adoption of Performance Measurement in Local Governments

Local governments are often cited for their advanced practices related to results-oriented systems. Although most governments at local levels have adopted some sorts of application of performance measures, effective implementation of a hierarchical performance-based system has been recognized as less commonly used. Local government officials currently endure tremendous pressure to connect service delivery

demands with limited revenue-generating options. Further, like officials at all levels of government, local administrators must advance and advertise the performance of their agencies and departments in the face of a dramatically and continually weakened economy (Melkers & Willoughby, 2005).

Poister and Streib (1999) found that particularly at the local level— workload and output quantification is a measurement basic. They also found that local officials are pressed to use measures to track costs and to improve accountability to the managers or chief administrators. In addition, in governments with centralized systems, performance measurement is used in a meaningful way for planning and considered very important for budgeting purposes (Poister & Streib, 1999). Berman and Wang (2000) concurred that the existence and meaningful use of performance measurement are separate issues, and the overstatement of use often masks the inadequacies of the organization in supporting such reform. Their research confirmed Jordan and Hackbart's (1999) finding - organizational capacity was vital to the usefulness of performance measurement for budgeting. They also suggested that governments can best support their performance initiatives by empowering the central budget office, which can influence budget deliberations later in the budget cycle. Melkers and Willoughby (1998) found widespread use of results-based budgeting among the states. In 1997, a Governmental Accounting Standards Board and National Academy of Public Administration survey reported that more than 40 percent of responding municipalities used performance measures in some of their programs. A survey by Poister and Streib (1999) found similar results. These surveys did not differentiate; however, between the utilization of performance measures for internally delivered and contracted services.

3.1.3 Types of Performance Measures

Government officials today do not lack performance measures or professional standards, nor do they struggle with the supply of performance data (Ho, 2003). Many governments have developed sophisticated and systematic methods to measure output, cost-efficiency, intermediate outcomes, and outcomes and impact of public services (Hatry, 1999). Many governments also have benchmarking programs to compare their performance with professionally established standards or the performance of peer jurisdictions (Folz, 2004). In outcome-oriented performance measurement and control

systems, objectives and indicators should preferably be defined on the outcome level. Of course, input, output, and especially output measures are also needed to evaluate efficiency [10] (Williams, 2003). The following section will discuss the performance measures of citizen satisfaction, cost, and contract compliance .

1. Citizen Satisfaction

The contemporary focus on customer service and management for results, often defined in terms of citizen satisfaction, are the established strategies of the new public management and reinventing government movements (Aberbach & Christensen, 2005; Kettl, 2000; Osborne & Gaebler, 1992). We have seen a movement to encourage governments to rely more on the public defining "results" and what they expect the government to measure and report for public accountability purposes in the development of performance indicators and the monitoring of performance (Heikkila & Isett, 2007; Ho, 2007)[11]. The study of local government performance concerns how citizens respond to good or bad government performance, particularly with respect to their satisfaction judgments and, in turn, trust of government (Yang & Holzer, 2006). We might assume that citizens are satisfied when government performs well and are dissatisfied when government performs poorly (Van Ryzin, 2007). The outcomes or accomplishments of government, no matter how imperfectly under the control of public managers, are experienced or perceived by citizens. By involving citizens in developing and selecting performance measures, citizen-driven measures encourage public managers and elected officials to think beyond the technicality of performance measurement and explore which aspect of public services matter most to citizens (Ho, 2007).

There are, however, limitations to the citizen-initiated performance model. First, it is built on a premise that all three parties—citizen representatives, elected officials, and

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[10] There are several types of performance measures: Output measures- the quantity of services provided or the quantity of services that meet a certain quality requirement; for example, the number of public employees, the number of service receipts. Outcomes measures- the results that occur because of services provided. This may include initial, intermediate, or long-term outcomes; for example, the percentage of the light condition or the clearance rate for the crimes, or the percentage of the poor residing their neighborhoods as decreasing or increasing (Melkers & Willoughby, 1998).

[11] Citizen participation is the interaction between citizens and administrators that focuses on policy issues and service delivery. In this context, citizen participation is considered to have a direct impact on policy formulation and implementation. Citizens are viewed as an integral part of the governance process and their active involvement are considered essential to the critical decisions facing a community (Callahan, 2007:1181).

managerial staff — have interest in participating. This requires a political environment that has a certain level of trust and willingness to cooperate among these partners. If this environment is absent, or if elected or departmental officials fear that interest groups or the public media may use performance information to play electoral politics, citizen-initiated performance may not be viable (Ho, 2007). In addition, the citizen perceptions toward government performance have come to be seen as sometimes inaccurate and untrustworthy, reflecting their own interests for political or public relations purposes (Stipak, 1980; Van Ryzin, 2007).

2. Cost

Private contractors operating in competitive markets are under constant pressure to keep costs down often through innovative service delivery (Donahue, 1989; Kettl, 1993; Savas, 1987). Hirsch (1995) argued that local governments adopted contracting as an effort to reduce taxpayer burden. Numerous studies have cited monetary and cost-efficiency considerations as key factors in contracting decisions (Donahue, 1989; Hirsh, 1995; Kettl, 1993; Savas, 1999; Seidenstat, 1999; Ni & Bretschneider, 2007). Cost or expenditures associated with innovation adoption is considered to be a primary factor (Downs & Mohr, 1976), as it is a critical component of the efficiency dimension of performance. Cost is included in many innovation studies (Fliegel & Kivlin, 1966; Wolfe, 1994). Given resource scarcity in the public sector, the political process of resource allocation, and NFR emphasis on cost reduction, a negative relation is expected between innovation cost and innovation adoption.

3. Contract Compliances

Contract compliances performance has become a fashionable approach for governments to lower their building energy and operational costs without having to make up beforehand payments for equipment and other expenses. The nature of a Contract compliances performance keeps the focus on outcomes rather than input and processes. Contract compliances performance requires governments to take a step and define their required outcomes in specific, measurable, assignable, realistic, and time-related terms. The Contract compliances performance saves costs and improves services by allowing and encouraging competition based on cost, qualifications, and committed impact. The performance-based contracting increases the likelihood that the working relationship

between the government and the contractor will be better than in traditional contractual arrangements and that the quality of service will be higher as a result of the improved relationship. One reason for this is that contractors and customers in contract compliances performance relationships are more likely to view each other as partners instead of as adversaries (ICMA, 2001:1-6).

To gain insights on the actual measurement of objectives, contract compliance s providing indicators were analyzed with regard to the level of performance they were measuring, e.g. whether they were using input, output and/or outcome indicators. In cases where contract compliance s were actually measured it does not include the outcome level in many cases and at best relies on output, and input measures that controlled for efficiency, but not for effectiveness (Proeller, 2007:103). Donahue (1989), in his examination of contracting, argued that successful contract compliance requires good measures of performance that he argues are scarce for all but the simplest of public services. In a similar vein, Behn and Kant (1999) warned, "Performance contracting can be a perilous undertaking; particularly when contracting for nonprofit contracting services, both the government agencies and the contractors are committing themselves to accomplish something they might not be able to do" (p. 472).

3.2 Performance Measurement and Service Delivery Contracting

Behn and Kant (1999) observed that the emphasis on performance in the contracting relationship means that the primary responsibility of contracting agency and contractor is to produce the desired result. Portz, Reidy and Rochefort (1999) identified the new tasks that confront managers when contemplating contracting out - performance specifications must be written, and a system of monitoring and evaluation must he put in place. Brown and Potoski (2003a), taking caution regarding the difficulty of measuring activities whose outcomes are not readily identifiable, concluded that "under these circumstances, the contracting government is exposed to the risk of unseen contractor non-performance or negligence" (p. 277). They also demonstrated that the nature of the service, the contract partner, and the competitiveness of the environments each contribute to the amount of a government's investment in monitoring and transaction costs.

The contracting literature posits that increased monitoring and transaction costs that they engender are the inevitable consequences of contracting out public services. The implicit assumption is that outsourced services need to be and are subject to a higher level of scrutiny compared to internally delivered services. In contrast, the performance measurement and management literature suggests that public sector managers must focus on accountability and results, irrespective of the mode of service delivery employed. Though this literature makes no explicit prediction regarding the relative monitoring efforts of contracted out versus internally delivered services, one of the intended byproducts of the introduction of performance-based management is more the "business-like" operation of internally delivered services (Marvel & Markel, 2007:521).

Well-monitored contractors are more likely to perform in keeping with contract specifications, through improving returns from contracting, but legal, institutional, and service constraints can increase transaction costs (Brown & Potoski, 2003a; Brown, Potoski & Van Slyke, 2006). As is the case with other contracting practices, effective monitoring requires legal regulation. For example, information from monitoring practices that are not contractually authorized may not legally be used to evaluate contractors (Brown, Potoski, & Van Slyke, 2006). Public managers may be required to establish formal systems for tracking and monitoring citizens' complaints about service delivery contracting or to understand public responses through citizen surveys (Miller & Miller, 1991; Swindell & Kelly, 2000; Brown, Potoski, & Van Slyke, 2006). In other approaches, public managers may be legally authorized to check and analyze contractors' records and performance data or to do field checks. These monitoring activities differ in their costs and efficacy depending on the nature of the service and existing service-market environments (Brown, Potoski, & Van Slyke, 2006). Effective markets require large numbers of participants who are well informed about the quality, cost, and availability of the goods being exchanged (Kettl, 1993; Sclar, 2000; Brown & Potoski, 2004). In other cases, severe difficulties in measuring service characteristics and outcomes exacerbate contractors' information advantages over governments, making effective contracts difficult to write and even more difficult to enforce (Brown & Potoski, 2004).

3.3 Managing Service Delivery under Contract

Contracting is a highly complex process requiring multiple types of expertise from public managers (Lavery, 1999; O'Leary, 1996; O'Looney, 1998). Governments at all levels have expanded the range of services they deliver through contracts—from traditional "make or buy" decisions for defense weaponry, highway construction, and fleet purchases, to contracting for the ongoing provision of specialized social services. Increasingly, government workers find themselves managing contracts instead of delivering services, often in the context of diverse expectations such as reducing the size and cost of governments, improving service delivery, and increasing accountability (Romzek & Johnston, 2005:436). Followers of contracting suggested that it is more cost-efficient and better stimulates innovation than direct service delivery. In contrast, the government service delivery has been found to promote political accountability, stability, and equality (DeHoog, 1984; Donahue, 1989; Kettl, 1993), although the relative strengths of government versus contract service delivery appear to vary across circumstances (Brown & Potoski, 2006; Morgan & England, 1988; Sclar, 2000). For example, the returns from contracting versus direct service delivery depend acutely on legal requirements (Brown, Potoski, & Van Slyke, 2006; Sclar, 2000; Van Slyke, 2003; Romzek & Johnston, 2005). Once governments select a contractor and then turn their attention to contract implementation and contract monitoring, public managers face more decisions concerning trade-offs among public, institutional, and service-market values. These values may involve monitoring and evaluating performance of contractors working under contracts (Kettl, 1993; Praeger, 1994; Brown, Potoski, & Van Slyke, 2006).

In specifying a contract, public managers decide on and implement a bid process, select a contractor, and make contract terms. The contracting service is a highly complicated process which needs different stages of know-how expertise related to management capacity. Competition is the logical foundation for contracting. Governments' capacity to facilitate competitive bidding processes, evaluate and monitor contractor performance should be strengthened to avoid potential threats on contract performance and prevent large-scale contracting failures (Ni & Bretschneider, 2007).

Contract management capacity, as one of the governments' capacity, is necessary in a world in which governments are increasingly providing services through alternative

delivery arrangements. Government capacity, as Brown & Potoski (2003) defined it, moves beyond the competencies that governments need as primary service deliverers to include the competencies that governments need when they contract with others to deliver services. Brown, Potoski and Van Slyke (2006) examined the interaction of the factors in these three key stages of contract management: (1) deciding whether to "make or buy " the services, (2) choosing contractor s to produce the services, and (3) organizing monitoring tools for monitoring the implementation of contracts. Brown and Brudney (1998) found that higher levels of contracting in information technology by local governments reduce government management capacity; therefore, governments grasp fewer benefits from contracting. Effective management can overcome these problems associated with contracting. Effective contract management requires mitigating specific problems that can disturb the contract process. These problems occur from dissatisfaction with prior contracting experiences, characteristics of the government's structure and operation, and characteristics of the government's external environment (Brown & Potoski, 2003)[12].

Successful contracting requires public managers to undertake three complex sets of tasks: deciding whether to contract for a particular service, establishing and implementing a process for outsourcing the service, and managing the delivery of the service once a contractor has been selected (Brown & Potoski, 2005). As contracting has become more common and politically appetizing, public managers have come under increasing pressure to be "smart buyers" of contracted service provisions (Kelman, 2002; Kettl, 1993; Brown & Potoski, 2005)[13]. Although many view contracting as an arm's-length relationship between the governments and the contractors, successful contracting more likely occurs when public managers are collaboratively engaged throughout the process (Gansler, 2002; Lawther, 2002; Romzek & Johnston, 2002; Brown & Potoski, 2005).

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[12] These problems may be more likely to occur in cases such as: limited or no competition among potential contractors (Kettl, 1993); contracted products and services that are difficult to specify and describe in written contracts (Behn & Kant, 1999). Contractors that have special knowledge or skills about the product that is unavailable to public managers (Sclar, 2000). Public managers have a hard time monitoring contractor performance once the contract has been let (Milward, 1996).

[13] As Wise (1997) states, "In public administration, thus far, more effort has gone into seeking out additional opportunities to contract for services and charting possible cost savings from doing so than has gone into specifying the management imperatives necessary to develop and manage the contracts successfully" (p.576).

3.4 Contract Management Capacity and Performance Measurement

A number of scholars have required more rigorous investigation of management links to performance (Mead, 1997, 1999; Lynn, Heinrich, & Hill, 2000; Heinrich & Lynn, 2000a; Dilulio, 1989; Rainey & Steinbauer, 1999). Many view management capacity as a "necessary antecedent to performance" (Donahue, Selden, & Ingraham, 2000:385). Most who study public management operate under the assumption that management and performance are connected (Dilulio, 1989; Ingraham & Donahue, 2000). As Lynn et al. (2000:8) state, "there is virtually always a need for management with respect to public-sector activity; therefore, managerial behavior is almost always a factor in government performance." For example, good management can lower costs and improve results, while poor management can bring into just the reverse effects (Dilulio, Garvey, & Kettl, 1993; Coggburn & Schneider, 2003). Despite widespread discussion, the casual relationship that public management matters to government performance, a great deal is unknown about the real consequence of public management (O'Toole, 2000; Ingraham & Donahue, 2000; Coggburn & Schneider, 2003).

The government performance model develops the concept of management capacity, which is defined as "government's intrinsic capacity to marshal, develop, direct, and control its human, physical, and information capital to support the discharge of its policy directions" (Ingraham & Donahue, 2000:294). Summing up the theoretical connection between capacity and performance, Ingraham and Donahue (2000:296) stated, "In short, we assert that governments with more management capacity have the capacity to perform better than governments with less management capacity, all else being equal." Although the substantive areas addressed vary, as do the specific administrative and managerial features examined, the findings generally point to the importance of public management to government performance. These findings formed the basis for "growing agreement that influences associated with administrative arrangements do matter to the efficacy of the policy and program delivery system" (Donahue et al., 2000:384).

3.4.1 Transaction Cost Explanation

The contracting literature displays broad agreement that monitoring and transaction costs are weight heavily in the decision about whether to contract out. Monitoring costs are thought to constitute a significant part of the contracting budget. Hefetz and Warner

(2004) found that monitoring, along with principal – agent problems, to be the most important factors in contracting decisions. In fact, they concluded that "difficulties with contract specification and monitoring were factors driving the decision to bring the contract back in-house" (Marvel & Markel, 2007:173). In the case of contracting services, because the parties to a transaction cannot fully predict all possible future strategies, they do not totally specify contracts. When a contract is incomplete, the contractor may opportunistically exploit ambiguities in the contract to its advantage at the cost of the contracting organizations with greater ambiguities leading to greater risks. To minimize such opportunism, the contracting organization must bear transaction costs, such as establishing performance measures in the contract, monitoring contractors' performance, and executing necessary penalties (Brown & Potoski, 2005). However, at some points, the service may become so difficult to measure that the costs of identifying and implementing effective performance measures overwhelm their benefits. In such circumstances, public managers may benefit from developing a thorough understanding of the process the contractor undertakes in order to gauge whether the contractor is performing at a high level. In addition, extensive communication, planning, and coordinating will be likely help to reduce the chances of contractors pursuing self-interest with guile. As suggested by a growing body of literature on managing contracts, governments must maintain or develop sufficient contract management capacity to mitigate these risks (Brown & Potoski, 2003a; Gansler, 2002; Kelman, 2002; Romzek & Johnston, 2002; Van Slyke, 2003; Brown & Potoski, 2005:347)[14].

3.4.2 Contract Management Capacity

The success or failure of any alternative service-delivery arrangement likely depends on how well governments can manage the entire contract process, from assessing the feasibility of contracting through implementation to monitoring and evaluation-activities that require strong government contracting capacity (Brown & Potoski, 2003). Brown and Potoski (2003) identified three phases of contract management in this contracting process: In the first phase, feasibility assessment, public managers determine whether a

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[14]Brown and Potoski (2005) identified two service characteristics conditions when contracting is more risky. 1. Asset specificity is the extent to which resources applied to delivering a service can be applied to other services. Highly asset specific services are prone to monopoly markets. 2. Ease of measurement is the extent to which the quality and quantity of service outcomes and outputs can be easily gauged (p.348).

particular service is appropriate for contracting and whether contractors exist from which to purchase the service. Next, public managers implement the contracting process by bidding the contract, assessing and selecting a contractor, and negotiating and structuring the contract terms. In the final phase, public managers monitor and evaluate contractor performance to determine whether the contractor has fulfilled the responsibilities specified in the contract[15]. All three capacities are needed for effective contracting.

1. Feasibility Assessment Capacity

Feasibility assessment capacity-the capacity to determine whether to make or buy the good or service, includes hiring staff trained in market analysis or legislative study groups to assess whether a service or function is appropriate for contracting. Poor contract performance can result from insufficient management capacity in any one of these functional areas. For example, governments lacking the capacity to assess the feasibility of contracting may contract for services in a market in which there is only one provider, and therefore they may be no better off than they were under public monopoly provision (Sclar, 2000; Brown & Potoski, 2003). Alternatively, governments that lack sufficient capacity to effectively bid, let, and negotiate contracts may enter into arrangements in which they become dependent on unprincipled service providers and lack the legal means to enforce the contract (Kettl, 1993). As indicated above related to the differences on types of service delivery contracting, we can expect these institutional differences to impact the relationship between feasibility assessment capacity and performance measurements. As well, the state and local hierarchical relationship is nested. Then we make the following hypotheses:

H1: In terms of local service delivery contracting (private contracting, nonprofit contracting) nested in state levels over time, the higher the level of feasibility assessment capacity a local government has, the higher the likelihood a local

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[15]Brown and Potoski (2003:15) identified three components of contract-management capacity:1. Feasibility assessment capacity- the capacity to determine whether to make or buy the good or service(examples include hiring staff trained in market analysis or legislative study groups to assess whether a service or function is appropriate for contracting). 2. Implementation capacity-the capacity to bid the contract, select a provider(s), and negotiate a contract (examples include hiring legal staff to negotiate tenders and creating management systems for trial contracting or benchmarking). 3.Evaluation capacity-the capacity to evaluate the contractor's performance (examples include procedures for collecting performance information and staff to conduct project audits).

government will adopt all performance measures (citizen satisfaction, cost, contract compliance).

2. Implementation Capacity

Implementation is the carrying out of a basic policy decision, usually incorporated in a statute but which can also take the form of important executive orders or court decisions. The implementation process normally runs through a number of stages beginning with passage of the basic statute, followed by the policy outputs (decisions) of the implementation agencies, the compliance of target groups with those decisions, the actual impacts- both intended and unintended- of those outputs, the perceived impacts of agency decisions, and finally, important revisions in the basic statute (Mazmanian & Sabatier, 1983:20-21). The Implementation capacity- the capacity to bid the contract, to select a provider(s), and to negotiate a contract such as hiring staff to negotiate tenders and to create management systems for contracting or benchmarking. The governments that lack sufficient capacity to effectively bid, let, and negotiate contracts may enter into arrangements in which they become dependent on unscrupulous service providers and lack the legal means to enforce the contract (Kettl, 1993; Brown & Potoski, 2003). Then the following hypothesis can be made:

H2: In terms of local service delivery contracting (private contracting, nonprofit contracting) nested in state levels over time, the higher the level of implementation capacity a local government has, the higher the likelihood a local government will adopt performance measures (citizen satisfaction, cost, contract compliance).

3. Evaluation Capacity

Evaluation capacity addresses two dimensions: how a policy may be measured against the goals it sets out to attain, and the actual impact of the policy. The analysis of evaluation as an activity gets involved in the measurement of goal performance. Impact capacity, on the other hand, addresses the effect of a policy as a whole or the process by which implementation has taken place (Parsons, 1995:545). For service delivery contracting, evaluation capacity- the capacity to evaluate the contractor's performance

such as including procedures for collecting performance information and staff to conduct project audits (Brown & Potoski, 2003:155). Governments also may fall prey to a lack of evaluation capacity. In the absence of the capacity to monitor and audit contracts, governments may be unable to determine whether the contractor has delivered the service according to contract specifications (Milward, 1996).

In the public sectors, organizational success is increasingly also measured by the satisfaction of stakeholders. The stakeholders may have conflicting views and interests regarding themselves and their organizations. Often the stakeholder evaluation may separately assess external and internal stakeholders. External stakeholders include citizens, clients receiving services, other public sector agencies in the policy process that interact with the program, vendors, the legislature, the elected executive, media and suppliers. Internal stakeholders directly receive input and services from other organizational staff. Stakeholders judge the quality and performance of the program based on their own criteria, which may be different from the professional standards that organizational staff uses in assessing their performance. Local government must identify the internal and external stakeholders, assess their relative importance and interest in the organization, and survey or interview them to determine their expectations and assessments of the organization and the program (Berry, 2007). In addition, there are different types of service delivery contracting and nested state-local relationship, so the following hypothesis is expected:

H3: In terms of local service delivery contracting (private contracting, nonprofit contracting) nested in state levels over time, the higher the level of evaluation capacity- inside stakeholder a local government has, the higher the likelihood a local government will adopt performance measures (citizen satisfaction, cost, contract compliance).

H4: In terms of local service delivery contracting (private contracting, nonprofit contracting) nested in state levels over time, the higher the level of evaluation capacity-outside stakeholder a local government has, the higher the likelihood a local

government will adopt the performance measurement (citizen satisfaction, cost, contract compliance).

3.5 Implementation Obstacles and Performance Measurement

Although local governments have expanded their efforts in service delivery contracting to deal with fiscal problems and new challenges, they have experienced barriers and difficulties. A description of the context in local service delivery contracting would be incomplete without consideration of the difficulties and barriers faced by local managers. These implementation obstacles of local service delivery contracting may be internal or external to the locality and the major barriers such as opposition from citizens, opposition from local government line employees, lack of staff with sufficient expertise in contract management.

Difficulty of implementation is a manifestation of an innovation's complexity, identified by Rogers (1995) as difficulty in using and understanding an innovation. Greater innovation complexity, manifested in greater difficulty of implementation, might tend to lessen an innovation's capacity to improve organizational performance, as the innovation might not be understood or implemented well and might be prone to frustration and delays. Accordingly, a negative relation is expected between innovation difficulty of implementation and innovation adoption. Yet the contracting services themselves need to take steps to promote the success of the implementation of those services. Public managers face obstacles not unlike those faced by contractors, and accordingly, they need some kinds of performance measurements to determine how to monitor and evaluate those services (Marvel & Markel, 2007). In addition, there are different types of service delivery contracting and nested state-local relationship, then the following hypothesis is expected

H5: In terms of local service delivery contracting (private contracting, nonprofit contracting) nested in state levels over time, the higher the level of implementation obstacles a local government has, the higher the likelihood a local government will adopt the performance measures (citizen satisfaction, cost, contract compliance).

3.6 State Factors and Local Performance Measurement

As discussed in chapter one, the hierarchical relationship between state and local levels indeed influence local practices. In terms of local service delivery contracting, several main state factors are expected to influence the implementation of the adoption of performance measurements.

3.6.1 State Politics

Management innovation concerns organizational structure and processes related to management (Damanpour & Evan, 1984; Kimberly & Evanisko, 1981). In the public sector, public administrators have significant discretion in the adoption of management innovation. We would be negligent if we did not pay attention to the implications of an enduring concern in public administration: the so-called politics-administration dichotomy. We seldom see empirical evidence showing simultaneous political and administrative effects. Without political demands for performance information, the exercise of performance measurement often becomes irrelevant in policy dialogue and budgetary debates (Coggburn & Schneider, 2003).

The previous research confirmed that state politics indeed influence the operations of state governments. Further, state politics may influence local governments, because local residents elect state officials and state legislatures. And state governments and state legislatures need to respond local needs, if they want to satisfy the needs of the citizens. One way to generate political demands for performance information and make the exercise of performance measurement more meaningful is to ensure that performance measures reflect the priorities and concerns of the citizens. Elected officials always care about what their constituencies think. If performance measures are developed and selected based on citizen inputs, elected officials may give them greater political credibility and may pay closer attentions to the data in the decision-making process (Ho, 2007).

The empirical results in Ni and Bretschneider's research (2007) suggested that, unlike previous studies done at the local government level, political logic is strongly present in state-level contracting decisions. They have confirmed that the political environment of a state significantly shapes the contracting decision. Moon and deLeon (2001) found a positive relation between leader liberal ideology and the adoption of reinvention;

however, Streib, Rivera and Willoughby (2000) found a negative relation in it. Lastly, tenure is an influence, as newly elected governors and their newly appointed agency heads are positively associated with the adoption of strategic planning practices (Berry, 1999), an aspect of New Public Management. The ideological alignment links the innovation with larger environmental forces that might encourage or discourage innovation adoption. In Schneider's (2007) study, ideological alignment has the strongest effect on the adoption of administrative innovative practices in U.S. local governments. This result indicated that innovations should be evaluated in terms of changes in the institutional environment at their time of adoption, as was put forth by Tolbert and Zucker (1983) in research regarding the progressive movement and civil service reform. Norms and values might influence the perceived legitimacy of an innovation and might, therefore, facilitate its adoption and diffusion. Divided government in turn heightens legislative and administrative micromanagement of the federal bureaucracy, as well in state governments and local governments (Fiorina, 1991; Durant & Wilson, 1993). As indicated above, state and local relationships are hierarchical affiliations. Therefore, we can infer the following hypotheses:

H6: In terms of local service delivery contracting (private contracting, nonprofit contracting) nested in state levels over time, a state with divided government was more likely than a state with unified government to positively influence the adoption of performance measures (citizen satisfaction, cost, contract compliance).

3.6.2 State Reinventions

By the mid-1990s, some states actively implemented reforms that could be labeled "reinvention."(Brudney et al., 1999) These earlier efforts at state management reform often required significant organizational reorganization, such as consolidating agencies, creating cabinet structures, eliminating elected positions and governing boards, and altering reporting system. Unlike the earlier reforms that were frequently a product of a major reform commission, study group, or similar enterprise, state reinvention may have resulted from a governor's initiative or may simply have been undertaken by a agency director (Brudney et al., 1999; Brudney & Wright, 2002). Governors in several states

have placed a set of reinvention reforms on their political agendas. Brudney, Hebert and Wright (1999) had found that in 38 states, over 50 percent of agency heads reported their states had engaged in reinvention or similar reforms. The trend of government reform, reinventing government, marks a characteristic of results-oriented management in state level, which emphasizes the results rather than the process in a program or in a policy. The frequently-used management skills for the result management include performance measures, strategic plan, e-government, performance budgeting, e-government, contracting services, human capital and so on. Because of state and local relationships, we can expect the degree of state reinvention will influence the practices of its jurisdictional localities. Therefore, the following hypothesis can be made:

H7: In terms of local service delivery contracting (private contracting, nonprofit contracting) nested in state levels over time, the higher the level of state reinventions a state government has, the higher the likelihood a local government will adopt the performance measures (citizen satisfaction, cost, contract compliance).

3.6.3 State Legislation

State legislatures are also increasingly involved in local administrative matters such as local economic development, local service delivery. Under state legislation, local governments must work together to prepare metropolitan or regional plans that address the interrelated goals of controlling growth, combating environmental problems (such as air and water pollution), and providing adequate infrastructure. Although states review local plans to ensure that they are consistent with statewide planning goals, states give local governments varying degrees of control over the specific details of plan content (Berman, 2006:41). State legislatures make many of the most important decisions affecting local government. Governors set the agenda for taxing and spending programs and are often able to influence the fate of legislation that directly affects local governments (Berman, 2006:43). State mandates—whether in the form of statutes, executive orders, or administrative regulations— often require localities to adopt new programs or meet higher performance standards, and thereby create unfunded costs for local governments (Berman, 2006:46). For many states, performance-based budgeting is

made through targeted legislation by incorporating accountability, strategic planning, reinvention, budget reform, as well as performance requirements in their appropriation bill (Melkers & Willoughby, 1998:67). As expected, state legislation may directly influence local practices, such as affecting types of service delivery contracting. Then the following hypothesis is made:

H8: In terms of local service delivery contracting (private contracting, nonprofit contracting) nested in state levels over time, a state adopting performance-based budgeting legislation should be more likely than a state without the performance legislation to positively influence the adoption of performance measures (citizen satisfaction, cost, contract compliance).

3.6.4 State Fiscal Health

State financial aid to local governments consists of grants and shared taxes. Grants are usually for specific programs in areas such as education or transportation, although most states also provide unrestricted grants for general purposes. Much of the unrestricted aid comes to local governments as compensation for a state action—for example, a state required property tax exemption that reduces local revenues—or to help local governments pay for state-mandated services (Berman, 2006:52).

Many local governments have experienced increasing financial stress since the late 1990s. Fiscal stress, though having stimulated many downsizing reforms, is unlikely to drive state-level decisions to contract out e-government services. Rather, the presence of resource slack may offer public officials the opportunity to expand programs or to pursue service quality through contracts (Ni & Bretschneider, 2007). However, the empirical evidence on the relationship between fiscal stress and contracting is mixed. In their study of contracting in school districts, O'Toole and Meier (2004) found that high levels of local resources were positively related to the amount of contracting. Recognizing that some governments may adopt contracting to improve service quality, Boyne (1998) suggests reconsidering the theoretical relationship between fiscal stress and contracting out. As discussed above, the state fiscal health influences local administrative practices. Then we can make the following hypotheses:

H9: In terms of local service delivery programs nested in state levels over time, the higher the level of state fiscal health a state government has, the higher the likelihood a local government will adopt the performance measures (citizen satisfaction, cost, contract compliance).

3.7 Internal Determinants

Early analyses attributed policy choices, particularly in states and localities, to the levels of political, social, or economic development specific to the governmental jurisdiction such as the size of populations, council-manager form, and Berry and Berry (1990) termed this approach an internal determinants model. As previously noted, management innovation is affected by a government's environmental contexts (Berry, 1994a; Berry & Wechsler, 1995). For example, local officers who chose to use mandates and inducements assumed that if the right incentives are offered, populations have the capacity to act in accordance with the policymakers' expectations (Schneider & Ingram, 1990).

Researchers have attempted to take different approaches in examining characteristics of a jurisdiction that would explain the adoption of a particular management. Then, we can expect that the internal determinants belonging to one local jurisdiction influence the adoption of management innovation. Considering the contextual factors, a positive relation exists between the economic health, population size, and growth and density of local communities and the tendency for their local governments to adopt government reinvention (Berry & Wechsler, 1995). For example, the presence of external interest groups promotes government reinvention, as do local governments working regularly with businesses; regional diffusion, or adoption by nearby states, is positively related to adoption within a state; Sun Belt locations are a positive, and New England/Mid-Atlantic locations are a negative factor in promoting innovation (Ni & Bretschneider, 2007:601).

The spatial proximity is important in the internal determinants of a diffusion theory (Berry & Baybeck, 2005). The spatial location of Midwestern and Western cities, for example, explained why these cities were early adopters of many of the features of municipal reform. The Northeast, by comparisons, saw fewer examples of "council-

manager cities" and there has been somewhat less diffusion of municipal reform there (Frederickson & Smith, 2003). The previous research also found that the influences of strategic planning on local economic development policy were evident in council-manager localities, but not in mayor-council ones (Feiock & Kim, 2001; Feiock et al., 2003). And the governments with council-manager form also were inclined to adopt performance measurements more than those with mayor-council form (Rivenbark & Kelly, 2003, 2005). The council-manager government with professional managers has been inclined to adopt management innovation with satisfying specific economic needs, and in pursuance of new service-delivery alternatives, either in the face of fiscal exigency or perhaps as a mean to promoting greater efficiency over a broad geographic area. Poister and Streib (1999) reviewed the inconsistent use of performance measurement among local governments and find that larger local governments and those with council-manager governments are more likely to use performance measurement.

For outputs and outcomes, the council-manager governments showed lower expenditures in road maintenances and improvements. The council-manager governments are more cost-efficient. This proposition has been supported by findings from many city studies, which concluded that government structure was related to lower expenditures and property taxes (Cole, 1971; Dye & Garcia, 1978; Lineberry & Fowler, 1967; Lyons, 1978; Stumm, 1998). However, previous research on counties appears to contradict this study's findings and the reform theory; i.e., council-manager counties spend more (DeSantis & Renner, 1994; Ostrom, 1976; Schneider & Park, 1989).

CHAPTER FOUR
RESEARCH DESIGN

This chapter will address data collection, sample characteristics, service delivery contracting with service category, operational definitions and variables, and analytical methods including anova repeated measures, multilevel linear growth model, multiple growth curve model, and intraclass relationship.

4.1 Data Collection

The data are collected from seven sources covering two levels: A. Local level: 1. Local Government Service Delivery Choices of International City and County Management Association (ICMA). B. State level: 1. Government Performance Project (GPP) of Maxwell School of Citizenship and Public Affairs at Syracuse University. 2. American State Administrator's Project (ASAP) of University of North Carolina–Chapel Hill. 3. National Conference of State Legislatures. 4. National Governors' Association. 5. The Census of Bureau. 6. Julia Mekers and Katherine Willoughby (1998)'s research in the performance-based budgeting legislation in the states. All independent, dependent, and control variables come from different sources, which avoids the common-source bias.

The surveys of ICMA local government service delivery choices, mailed to the Chief Administrative Officers in municipalities, were designed to examine the information on practices, experiences, and policies of alternative service delivery in local governments. We introduce many items as actual or potential determinants of the management innovation of local service delivery contracting. The same questions were surveyed, updated repeatedly and independently in the same selected sample governments in 1992, 1997, and 2002. However, this survey only provided the information of the variables attributed to the local level, which did not fully satisfy our research needs. Much of the vast and growing empirical literatures on service contracting by governments rely on the Profile of Local Government Service Delivery Choices surveys conducted by the International City and County Management Association's (ICMA). Every five years,

local government officials are queried about private service delivery, which is defined by the ICMA as comprising "for-profit firms, non-profit organizations, and private industries" (ICMA, 2002). Officials are asked about activities undertaken to ensure success in implementing private service delivery, obstacles to adopting private service delivery, and techniques used to evaluate systematically the performance of contractors (Marvel & Markel, 2007).

This dissertation also uses the Maxwell School's GPP overall management capacity grades for all states in 1999 (Barrett & Greene, 1999). The GPP assigned letter grades to the states for five management subsystems: financial management, capacity management, human resources management, information technology, and managing for results. The grades for each subsystem were based on a criteria-based assessment scheme. In this process, subject matter experts (that is, academics, practitioners, etc.) for each area identified criteria deemed to be essential components of successful government management in each subsystem (Ingraham & Kneedler, 2000). While the GPP is not without its critics (Kirlin, 2001), its grades allow for systematic inquiry into public management's effects across governments (Brudney, O'Toole, & Rainey, 2000). The American State Administrator's Project (ASAP) at the University of North Carolina–Chapel Hill are conducted in both 1994 and 1998. The ASAP included 11 features designed to measure the consideration and implementation of several administrative reforms underlying the "reinventing government" movement (Brudney, Hebert, & Wright, 1999). The ASAP survey was sent to more than 3,000 state agency heads, the full top-level management cohort in all 50 state governments (Cho & Wright, 2001; Burke & Wright, 2002:8). If we accept that the ASAP and GPP offer different approaches to measuring governmental performance- or, alternatively, the status of reform efforts directed toward this purpose-the empirical relationship between the two provides an indication of validity (Brudney & Wright, 2002)[16].

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[16] The GPP and ASAP research efforts represent contrasting approaches to state-level administrative performance. Given the similarities as well as the marked contrasts between the two approaches, we would expect to find a modest positive correlation between the ASAP reinvention scales for the states (to which our critic takes such vehement exception) and the GPP state summary indexes. Based on the strengths as well as the differences of the two approaches, the Spearman rank-order correlation between the GPP state scores for 1998 and the ASAP state reinvention scales for the same year is .45 (statistically

The data are also drawn from other sources such as the National Conference of State Legislatures, the National Governors' Association and the Census of Bureau, which supply much of the information of variables with a desire to estimate the variations of state situations which influence local management innovation.

4.2 Sample Characteristics

The surveys are generally representative of municipalities and counties along basic criteria such as population, geographic location, and metropolitan status. We have 230 valid repeated samples made up of 185 cities with populations 10,000 and over, and made up of 45 counties with populations 25,000 and over, which are nested in 42 states in two cohorts of five years from 1992, 1997 to 2002. The potential sampling bias in this research holds true for studying local management innovation is small sample. Table 4.1 presents demographic information on the characteristics of these repeated measurements, which summarizes the frequencies and percents of responding localities on geographical region, and metropolitan statistical areas. We can see, from demographic information, 10.87％ of the sampling localities are located in Northeast areas in comparisons with 22.61％ of those in North Central areas, 41.74％ of those in South areas, and 24.78％ of those in West areas. Table 4.1 also addresses that there is no significant difference between the sample and the population in terms of the sampling locations (t=0.03, p＞ 0.01)[17]. In terms of metropolitan statistical area (MSA), 33.48％ of the sample governments are located in the central cities and 47.83％ of those are from the suburban located in MSA, while 18.70％ of the remains are independent cities/counties. The representative sample test shown in table 4.1 also informs that there is no significant difference between the sample and the population in terms of metropolitan statistical area.

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significant at p < .01). As anticipated, the association is positive, healthy, though not overpowering (Burke & Wright 2002; Brudney & Wright, 2002 :28-29).

[17] The information of the population comes from Survey Response Spreadsheet Excel of ICMA Alternative Service Delivery 2002-2003, which retrieved July 9, 2008 from http://bookstore.icma.org/freedocs/ asd2002_2003_srt.xls

Table 4.1: Demographic Information and Representative Sample Test For Sample Localities

Geographic Region	Sample		Population		T-Scores	P-Value
	Frequencies	Percents	Frequencies	Percents		
Northeast (New England and Mid-Atlantic)	25	10.87%	1187	22.10%	0.03	P>0.1
North Central (East North-Central and West North-Central)	52	22.61%	1556	28.92%		
South (South Atlantic, East South-Central, and West South-Central)	96	41.74%	1737	32.35%		
West (Mountain and Pacific Coast)	57	24.78%	890	16.57%		
Metropolitan Statistical Area						
Central (city = core city in an MSA; central counties city is located)	77	33.48	999	18.60	0.00	P>0.1
Suburban (city/county located in MSA)	110	47.83	2587	48.18		
Independent (city/county not located in MSA)	43	18.70	1784	33.22		
Local Governments	230					
States	42					

4.3 Service Delivery Contracting with Service Category

Most localities depend on contracting mechanisms to deliver their services over time. Three types of service delivery contracting employed by local governments will be analyzed in this dissertation, and the three is an aggregate of the first two. They are private contracting, nonprofit contracting, and total contracting which makes up all two types of service delivery contracting. Table 4.2 shows the types of service delivery contracting (private contracting, and nonprofit contracting) in our sample localities from 1992, 1997, and 2002. As table 4.2 indicates, above 70% of localities adopt private contracting (private for profit) over time. And above 40.00% of localities adopt nonprofit contracting (private nonprofit) over time.

Table 4.2: Types of Service Delivery Contracting in Our Sample Localities Over Time (N=230)

	Total Contracting			Private Contracting			Nonprofit Contracting		
	1992 (%)	1997 (%)	2003 (%)	1992 (%)	1997 (%)	2003 (%)	1992 (%)	1997 (%)	2003 (%)
Yes	96.94	88.34	97.39	89.13	77.39	86.09	57.39	40.00	67.83
No	3.04	12.61	2.61	10.87	22.61	13.91	42.61	60.00	32.17

These service categories of local contracting include public works/transportation, public utilities, public safety, health and human services, parks and recreation, cultural and arts programs, as well as support functions can been classified by interlocal private contracting, and nonprofit contracting over time. And table 4.4 shows which item makes up these service categories.

Table 4.3: Percentages of Service Categories for Local Service Delivery Contracting In The Sample Localities Over Time (N=230)

	Total Contracting			Private Contracting			Nonprofit Contracting		
	1992 (%)	1997 (%)	2003 (%)	1992 (%)	1997 (%)	2003 (%)	1992 (%)	1997 (%)	2003 (%)
PublicWorks/Transportation	88.70	85.65	82.61	55.65	46.09	56.96	35.22	27.39	14.35
Public Utilities	25.22	19.43	14.35	11.07	5.65	9.57	6.52	13.91	0.87
Public Safety	82.61	57.83	47.39	70.00	43.48	34.78	13.48	9.13	6.52
Health and Human Services	79.57	64.35	55.65	39.57	29.13	34.78	57.39	34.35	20.43
Parks and Recreation	23.04	27.39	30.00	7.34	16.52	6.09	3.91	7.39	14.35
Cultural and Arts Programs	50.00	37.83	38.26	5.22	5.65	5.35	30.87	20.87	23.48
Support Functions	75.65	65.65	62.17	53.35	54.35	55.65	3.04	4.35	4.78

Table 4.4: Service Category and Its Including Items

Service Category	Item
Public Works/Transportation	1. Residential solid waste collection. 2. Commercial solid waste collection. 3. Solid waste disposal. 4. Street repair. 5. Street/parking lot cleaning. 6. Snow plowing/sanding. 7. Traffic sign/signal installation/maintenance. 8. Parking meter maintenance and collection. 9. Tree trimming and planting on public rights of way. 10. Maintenance and administration of cemeteries. 11. Inspection/code enforcement. 12. Operation of parking lots and garages. 13. Operation/maintenance of bus transit system. 14. Operation/maintenance of paratransit system. 15. Operation of airports. 16. Water distribution. 17. Water treatment. 18. Sewage collection and treatment. 19. Disposal of sludge. 20. Disposal of hazardous materials.
Public Utilities	1.Utility operation and management_ electricity. 2. Utility operation and management_ gas. 3. Utility meter reading. 4. Utility billing.
Public Safety	1. Crime prevention/patrol. 2. Police/fire communications. 3. Fire prevention/suppression. 4. Emergency medical service. 5. Ambulance service. 6. Traffic control/parking enforcement. 7. Vehicle towing and storage.
Health and Human Services	1.Sanitary inspection. 2.Insect/rodent control. 3.Animal control. 4.Operation of animal shelters. 5.Operation of daycare facilities. 6.Child welfare programs. 7.Programs for the elderly. 8.Operation/management of hospitals. 9.Public health programs. 10.Drug and alcohol treatment programs. 11.Operation of mental health/mental retardation programs and facilities. 12. Prisons/jails. 13.Operation of homeless shelters.
Parks and Recreation	1. Operation and maintenance of recreation facilities. 2. Parks landscaping and maintenance. 3. Operation of convention centers and auditoriums.
Cultural and Arts Programs	1. Operation of cultural and arts programs. 2. Operation of libraries. 3. Operation of museums.
Support Functions	1. Buildings and grounds maintenance. 2. Building security. Fleet management/vehicle maintenance, including a. Heavy equipment, b. Emergency vehicles, c. All other vehicles. 3.Payroll. 4.Tax bill processing. 5.Data processing. 6.Collection of delinquent taxes. 7.Title records/plat map maintenance. 8.Legal services. 9.Secretarial services. 10.Personnel services. 11.Public relations/public information.

4.4 Operational Definitions and Variables

This section addresses the definitions of the dependent variables, independent variables and control variables at local and state levels. Four dependent variables are citizen satisfaction, cost, contract compliance, and performance measurement which combine the index of citizen satisfaction, cost, and contract compliance. In terms of local levels, five independent variables are made up of these index variables such as feasibility assessment capacity, evaluation capacity_inside stakeholders, evaluation capacity_ outside stakeholders, implementation capacity and implementation obstacles. As well, the demographic information derived from the sample localities is used to control the potential spuriousness such as form of government (council-manager government vs non-council-management government) and metropolitan statistical areas. Based on state levels, four independent variables consist of divided government, state financial health, state reinventions and state law. Two control variables are state populations, and the governors affiliated with the Republican Party. Table 4.5 addresses the operational definition and data sources of dependent variables, independent variables and control variables of local level and of state level.

Table 4.5: Operational Definition and Data Source for Dependent Variables and Independent Variables

Local Level Variable	Operational Definition	Data Source
Performance Measures	Your local government use any techniques to systematically evaluate its private service delivery(ICMA, 1992, 1997, 2003).	Local Government Service Delivery Choices of ICMA Survey
Feasibility Assessment Capacity	Has your local government studied the feasibility of adopting private service delivery within the past five years? (ICMA, 1992, 1997, 2003).	Local Government Service Delivery Choices of ICMA Survey
Evaluation Capacity-Internal Stakeholders	Who inside your local government was involved in evaluating the feasibility of private service delivery? (ICMA, 1992, 1997, 2003).	Local Government Service Delivery Choices of ICMA Survey
Evaluation Capacity - External Stakeholders	Who outside your local government organization was involved in evaluating the feasibility of private service delivery? (ICMA, 1992, 1997, 2003).	Local Government Service Delivery Choices of ICMA Survey
Implementation Capacity	Has your local government undertaken any activities to ensure success in implementing private service delivery (ICMA, 1992, 1997, 2003).	Local Government Service Delivery Choices of ICMA Survey

Table 4.5: Operational Definition and Data Source for Dependent Variables and
Independent Variables - Continued

Implementation Obstacles	Has your local government encountered any obstacle in adopting private service delivery? (ICMA, 1992, 1997, 2003).	Local Government Service Delivery Choices of ICMA Survey
Metropolitan Statistical Area	Indicates whether municipality is located within an MSA (Metropolitan Statistical Area) as defined/designated by the U.S. Office of Management & Budget (OMB)). 1. MSA (city = core city in an MSA; central counties are these in which a central city is located; suburban = city/county located in MSA). 0. Non-MSA = Independent (city/county not located in MSA).	Local Government Service Delivery Choices of ICMA Survey
Council-Manager Government	1 = Council-manager (CM, city), Council-administrator (CM, county); 2=Non Council-manager (Mayor-council, Commission, Town meeting, Representative town meeting, commission, council-elected executive).	Local Government Service Delivery Choices of ICMA Survey
State Level		
State Reinventions	The variable of state reinvention is conceptualized as the level of how much state reinvents its agencies through empowering to employees, customer services, contract-like relationship, competition, performance incentives, results management and so on(Kettl, 1995; Brudney, Hebert & Wright, 2002).	1.Government Performance Project (GPP) of Maxwell School of Citizenship and Public Affairs at Syracuse University. 2. American State Administrator's Project (ASAP) of University of North Carolina–Chapel Hill.
Divided Government	Divided government indicates that when the governor is controlled by one party with its own ideas, preferences and policy positions and the state legislatures (including State House, State Senate) is controlled by another party with some competing ideas, preferences and policy positions (Coleman, 1999).	1. National Conference of State Legislatures. 2. National Governors' Association.
State Fiscal Health	The average percentage of state actual annual general fund revenue minus general fund expenditures(Ni & Bretschneider, 2007).	The Census of Bureau
State Law	The state has performance or performance legislation (Mekers & Willoughby, 1998).	Julia Mekers and Katherine Willoughby (1998)
Republican Governor	If the political ideology of the state governor was affiliated to the Republican Party at that time, the locality located in that state was coded 1; otherwise, non-Republican governor was coded 0.	National Governors' Association.
State Populations	number of residents living within the state government's jurisdiction as reported in the Census of the Bureau.	The Census of Bureau

1. Dependent Variables

The dependent variables, performance measurements, indicate local governments use the techniques to systematically evaluate their private, and nonprofit service delivery, which ICMA survey ask the question – *"Does your local government use any techniques to systematically evaluate its private service delivery? If "yes," which of the following aspects of service delivery are evaluated?"*. Three aspects of performance measurement evaluate service delivery alternatives: citizen satisfaction, cost and contract compliance (compliance with delivery standards specified in contract). The term private service delivery which ICMA alternative service delivery survey defines includes for-profit firms, non-profit organizations, and private industries.

All three aspects are measured on the dichotomous scale: 1 = adopt, 0 = not adopt. In addition, an index variable of performance measurement combines the variables of citizen satisfaction, cost, and contract compliance with a high internal consistency of Cronbath α, 0.84[18] shown in table 4.6. Thus, four dependent variables are estimated in this dissertation: citizen satisfaction, cost, contract compliance, and performance measurements which combine the previous dichotomous dependent variables.

Table 4.6: Frequencies and Reliability for Selected Items Comprising the Aspects of Performance Measurement

Variable	Selected Items	1992 (%)	1997 (%)	2002 (%)	Total (%)	Cronbach α
Performance Measurement	Citizen satisfaction	35.22	37.83	36.96	36.67	0.84
	Cost	52.61	53.48	48.70	51.59	
	Contract compliance (Compliance with delivery standards specified in contract)	41.30	52.17	49.13	47.54	

Table 4.7 also shows which technique (or capacity) is used to evaluate the above aspects of service delivery contracting, for example, conducting citizen surveys, monitoring citizen complaints, conducting field observations, analyzing data/records (i.e., demographic/finance data). It indicates that these four techniques are often used to evaluate service delivery in all three performance measurement types.

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[18] As a rule of thumb in social science research, an instrument with a Cronbach α value of .70 or higher is considered to have acceptable internal consistency (DeVellis, 2003).

Table 4.7: The Techniques Used to Evaluate the Aspects of Service Delivery

	Citizen Satisfaction	Cost	Contract Compliance
Conducting citizen surveys	95.73%(112/117)	88.89%(104/117)	81.97%(95/117)
Monitoring citizen complaints	78.29%(220/281)	90.39%(254/281)	85.77%(241/281)
Conducting field observations	66.89%(196/293)	91.47%(268/293)	87.03%(255/293)
Analyzing data/records (i.e., demographic/finance data)	63.99%(183/286)	92.66%(265/286)	85.31%(244/286)

2. Independent Variables

This section states the information of independent index variables in local level and state levels. Table 4.8 shows frequencies and reliability for the index variables of contract management capacity and implementation obstacles over time.

Local Level:

A. Feasibility Assessment Capacity: this index variable is measured with 7 response items, which ICMA original data separate each responded scale into each individual item. This variable is defined as one local government responded to study the feasibility of adopting private delivery alternatives within the last five years because of external fiscal pressures, including restrictions placed on raising taxes, e.g., proposition. Then the index variable of feasibility capacity summarizes the scores of the following seven item parcels[19]: 1. External fiscal pressures, including restrictions placed on raising taxes, e.g., Proposition 13. 2. Internal attempts to decrease costs of service delivery. 3. State or federal mandates tied to intergovernmental financing. 4. Change in political climate emphasizing a decreased role for government. 5. Active citizen group favoring privatization. 6. Unsolicited proposals presented by potential service providers. 7. Concerns about government liability. This variable has a Cronbach α, of 0.71.

B. Evaluation Capacity_Internal Stakeholders: the variable of evaluation capacity-internal stakeholders is defined by the ICMA survey item which asked the following question "Who inside your local government was involved in evaluating the feasibility of private service delivery?" This index variable summarizes the scores of the following

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[19] A parcel is a total score across a group of homogeneous items and is usually considered a continuous variable (Kline, 2005:70).

nine items of dichotomous choices: 1. Manager/CAO, 2. Assistant manager/CAO, 3. Management and/or budget analysts, 4. Department heads, 5. Finance/accounting officer, 6. Attorney, 7. Procurement/purchasing officer, 8. Line employees, and 9. Elected officials. This variable has a Cronbach α, of 0.80.

C. Evaluation Capacity_External Stakeholders: the variable of evaluation capacity - external stakeholders is operationalized with ICMA survey asked "Who outside your local government organization was involved in evaluating the feasibility of private service delivery?". This index variable summarizes the scores of the six following items of dichotomous choices: 1. Potential service deliverers, 2. Professionals/consultants with expertise in particular service areas, 3. Service recipients/consumers, 4. Managers/CAOs of other local governments who have experience using private service delivery, 5. Citizen advisory committee, and 6. State agencies, leagues, or associations. This variable has Cronbach α, of 0.70.

D. Implementation Capacity: the variable of implementation capacity is measured with a 12 item response to the ICMA question "Has your local government undertaken any activities to ensure success in implementing private service delivery?" The index of implementation capacity summarizes the scores of the following questions: 1. Identified successful uses of private alternatives in other jurisdictions, 2. Established a citizens' advisory committee on private alternatives, 3. Hired consultants to analyze feasibility of private alternatives, 4. Allowed government departments to compete with the private sector in the bidding process, 5. Developed programs to minimize the effect on displaced public employees, 6. Recommended changes in state laws, 7. Recommended changes in local laws, 8. Proposed implementation of private alternatives on a trial basis, 9. Applied private alternatives to new services, 10. Applied private alternatives to growing services, 11. Surveyed citizens, and 12. Kept the service complaint mechanism in-house. This variable has Cronbach α, of 0.75.

E. Implementation Obstacles: the variable of implementation obstacles is defined by the responses to the question "Has your local government encountered any obstacle in adopting private service delivery?" The index of implementation obstacles summarizes the scores of the eleven following items: 1. Opposition from citizens, 2. Opposition from elected officials,3 Opposition from local government line employees, 4. Opposition from

department heads, 5. Restrictive labor contracts/agreements, 6. Legal constraints, 7. Insufficient supply of competent private deliverers, 8. Lack of staff with sufficient expertise in contract management, 9. Lack of empirical evidence on the effectiveness of private alternatives, 10. Lack of precedent; institutional rigidities, and 11. Problems with contract specifications. This variable has a Cronbach α, of 0.72.

Table 4.8: Frequencies and Reliability for the Index Variables of Contract Management Capacity and Implementation Obstacles Over Time [a]

Variable	Selected Items	1992 (%)	1997 (%)	2002 (%)	Total (%)	Cronbach α
Feasibility Assessment Capacity	External fiscal pressures, including restrictions placed on raising taxes, e.g., Proposition 13	43.91	39.57	29.57	37.68	0.71
	Internal attempts to decrease costs of service delivery	70.43	73.04	56.96	66.81	
	State or federal mandates tied to intergovernmental financing	15.22	5.65	4.78	8.55	
	Change in political climate emphasizing a decreased role for government	19.57	25.65	12.17	19.13	
	Active citizen group favoring privatization	6.52	6.96	3.91	5.80	
	Unsolicited proposals presented by potential service providers	23.04	15.22	13.48	17.25	
	Concerns about government liability	10.0	7.83	6.09	7.97	
Evaluation Capacity-Inside Stakeholder	Manager/CAO	71.30	82.17	58.26	70.58	0.80
	Assistant manager/CAO	40.87	42.17	38.26	40.43	
	Management and/or budget analysts	26.52	34.78	26.96	29.42	
	Department heads	67.83	76.52	61.30	68.55	
	Finance/accounting officer	39.13	49.57	33.04	40.58	
	Attorney	27.39	29.13	25.22	27.25	
	Procurement/purchasing officer	14.35	22.17	17.39	17.97	
	Line employees	12.61	16.96	10.43	13.33	
	Elected officials	34.78	45.22	30.87	36.96	
Evaluation Capacity-Outside Stakeholder	Potential service deliverers	40.43	45.65	34.35	40.14	0.70
	Professionals/consultants with expertise in particular service areas	26.09	35.65	27.39	29.71	
	Service recipients/consumers	9.57	15.22	11.30	12.03	
	Managers/CAOs of other local governments who have experience using private service delivery	17.83	20.00	12.17	16.67	
	Citizen advisory committee	13.48	18.26	11.74	14.49	
	State agencies, leagues, or associations	5.22	5.22	2.17	4.20	

Table 4.8 Frequencies and Reliability for the Index Variables of Contract Management Capacity and Implementation Obstacles Over Time [a]- Continued

Implementa-tion Capacity	Identified successful uses of private alternatives in other jurisdictions	42.17	42.17	33.04	39.13	
	Established a citizens' advisory committee on private alternatives	6.52	6.96	3.91	5.80	
	Hired consultants to analyze feasibility of private alternatives	15.22	21.74	15.65	17.54	
	Allowed government departments to compete with the private sector in the bidding process	16.52	24.35	16.96	19.28	
	Developed programs to minimize the effect on displaced public employees	11.30	19.13	16.09	15.51	
	Recommended changes in state laws	6.52	5.22	2.17	4.64	0.75
	Recommended changes in local laws	4.78	3.91	4.35	4.35	
	Proposed implementation of private alternatives on a trial basis	18.26	18.70	16.52	17.83	
	Applied private alternatives to new services	19.57	16.52	13.04	16.38	
	Applied private alternatives to growing services	18.70	17.83	14.78	17.10	
	Surveyed citizens	5.65	9.13	6.96	7.25	
	Kept the service complaint mechanism in-house	14.35	13.91	16.52	14.93	
Implementation Obstacles	Opposition from citizens	19.13	11.74	11.30	14.06	
	Opposition from elected officials	23.91	16.96	16.52	19.13	
	Opposition from local government line employees	33.48	29.57	28.70	30.58	
	Opposition from department heads	23.48	13.04	14.35	16.96	
	Restrictive labor contracts/agreements	16.96	11.30	12.61	13.62	
	Legal constraints	10.87	8.26	6.09	8.41	0.72
	Insufficient supply of competent private deliverers	19.13	12.17	14.78	15.36	
	Lack of staff with sufficient expertise in contract management	10.43	3.91	6.09	6.81	
	Lack of empirical evidence on the effectiveness of private alternatives	19.57	11.30	12.17	14.35	
	Lack of precedent; institutional rigidities	13.91	8.70	8.70	10.43	
	Problems with contract specifications	4.78	2.61	4.35	3.91	

a. The scales of selected questions comprising the index of aspects of the management capability and implementation obstacles are measured on the dichotomous choices.

State Level:

A. State Reinventions: The variable of state reinvention is conceptualized as the level of how much state reinvents its agencies through empowering to employees, customer services, contract-like relationship, competition, performance incentives, results

management and so on (Kettl, 1995; Brudney, Hebert, & Wright, 2002). Because the GPP assigns only letter grades, we have operationalized management capacity using a standard letter-grade point-conversion scheme. In combinations with GPP and ASAP[20], we assign scores to state grades with the range from A- = 7 to C-=1.

B. State Politics_Divided Government: the variable of state divided government indicates that when the governor is controlled by one party with its own ideas, preferences and policy positions and the state legislatures (including State House, State Senate) are controlled by another party with other competing ideas, preferences and policy positions (Coleman, 1999).

C. State Fiscal Health: the variable of state financial health is constructed as the average percentage of state actual annual general fund revenue minus general fund expenditures (Ni & Bretschneider, 2007). A negative value indicates decreasing fiscal health or greater fiscal stress. A positive number suggests surplus and slack resources.

D. Key State Performance Legislation: the variable of key state performance legislation is operationalized as state incorporated themes of accountability, strategic planning, reinvention and budget reforms into performance requirement through targeted legislation and appropriation bills (Mekers & Willoughby, 1998).

3. Control Variables

We introduce an internal determinants control variable in two ways- at the local level and the state level:

Local Level:

A. Council-Manager Government: Government structure and capacity also may affect the likelihood of adopting management innovation. Governments with more professional management structures-those with council-manager forms of government-should be more likely to adopt management innovation. We include a dummy variable, scored, 1 if the government is a council-manager form of government; otherwise, mayor-council is scored, 0. In addition, as indicated above, the council-manager government is one of internal determinants which attract much research to study. However, we do not know how the change of council-manager governments influences the adoption of performance

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[20] Because the state grades from ASAP are interval level, we transform them into ordinal level from the highest A- to the lowest C-, according to the range of state grades from GPP.

measurements. Therefore, we create one moderator variable- council-manager government × year.

B. Metropolitan Statistical Area: In addition, within a metropolitan statistical area[21], the accessibility of the community to the central city should be of importance. The municipalities located in a metropolitan statistical area contain a heterogeneous population. This heterogeneity implies the presence of cross-subsidies resulting from the combination of relative spatial uniformity in the provision of local public goods (Garasky, 1997). Therefore, the city or county is scored, 1, if the cities and counties are located within a U.S. Census Bureau standard metropolitan statistical area including central city and suburban, else 0.

State Level:

A. The Republican Governor: If the political ideology of the state governor was affiliated to the Republican Party at that time, the locality located in that state was coded 1; otherwise, non-Republican governor was coded 0.

B. State Populations: we include the number of residents living within the state government's jurisdiction as reported in the Census of the Bureau. Previous research has shown that government contracting is likely to increase as population increases from low to medium sizes and then decrease as population increases from medium to large sizes (Stein, 1990). Thus, we also include state populations to control our models.

4.5 Analytical Methods

4.5.1 Repeated Measurements

Researchers explore different patterns of innovation separately, not because they are invariably independent of one another, but because of the need to avoid biased, mixed-up generations (Mohr, 1976:710). It is better to explore the adoption of local management innovation over time rather than over a single time to capture the diffusion process (Brudney & Selden, 1995). Therefore, this dissertation employs a panel design with a characteristic of repeated measures, which provides stronger inferences about causal direction and more accurate studies of patterns of change (Singleton & Straits, 2005).

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[21] Metropolitan Statistical Areas (MSAs) is discriminated by whether or not the sample municipalities are located within a U.S. Census Bureau standard metropolitan statistical area.

There are generally at least three potential sources of various capacities that have an impact on the correlation among repeated measures on the same individual: a. between-subjects heterogeneity (interindividual variation), b. within-subjects variation (intraindividual variation), c. measurement error (Hedeker & Gibbons, 2006; Fitzmaurice et al., 2004)[22]. This dissertation takes the perspective that growth is a phenomenon that occurs within individual local government, and therefore intraindividual variability is a primary interest in statistical modeling of longitudinal data. A fundamental tension has emerged between interindividual variation, that is, variation between individuals, and intraindividual variation (variation within individuals). Approaches focusing on interindividual variation emphasize establishment of general developmental principles that apply to all individuals. In contrast, approaches focusing on intraindividual variation emphasize understanding change within the individual (Collins, 2006).

4.5.2 Repeated Measures ANOVA

One of the methods employed to estimate repeated measurement is repeated measures ANOVA (analysis of variance). It is useful when you have a panel design when random samples are measured under a number of different conditions. As the sample is exposed to each condition in turn, the measurement of the dependent variable or independent variable is repeated[23]. For example, we might want to know that the effect of the adoption of performance measurements or management capacity was enduring. A repeated measure allows us to assess what happens to the dependent variable or the independent variable over time (Hedeker & Gibbons, 2006:14-29; Fitzmaurice et al., 2004:76-79)[24].

4.5.3 Multilevel Model As A Lens for State and Local Relationship

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[22] A sample member is called a subject. When a dependent variable is measured repeatedly for all sample members across a set of conditions, this set of conditions is called a within-subjects variation. When a dependent variable is measured on independent groups of sample members, where each group is exposed to a different condition, the set of conditions is called a between-subjects heterogeneity (Hedeker & Gibbons, 2006:72-74; Fitzmaurice et al., 2004:36-38).

[23] Using a standard ANOVA across different occasions is not appropriate because it fails to model the correlation between the repeated measures: the data violate the ANOVA assumption of independence. Therefore, there are serious limitations of the repeated-measures ANOVA. A local government who has a high score on test1 is likely to also have relatively high scores on test2 and test3. Similarly, a person who has a low score on one of these is likely to have a low score on all three (Acock, 2006:206).

[24] When an analysis has both within-subjects factors and between subjects factors, it is called a repeated measures ANOVA with between-subjects factors.

Public management, it seems, has been taken simply as a given in the government performance equation (Ingraham & Kneedler, 2000). The relative scarcity of public management government performance scholarship in the public administration literature stems at least partly from widely recognized methodological challenges facing researchers (Donahue, Selden, & Ingraham, 2000; Brudney, O'Toole, & Rainey, 2000; O'Toole, 2000; Dilulio, 1989; Lynn, Heinrich, & Hill, 2000). These difficulties notwithstanding, interest in "recovering" the public management variable (Dilulio 1989; Coggburn & Schneider, 2003) appears to be growing. As Lynn et al. (2001) argue, governance is a complex phenomenon that cannot be understood by examining a single organization or a program. Unfortunately, it is rare that public management research uses appropriate quantitative tools for this sort of arrangement, choosing traditional OLS regression analysis over the HLM (multilevel) strategy. Heinrich and Lynn (2000) also compare OLS and HLM approaches and demonstrate that HLM provides a better understanding of hierarchical governance. One of the strengths of multilevel modeling is the ability to model cross-level effects, or interactions between variables measured at different levels of analysis. In addition, the nesting of observations within groups is fundamental to multilevel modeling. Nesting is the primary reason for doing multilevel analysis. Without nesting, grouping, or clustering, multilevel analysis loses its reason for being (Bickel, 2007:7). Therefore, to estimate local management innovation nested in state level with hierarchical governance, the multilevel method is one of the preferred methods in this dissertation.

4.5.4 Multilevel Growth Model

An interest of this dissertation is to estimate the diffusion of local management performance measures nested in state levels. To analyze the "diffusion" being characteristic of space and time, this dissertation intends to estimate the "growth trajectories" of local management innovation governments nested in the context of state governments[25]. Analysts can estimate the variation in growth patterns and investigate

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[25] Early research resulted in weak, statistically biased test of policy diffusion (Mooney, 2001). The current standard approach for assessing regional diffusion is a pooled time-series, discrete, non-repeating events approach to event history analysis (EHA), introduced to the field by Berry and Berry (1990). The prime advantages of EHA are that it allows the analyst to control for spatially homogeneous factors that can lead to finding a spurious regional effect, neither of which earlier techniques could do (Berry, 1994a) As Berry and Berry (2007) stated that "the development of models that allow for memory in the policy process from

relationships with covariates to model both the intra- and inter-individual variability. This reconceptualization of a growth model results in a flexible modeling approach which more aptly captures the inherent complexity in the growth or diffusion process (Holt, 2008:112). Within a growth modeling framework, this allows for modeling the relationships between effects that are repeated measures (i.e., measured within-local government) and individual-level effects (i.e., measured at the local level).

Covariates assessed at the local level are termed time-invariant covariates, and analysts easily can incorporate them into the local level equation including form of government, or metropolitan statistical area (Holt, 2008). This dissertation; that is, intends to estimate the diffusion effects on adoption of performance measurement at state, location and measurement occasions (first time, second time, third time or follow up). That is, this dissertation comprises two cohorts of five years, and three successive cross-sectional samples in 1992, 1997, and 2002 are selected on estimating key hypothesized factors of the dependent variables, independent variables, and control variables for adopting performance measures related to local service delivery programs[26]. Two types of multilevel growth models will be estimated in this dissertation: multilevel linear growth model and multilevel growth curve model.

1. Multilevel Linear Growth Model

Analysts can use the basic multilevel linear growth model to assess both initial status and linear change over time. Equation 4.1, equation 4.2 and equation 4.3 describe this model with random coefficients model:

$Y_{tij} = \pi_{0ij} + \pi_{1ij}(\text{Time})_{tij} + e_{tij},$ (Equation 4.1)

Specially, at level 2,

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one year to the next, and thus can overcome the limitations imposed by the assumption of independence over time, is an important item on the research agenda.

[26] To study the developmental effects of years as well as chronological changes, it is also possible to focus on a specific cohort of local governments. A cohort consists of local governments who experience the same diffusion effects for management innovations within a specified period of time. The cohort designs of diffusion for management innovation allow us to trace changes across cohorts in repeated cross-sectional surveys (Singleton & Straits, 2005).

$\pi_{0ij} = \beta_{00j} + \beta_{01j}$ (Feasibility Assessment Capacity)$_{ij}$ + β_{02j}(Evaluation Capacity_Inside Stakeholders)$_{ij}$ + β_{03j}(Evaluation Capacity_Outside Stakeholders)$_{ij}$ + β_{04j}(Implementation Capacity)$_{ij}$ + β_{05j}(Implementation Obstacles)$_{ij}$ + β_{06j}(Council-Manager Government)ij + β_{07j}(Metropolitan Statistical Area)$_{ij}$ + β_{08j}(Council-Manager Government × Year)$_{ij}$ +$\gamma_{0ij,}$

$\pi_{1ij} = \beta_{10j} + \beta_{11j}$ (Feasibility Assessment Capacity)ij + β_{12j}(Evaluation Capacity_Inside Stakeholders)ij + β_{13j}(Evaluation Capacity_Outside Stakeholders)ij + β_{14j}(Implementation Capacity)ij + β_{15j}(Implementation Obstacles)ij + β_{16j}(Council-Manager Government)ij + β_{17j}(Metropolitan Statistical Area)ij + β_{18j}(Council-Manager Government × Year)ij + $\gamma_{1ij,}$

(Equation 4.2)

and, at level 3,

$\beta_{00j} = \gamma_{000} + \gamma_{001}$(Republican Governor) + γ_{002}(State Populations) + γ_{003}(Divided Government) + γ_{004}(State Reinventions) + γ_{005}(State Fiscal Health) + γ_{006}(State Law) + $\mu_{00j,}$

$\beta_{10j} = \gamma_{100} + \gamma_{101}$(Republican Governor) + γ_{102}(State Populations) + γ_{103}(Divided Government) + γ_{104}(State Reinventions) + γ_{105}(State Fiscal Health) + γ_{106}(State Law) +$\mu_{10j,}$

(Equation 4.3)

for $_i$ = 1, …n subjects across t=1,…, 3. The growth parameters, $\pi 0 í$ and $\pi 1 í$, represent the intercept and linear rate of change, respectively, for local government i, and eti is the within-person residual not accounted for by the specified growth parameters. If time 1 is the initial time point assessed in the data, then the intercept represents the initial value on the dependent variable. The level-one equation (see equation 4.1) is the individual growth model and specifically describes the outcome at time 1, the intercept and the rate of change for local government $_i$, and random fluctuations around the linear growth trajectory. The level-two equations (see equation 4.2) describe the between-local

government variability in the growth parameters: the intercepts, π_{0i}, and the linear slopes, π_{1i}. The level-two residuals, γ_{0i} and γ_{1i}, represent the random, between-local government differences in the growth parameters, γ_{1i}, represent the random, between-local government differences in the growth parameters, π_{0i} and π_{1i}. The level-two residuals, γ_{0i} and γ_{1i}, represent the random, between-local government difference in the growth parameters, π_{0i} and π_{1i} respectively; and the fixed effects in this model, β_{00} and β_{10}, represent the average intercept and the average rate of growth, respectively. The level-two equations allow us to model the variability in the growth parameters across local governments. The level-three equations (see equation 4.3) describe the between-state government variability in the growth parameters. The level-three equations allow us to model the variability in the growth parameters across state governments.

2. Multilevel Growth Curve Model

Although a linear model of change is appropriate for many growth scenarios, there are instances in which the linear model is not the best fit, and the analyst should examine other alternatives. Because the adoption of management innovation may be increasing or decreasing over the course of the research, but in a curvilinear way, a model with quadratic growth can be considered in our research. In a quadratic growth model change, the sample responses are no longer constant (as in the linear trend model) throughout the duration of this research. Instead, the rate of change in the sample response depends upon whether the focus is on change that occurs early or later in the study. As a result, the rate of change must be expressed in terms of two parameters- time, and time[2] (Fitzmaurice et al., 2004:144-145)[27]. We introduce the multilevel growth curve model to explore fully the potential variations for the diffusion of local management innovation within and between state and local levels. To analyze the "diffusion" being characteristic of space and time, the multilevel models with growth curve include the 1st level of time level, the

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[27] Consider the situation in which subjects grow in a linear trajectory but then growth slows and the rate of change lessens (i.e., decelerates) or, alternatively, the growth increases (i.e., accelerates) over time. As this description illustrates, more complex growth curves may involve changes in the growth rate. Alternatively, the change in growth rate may be abrupt, and thus represent separate phases of growth. The addition of terms that include higher-order time variables (e.g., time-squared, time cubed) can be used to account for changes in growth rates. A quadratic growth curve includes the square of the time variable, and the corresponding coefficient represents the degree of acceleration or deceleration in growth that occurs over time; that is, whether or not the curve is tapering off (decelerating) or rapidly increasing (accelerating) as the time variable increases (Holt, 2008:119).

2 nd level of local level, and the 3rd level of state level. As expected, the diffusion of local management innovation may not only be rooted in time growth rates[28], but also be embedded in multilevel diffusion.

This dissertation includes two random slopes of time, and time^2 to allow local governments to differ in their overall rate of growth. This dissertation also considers an explanatory model that allows estimation of the separate effects of contract management capacity (feasibility capacity, implementation capacity, evaluation capacity_internal stakeholders, evaluation capacity_external stakeholders), implementation obstacles, state politics, state law, state fiscal health and state reinventions, as well as state control variables (state population, the Republican governor) and local control variables (council-manager form, metropolitan statistical areas) to explain local management innovation nested in state governments. Then a Hierarchical Generalized Linear Model (HGLM) and Hierarchical Linear Model (HLM) are employed to estimate the effect of the independent variables on the likelihood of investments in the different phases of feasibility assessment ability, evaluation capacity_inside stakeholders, evaluation capacity_outside stakeholders, implementation capacity, and implementation obstacles, as well as the control variables of council-manager form, metropolitan statistical areas, and implementation obstacles, as well as state reinventions, state politics, state law and state fiscal health. Equation 4.4 describes the quadratic growth model[29]:

$$Y_{tí} = \pi_{0i} + \pi_{1i}(Time)_{tí} + \pi_{2i}(Time)^2_{tí} + e_{tí} \qquad (Equation\ 4.4)$$

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[28] Hierarchical linear models have proven to be a very useful general framework for fitting theoretical models of growth curves in continuous variables (Collins, 2006).

[29] When the dependent variable is dichotomous, let Yij be the number of adopting performance measure in m_{ij} trials and let ψij be the probability of adopting performance on each local economic development program. Then we write

$Yij|\psi ij \sim B(mij, \psi ij)$

To denote that Yij has a binomial distribution with i local government nested in state government j and probability of adopting performance measure (1=Yes, 0=No) per local economic development program as ψij. Several link functions are possible when the level-1 sampling model is binomial. Though perhaps the most common and convenient is the logit link, that is, $\eta_{ij} = \log(\dfrac{\varphi_{ij}}{1-\varphi_{ij}})$, where$\eta_{ij}$ is the log of the odds of adopting management innovation (Yes=1, No=0).

Specially, at level2,

$$\pi_{0ij} = \beta_{00j} + \beta_{01j}(\text{Feasibility Assessment Capacity})_{ij} + \beta_{02j}(\text{Evaluation Capacity\_Inside Stakeholders})_{ij} + \beta_{03j}(\text{Evaluation Capacity\_Outside Stakeholders})_{ij} + \beta_{04j}(\text{Implementation Capacity})_{ij} + \beta_{05j}(\text{Implementation Obstacles})_{ij} + \beta_{06j}(\text{Council-Manager Government})_{ij} + \beta_{07j}(\text{Metropolitan Statistical Area})_{ij} + \beta_{08j}(\text{Council-Manager Government} \times \text{Year})_{ij} + \gamma_{0ij},$$

$$\pi_{1ij} = \beta_{10j} + \beta_{11j}(\text{Feasibility Assessment Capacity})_{ij} + \beta_{12j}(\text{Evaluation Capacity\_Inside Stakeholders})_{ij} + \beta_{13j}(\text{Evaluation Capacity\_Outside Stakeholders})_{ij} + \beta_{14j}(\text{Implementation Capacity})_{ij} + \beta_{15j}(\text{Implementation Obstacles})_{ij} + \beta_{16j}(\text{Council-Manager Government})_{ij} + \beta_{17j}(\text{Metropolitan Statistical Area})_{ij} + \beta_{18j}(\text{Council-Manager Government} \times \text{Year})_{ij} + \gamma_{1ij},$$

$$\pi_{2ij} = \beta_{20j} + \beta_{21j}(\text{Feasibility Assessment Capacity})_{ij} + \beta_{22j}(\text{Evaluation Capacity\_Inside Stakeholders})_{ij} + \beta_{23j}(\text{Evaluation Capacity\_Outside Stakeholders})_{ij} + \beta_{24j}(\text{Implementation Capacity})_{ij} + \beta_{25j}(\text{Implementation Obstacles})_{ij} + \beta_{26j}(\text{Council-Manager Government})_{ij} + \beta_{27j}(\text{Metropolitan Statistical Area})_{ij} + \beta_{28j}(\text{Council-Manager Government} \times \text{Year})_{ij} + \gamma_{2ij},$$

(Equation 4.5)

and, at level 3,

$$\beta_{00j} = \gamma_{000} + \gamma_{001}(\text{Republican Governor}) + \gamma_{002}(\text{State Populations}) + \gamma_{003}(\text{Divided Government}) + \gamma_{004}(\text{State Reinventions}) + \gamma_{005}(\text{State Fiscal Health}) + \gamma_{006}(\text{State Law}) + \mu_{00j},$$

$$\beta_{10j} = \gamma_{100} + \gamma_{101}(\text{Republican Governor}) + \gamma_{102}(\text{State Populations}) + \gamma_{103}(\text{Divided Government}) + \gamma_{104}(\text{State Reinventions}) + \gamma_{105}(\text{State Fiscal Health}) + \gamma_{106}(\text{State Law}) + \mu_{10j},$$

$\beta_{20j} = \gamma_{200} + \gamma_{201}$(Republican Governor) $+ \gamma_{202}$(State Populations) $+ \gamma_{203}$(Divided Government) $+ \gamma_{204}$(State Reinventions) $+ \gamma_{205}$(State Fiscal Health) $+ \gamma_{206}$(State Law) $+\mu_{20j}$.

(Equation 4.6)

The parameters estimation are based on principles and methods of maximum likelihood and thus involve special iterative methods. This approach yields parameter estimates that "maximize the probability of obtaining the observed set of data." Maximum likelihood estimation techniques provide estimates for the values of the population parameters that maximize the probability of obtaining the observed data (Singer & Willett, 2003). A likelihood function "describes the probability of observing the sample data as a function of the model's unknown parameters" The parameter estimates are those estimates that maximize the likelihood function. When we use maximum likelihood (ML) to estimate the parameters of the model, the estimation also provides the likelihood, which easily can be transformed into a deviance statistic (Snijders & Bosker, 1999).

4.5.5 Intraclass Correlations

Via the model variance provided by the multilevel model, we can get more information on intraclass correlation- state level and local level. The intraclass correlation is the proportion of the total variance that occurs between observations within a level of group clustering (also called a cluster effect) (Baumler et al. 2003; Raudenbush & Bryk, 2002:36). The intraclass correlation expresses the strength of the positive correlation between the responses of local governments (level 1) within the same state government (level 2). That is, intraclass correlation is a measure of agreement of local governments within the same state of local governments (Acock, 2006:207); for example, if we want to know how much similarity of the diffusion of management innovation exists in the local sample governments nested in the State of Florida, the key information comes from intraclass correlations. Then this dissertation defines two intraclass correlations for the latent responses; one for correlations of observations for the same state but different local governments over time (Rabe-Hesketh & Skribdal, 2005:252,261).

$\rho(\text{State}) \equiv$

$$\frac{(State \quad Level \quad Variance)}{(Local \quad Level \quad Variance) \quad + \quad (State \quad Level \quad Variance) \quad + \quad (Residual \quad Variance)}$$

. Whereas for the same local government and then obviously the same state at three different time.

$\rho(\text{Local}) \equiv$

$$\frac{(Local \quad Level \quad Variance)}{(Local \quad Level \quad Variance) \quad + \quad (State \quad Level \quad Variance) \quad + \quad (Residual \quad Variance)}$$

4.5.6 Model Fit

Model selection is a crucial part of the multilevel modeling process. The researcher's goal is to arrive at a model that describes the observed data to a satisfactory extent but without unnecessary complications (Snijders & Bosker, 1999:91). The most common methods of model selection include hypothesis testing approaches and "information criteria," or index comparison, approaches. Typically, analysts test the quadratic model with a likelihood ratio test to determine if it provides a better fit than the linear model. This is done by constructing a hypothesis test comparing the restricted model (e.g., linear model) to the more complex alternative model (e.g., quadratic model). The likelihood ratio test compares deviances and df for these two nested models using the χ^2 difference test. A statistically significant χ^2 test indicates that the more complex model is warranted (Holt, 2008:119).

When models are nested, the difference of the deviances follows a chi-square distribution with degrees of freedom determined by the difference in number of estimated parameters. The deviance compares the log-likelihood of the specified model to the log-likelihood of a saturated model that fits the sample data perfectly (Singer & Willett, 2003:117). The "deviance" of a model often is referred to as-2 times the log-likelihood (-2LL) and, in a sense, represents how poorly a model fits the data (O'Connell et al., 2008:207) [30]. Deviance statistics cannot be interpreted directly since deviance is a

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[30] The deviance of the simpler model (D1) minus the deviance of the more complex model (D2) provides the change in deviance ($\Delta D = D1-D2$). The simpler model always will have at least as high a deviance as the more complex model, and generally the deviance of the more complex model will be lower than that

function of sample size as well as the fit of the model. If two models are hierarchically nested, use the same data set, and use full maximum likelihood estimation techniques to estimate the parameters, the deviance statistics of two models can be compared directly (O'Connell et al., 2008:247)[31].

Using AIC and BIC values, we favor the model with the smaller AIC values. There are several advantages to using the AIC or the BIC rather than relying upon deviance statistics and chi-square difference tests to evaluate the goodness of fit a multilevel model. First, the AIC and BIC allow the comparison of non-nested models. As long as the sample remains constant, AIC and BIC allow the comparison of competing models, whether or nor they are hierarchically nested. Further, selection indices such as AIC and BIC quantify the degree to which the given model represents an improvement over comparison models.

4.5.7 Statistical Package

Several statistical package can be used to analyze the multilevel models such as MLwiN, HLM, SAS, S-PLUS, R, SPSS, Mplus, and STATA. This dissertation uses STATA 10.0 as our main analytical statistical package. As Roberts and McLead (2008) said STATA is a very powerful package that encompasses a variety of tools for data analysis. The routines created to run a multilevel analysis are relatively powerful. Although there is more than just one routine available to run multilevel models, the syntax required for each command is slightly different such as xtmixed, gllam, or xtmelogit (p. 262). Then I use the instructions provided by Rabe-Hesketh and Skrondal (2008) reference book to run three-level logistic random-coefficient models with Stata 10.

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of the simpler model. If the model with the larger number of parameters fails to reduce the deviance by a substantial amount, the more parsimonious model is retained. Therefore, when the change in deviance (ΔD) exceeds the critical value of chi-square with (p1-p2) degrees of freedom, the difference in the deviances is statistically significant. In this situation, we favor the more complex model. However, if the more complex model does not result statistically significant reduction in the deviance statistic, we favor the more parsimonious model (O'Connell et al., 2008:248).

[31] Two models are nested when one model is a subset of the other (Kline, 1998). In other words, in nested models, "the more complex model includes all of the parameters of the simpler model plus one or more additional parameters" (Raudenbush, Bryk, Cheong, & Congdon, 2000, p.80-81).

CHAPTER FIVE

FINDINGS AND DISCUSSIONS

This chapter will summarize the findings with descriptive statistics, and ANOVA repeated measures for all samples, and provide the statistical results using the four models of total contracting, , private contracting, and nonprofit contracting are addressed with multilevel linear growth model, multilevel growth curve model, model fit, and intraclass correlations.

5.1 Descriptive Statistics

Table 5.1 indicates the descriptive statistics of the continuous variables used in this dissertation. It shows that there is no serious normality problem (acceptable skewness and kurtosis), indicating that there may be no potential bias in the analysis; for example, the normal distribution of "feasibility assessment capacity" is 0.53 in skewness and 2.65 in kurtosis. This table also indicates the information of overall-effects, between-effects and within-effects, which summarize the longitudinal descriptive statistical effects in this dissertation. For example, the repeated measures of performance measurement have a mean of 1.36 with a standard error of 1.29 (overall effects), 0.07(between effects), and 1.29(within effect).

Table 5.1: Descriptive Statistics for Repeated Continuous Variables in State and Local Level

Local Level Variable		Mean	Std. Dev.	Min	Max	Observations	Skewness	Kurtosis
Performance Measurement	Overall	1.36	1.29	0	3	N=690	0.11	1.30
	Between		0.07	1.29	1.43	n=230		
	Within		1.29	-0.08	3.07	T=3		
Feasibility Assessment Capacity	Overall	1.63	1.43	0	7	N=690	0.53	2.65
	Between		0.88	0	4.67	n=230		
	Within		1.13	-1.70	4.97	T=3		
Evaluation Capacity_Inside Stakeholder	Overall	3.45	2.49	0	9	N=690	0.15	2.20
	Between		1.68	0	8	n=230		
	Within		1.84	-1.82	9.45	T=3		
Evaluation Capacity_Outside Stakeholder	Overall	1.17	1.22	0	6	N=690	1.07	4.00
	Between		0.8	0	3.33	n=230		
	Within		0.92	-1.16	5.17	T=3		
Implementation Capacity	Overall	1.8	2.14	0	11	N=690	1.23	4.28
	Between		1.38	0	7.67	n=230		
	Within		1.63	-3.20	7.8	T=3		
Implementation Obstacles	Overall	1.54	1.90	0	9	N=690	1.11	3.50
	Between		1.16	0	6	n=230		
	Within		1.51	-3.13	7.54	T=3		
State Level Variable		Mean	Std. Dev.	Min	Max	Observations	Skewness	Kurtosis
State Reinventions	Overall	4.26	1.58	1	7	N=126	0.01	2.23
	Between		1.03	2	6.67	n=42		
	Within		1.21	1.26	7.26	T=3		
State Populations	Overall	6121476	6148773	635000	33872000	N=126	1.18	3.73
	Between		2697033	5846833	6385952	n=42		
	Within		6144797	377523.8	3360752	T=3		
State Fiscal Health	Overall	-5297512	8651970	-6.67e+07	6018822	N=126	-1.66	6.55
	Between		2638400	-8335850	-3584622	n=42		
	Within		8377272	-6.36e+07	4305933	T=3		

5.2 ANOVA Repeated Measures

The test for the time variable provides the test of whether the three scores for each local government differ significantly. Table 5.2 shows the information on the effect of time. The adoption rates for contract compliance differ significantly over the three times $(F_{(2,458)} =3.23,\ p<0.05)$. A local government has a high adoption rate for contract compliance in 1997 (mean=0.522) more than that in 2003 (mean=0.491) and in 1992 (mean=0.413). Similarly, the scores for feasibility assessment capacity differ significantly across the three time $(F_{(2,458)} =13.23,\ p<0.001)$. However, the changes of adopting a citizen satisfaction and a cost measure did not demonstrate significant effects over time. Although there is an increase of adopting a citizen satisfaction measure and a cost measure from 1992 to 1997, these increases did not continue from 1997 to 2003.

In addition, a local government has a high score of feasibility assessment capacity in 1992 (mean=1.88) more than those in 1997 (mean=1.739) and in 2003 (mean=1.270). The scores for evaluation capacity_inside stakeholder differ significantly over the three times $(F_{(2,458)} =11.54,\ p<0.001)$. A local government has a high score of evaluation capacity_inside stakeholder in 1997 (mean=3.987) more than those in 1992 (mean=3.348) and 2003 (mean=3.017). The scores for evaluation capacity_inside stakeholder differ significantly across the three times $(F_{(2,458)} =11.54,\ p<0.001)$. A local government has a high score of evaluation capacity_inside stakeholder in 1997 (mean=3.987) more than that in 1992 (mean=3.348) and 2003 (mean=3.017). The scores for evaluation capacity-outside stakeholder differ significantly across the three times $(F_{(2,458)} =8.11,\ p<0.001)$. A local government has a high score of evaluation capacity_outside stakeholder in 1997 (mean=1.4) more than that in 1992 (mean=1.126) and 2003 (mean=0.991). In terms of implementation obstacles, the scores differ significantly across the three times $(F_{(2,458)} =9.28,\ p<0.001)$. A local government has a high score in 1992 (mean=1.957) more than that in 2003 (mean=1.357) and 1997 (mean=1.296).

Table 5.2: ANOVA Repeated Measures Testing Time Effects on Performance Measurement and Local Variables

Variable	Mean (1992)	Mean (1997)	Mean (2003)	F-Test (Time Variable)
Citizen satisfaction	0.352	0.378	0.370	0.19
Cost	0.526	0.535	0.487	0.62
Contract compliance	0.413	0.522	0.491	3.23**
Feasibility Assessment Capacity	1.88	1.739	1.270	13.23****
Evaluation Capacity_Inside Stakeholder	3.348	3.987	3.017	11.54****
Evaluation Capacity_Outside Stakeholder	1.126	1.4	0.991	8.11****
Implementation Capacity	1.796	1.996	1.6	2.28
Implementation Obstacles	1.957	1.296	1.357	9.28****

$*p < 0.1, **p < 0.05, ***p < 0.01, ****p < 0.001$

In terms of state population, the scores differ significantly across the three times as shown in table 5.3 ($F_{(2,82)}$ =990.15, p<0.001). The state population had increased over time, but state fiscal health increasingly had worsened. State fiscal health was significantly worse in 2002 and those in 1992 and 1997 ($F_{(2,82)}$ =13.78, p<0.001). But time effects do not significantly influence state reinventions. This finding also suggests that there is no significant differences in the data of ASAP (American State Administrator's Project) and Government Performance Project (GPP) that we discussed above chapter four.

The empirical results demonstrate that time effects play an important role. The cross-sectional data provide one-time effect on outcome variable rather than long changes. This may get the wrong answers and then do not understand the real facts behind the research. However, repeated measures ANOVA place severe constraints on the longitudinal data. The two most problematic constraints in repeated measures analyses are that all individuals must have an equal number of data points and that the data collection schedule needs to be time-structured, such that the planned schedule of data collection must be at the same times for all individuals. By default, these traditional longitudinal

analyses use listwise deletion to discard participants without full data for all time points. This often results in a much-reduced data set that does not accurately represent the originally-sampled population and that is likely to be biased (Holt, 2008:112).

Table 5.3: ANOVA Repeated Measures Testing Time Effects on State Variables

Variable	Mean (1992)	Mean (1997)	Mean (2003)	F-Test (Time Variable)
State Reinventions	4.3181	4.1788	4.2857	1.37
State Populations	5846833	6131643	6385952	990.15****
State Fiscal Health	-3972063	-3584622	-8335850	13.78****

$*p<0.1, **p<0.05, ***p<0.01, ****p<0.001$

5.3 Total Service Delivery Contracting

5.3.1 Citizen Satisfaction

For multilevel growth models, the interpretation of the linear coefficient changes somewhat differ from the nonlinear growth curve model. In the linear growth model, we can directly explain time effects; for example, the adopting rates of the citizen satisfaction have changed by a coefficient of 0.22 over time, as shown in table 5.4. However, in the quadratic change model, the coefficient associated with time, does not represent a constant rate of change. Instead, it represents the instantaneous rate of change at one specific moment, when time was at initiate time (Singer & Willett, 2003:216; Raudenbush & Bryk, 2002:169)[32]. That is, it had an instantaneous rate of change of -0.35 (coefficient) at initial status and a curvature of -2.09(intercept). Because the coefficient of time was negative, the trajectory initially raised, with true status having the intention of decreasing -0.35 in the following unit of time. But because the coefficient of $time^2$ was 0.27, this decrease did not persist. With the passage of time, the growth trajectories of adopting a citizen satisfaction measure at initiate status decreased and then

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[32] In the quadratic model, it is not meaningful or appropriate to test the coefficient for the linear time trend. Instead, a test for quadratic trend can be performed by testing the null hypothesis that the coefficient of time quadratic term. By the same token, test of lower-order time (e.g., linear trend) are not meaningful in the presence of higher-order time (e.g, quadratic trend)(Fitzmaurice et al., 2004:145-146; Hedeker & Gibbons, 2006:135).

subsequently increased. However, this time effect did not significantly influence the adoptions of citizen satisfaction, cost, contract compliance, and performance measurement either in the linear growth model or growth curve model.

Results of the model in terms of estimated logits and corresponding odds ratios are provided in table 5.4. Significance testing for fixed and random effects corresponds to the standard HLM; thus, the factor of evaluation_inside stakeholder capacity is positively significantly related to the adoption rate of a citizen satisfaction measure both in the linear growth model and in the growth curve model. For each additional evaluation_inside stakeholder capacity (H3), the estimated odds of adopting a citizen satisfaction measure for these local governments increases by a factor of 1.20 in the linear growth model and by a factor of 1.21 in the growth curve model. Thus, there is a 20% and a 21% increase in the odds of adopting a citizen satisfaction measure as the number of evaluation_inside stakeholders capacity increases by one unit (i.e., 100% *(OR-1) = 21%). Similarly, implementation capacity (H2) is positively related with the adopting of a citizen satisfaction measure in the linear growth model and in the growth curve model. The variable of evaluation_outside stakeholders capacity (H4) has a positive influence on adopting a citizen satisfaction measure in the growth curve model. Reasonably, the evaluation of outside stakeholders capacity influenced the adoption of a citizen satisfaction measure. However, the negative effect for state fiscal health (H9), -1.21, indicates that as the amount of state fiscal health increase by one, the estimated logit of adopting a citizen satisfaction measure decreases by a factor of about 1 in the linear growth model, holding all other variables constant.

5.3.2 Cost

Table 5.4 shows that the capacity of feasibility assessment capacity (H1), implementation capacity (H2), and evaluation_inside stakeholders capacity (H3) positively significantly influence the adoption of a cost measure. This indeed corroborates that the internal working of local governments will significantly depend on a cost measure. However, the evaluation of outside stakeholder (H4) does not positively influence the adoption of a cost measure both in the linear growth model and in the growth curve model. This is because the governments always adopt a cost measure to assure the success of a policy or a program. For a state level, the expected odds of

adopting a cost measure are 1.73 times (linear growth) and 1.74 times (growth curve) larger for state with a divided government than for a state with a unified government (H6), holding all other variables constant. However, for one unit increase in state reinventions (H7), the odds of adopting a cost measure decrease by a factor of 0.87 in the linear growth model and 0.85 in the growth curve model.

5.3.3 Contract Compliance

The index variables of implementation capacity (H2) and evaluation_inside stakeholder capacity (H3) have a positive impact on adopting a contract compliance in both the linear growth model and the growth curve model. For example, with a one unit increase in implementation capacity, the odds of adopting a contract compliance measure increase by a factor of 1.47 times (linear growth) and 1.47 times (growth curve), holding all other variables constant. The odds of adopting a contract compliance measure are 1.63 times (linear growth) and 1.63 times (growth curve) larger for state divided governments (H6) than state unified governments, holding other variables constant. In addition, the variable of state reinventions (H7) is negatively related with adopting a contract compliance in the linear growth model and in the growth curve model shown in table 5.4. The odds of having more positive inclinations toward adopting a contract compliance measure are 0.62 time smaller for the Republican State Governor than the Non-Republican State Governor, holding other variables constant.

5.3.4 Performance Measurement

The variables of implementation capacity (H2) and evaluation_inside stakeholder capacity (H3) are also positively related with adopting performance measurement in the linear growth model and the growth curve model shown in table 5.4. As well, the variable of feasibility assessment capacity (H1) also has a positively significant influence on performance measurement in the growth curve model. Therefore, contract management capacity positively influences the adoption of performance measurement. One of the possible reasons is that local governments depend one their management capacity to evaluate contract performances.

In the state level, state divided governments (H6) significantly tended to use performance measurement more than do state unified governments. This indicates that the inter-monitoring between state administration and state legislature may be associated

with stimulating local governments' adoption of performance measurement. However, the more the degree of reinventing state governments, the less the possibility of adopting performance measurement (H7). Although most state governments take positive attitudes toward government's reinventions, the state practices of reinventions do not strongly influence the adoption of local performance measurement.

Table 5.4: HGLM and HLM Explaining the Adoptions of Performance measurement in Terms of Local Service Delivery Contracting Nested in State Levels Over Time (Total Service Delivery Contracting Samples)

| | Citizen Satisfaction | | | | Cost | | | | Contract compliance | | | | Performance Measurement | |
| | Linear Growth | | Growth Curve | | Linear Growth | | Growth Curve | | Linear Growth | | Growth Curve | | Linear Growth | Growth Curve |
Fixed Effects	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Coef.
Time	0.22 (0.29)	1.25	-0.35 (0.56)	0.70	0.22 (0.28)	1.25	-0.36 (0.55)	0.70	0.29 (0.29)	1.34	0.33 (0.56)	1.39	0.05 (0.04)	-0.02 (0.09)
Time ^{2}			0.27 (0.23)	1.31			0.27 (0.23)	1.32			-0.02 (0.23)	0.98		0.03 (0.03)
Local Level														
Feasibility Assessment (H1)	0.01 (0.09)	1.02	0.01 (0.09)	1.01	0.19** (0.09)	1.22	0.19** (0.09)	1.21	0.1 (0.09)	1.10	0.1 (0.09)	1.10	0.02 (0.01)	0.02* (0.01)
Implementation (H2)	0.18*** (0.05)	1.19	0.18*** (0.05)	1.2	0.39**** (0.07)	1.47	0.39**** (0.07)	1.48	0.38**** (0.06)	1.47	0.38**** (0.06)	1.47	0.06**** (0.01)	0.06**** (0.01)
Evaluation _Inside Stakeholder (H3)	0.18**** (0.05)	1.20	0.19**** (0.05)	1.21	0.23**** (0.05)	1.25	0.23**** (0.05)	1.26	0.23**** (0.05)	1.26	0.23**** (0.05)	1.26	0.04**** (0.01)	0.04**** (0.01)
Evaluation_Outside Stakeholder (H4)	0.14 (0.09)	1.15	0.15* (0.09)	1.17	-0.22** (0.10)	0.80	-0.21** (0.10)	0.81	-0.05 (0.10)	0.95	-0.06 (0.10)	0.95	-0.01 (0.01)	-0.01 (0.01)
Implementation Obstacles (H5)	0.07 (0.05)	1.08	0.06 (0.05)	1.07	0.01 (0.06)	1.01	1.32 (0.06)	1.00	0.09 (0.06)	1.09	0.09 (0.06)	1.09	0.01 (0.01)	0.01 (0.01)
Council-Manager	-0.01 (0.41)	0.99	-0.04 (0.40)	0.96	-0.28 (0.38)	0.76	-0.28 (0.38)	0.75	-0.52 (0.39)	0.59	-0.52 (0.39)	0.6	-0.05 (0.05)	-0.05 (0.06)
Council-Manager × Year	-0.25 (0.29)	0.78	-0.24 (0.30)	0.79	0.11 (0.29)	1.11	0.12 (0.29)	1.12	0.38 (0.30)	1.46	0.38 (0.30)	1.46	0.02 (0.04)	0.02 (0.05)
Metropolitan Statistical Areas	0.13 (0.25)	1.14	0.14 (0.25)	1.15	0.28 (0.24)	1.32	0.28 (0.24)	1.32	0.29 (0.25)	1.34	0.29 (0.25)	1.34	0.04 (0.04)	0.05 (0.04)
State Level														
Divided Government (H6)	0.17 (0.22)	1.19	0.17 (0.22)	1.12	0.55** (0.23)	1.73	0.55** (0.23)	1.74	0.49** (0.23)	1.63	0.49* (0.23)	1.63	0.07* (0.04)	0.07* (0.04)
State Reinventions (H7)	-0.04 (0.06)	0.97	-0.05 (0.06)	0.95	-0.14** (0.06)	0.87	-0.16*** (0.06)	0.85	-0.18*** (0.06)	0.83	-0.18*** (0.06)	0.84	-0.03*** (0.01)	-0.03*** (0.01)
State Law (H8)	0.20 (0.25)	1.23	0.32 (0.27)	1.28	-0.40 (0.25)	0.67	-0.2968 (0.2633)	0.73	-0.25 (0.25)	0.78	-0.26 (0.27)	0.77	-0.04 (0.04)	-0.04 (0.05)
State Fiscal Health (H9)	-1.21* (7.32)	1	-9.44 (7.66)	1	6.12 (7.59)	1	9.02 (7.99)	1	-7.77 (7.52)	1	-9.66 (7.88)	1	-1.06 (1.67)	-7.38 (2.31)
State Populations	-5.01 (1.33)	1	-3.06 (1.35)	1	3.05 (1.37)	1	5.19 (1.38)	1	-2.48 (1.36)	1	-3.84 (1.37)	1	-2.43 (2.40)	3.21 (2.73)
Republican Governor	-0.08 (0.21)	0.99	-0.01 (0.21)	0.99	-0.04 (0.21)	0.97	-0.03 (0.21)	0.97	-0.48** (0.22)	0.62	-0.48* (0.22)	0.62	-0.04 (0.04)	-0.04 (0.04)
Constant	-2.20		-2.09		-1.17		-1.0653		-1.33		-1.336		0.23	0.24
State Level														
Variance(Time)	1.51(1.01)		8.51(2.43)		1.24(9.38)		1.39(3.18)		1.08(7.37)		1.14(7.56)		0.001	0.002
Variance(Time2)			8.39(7.48)				5.07(3.29)				1.46(1.43)			0.001
Variance(constant)	1.37(4.06)		5.36(8.00)		1.20(1.28)		6.35(9.32)		5.64(3.60)		5.07(3.41)		0.002	0.001
Local Level														
Variance(Time)	7.97(7.21)		2.71(3.80)		0.05(0.13)		0.05(0.13)		7.33(1.78)		6.16(1.63)		0.01	0.01
Variance(Time2)			1.57(1.64)				2.82(7.21)				4.95(2.53)			0.003
Variance(constant)	0.17(0.2061)		0.18(0.21)		2.77(4.04)		4.77(1.70)		2.43(8.21)		3.36(3.07)		0.01	0.02
Residual													0.11	0.1
Wald Chi2	79.43****		79.84****		114.41****		114.39****		143.66****		143.69****		247.71****	243.01****
State Sample Size	42		42		42		42		42		42		42	42
Local Sample Size	230		230		230		230		230		230		230	230
Fit Measures														
Df	20		23		20		23		20		23		16	17
Deviance	765.24		763.81		726.31		724.83		702.58		702.57		549.30	569.79
AIC	805.24		809.81		766.31		770.83		742.58		748.57		581.30	603.79
BIC	895.27		913.34		856.33		874.36		832.60		852.10		653.32	680.10

*p＜0.1, **p＜0.05, ***p＜0.01, ****p＜0.001

() standard error

5.3.5 Model Fit in Total Service Delivery Contracting

To assess the model fit, we examine the effects of adding time^2 parameter on the change in deviance, the AIC and the BIC. For the citizen satisfaction model shown in table 5.5, the deviance of the linear growth model is 765.24, and the deviance of the growth curve model is 763.81. We compare this to the critical value of χ^2 with three degrees of freedom which is 1.43, P＞0.05. The growth curve model does not result in statistically significant reductions in the deviance statistic; then we favor the linear growth model. Using AIC, we conclude that the model that does not include time^2 is superior to the model that includes time. Finally, we compare the BIC values for the two models. The BIC for linear model is also smaller than the BIC for growth curve model. In addition, the change in BIC (e.g., 18.07) is greater than 10. Therefore, according to Raftery's (1995) rules of thumb, the difference in BIC provides very strong evidence for favoring the linear growth model over the growth curve model. So we again conclude that linear model provides a better fit to the data than does the growth model.

For cost and contract compliance models, the deviance statistics and the information criteria of AIC and BIC also inform that the linear growth model provide a better fit than the growth curve model. The combined model (performance measurement) shows when the change of 20.49 in deviance (ΔD) exceeds the critical value of chi-square (19.51) with 3 degrees of freedom, the difference in the deviances is statistically significant (P＜0.001)[33]. In this situation, we favor the linear growth model. The AIC and BIC also address that the linear growth model is better that the growth curve model for performance measurement model[34].

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[33] Linear growth model and growth curve model are hierarchical so that chi-square difference test can be applied to assess their relative fit. Linear growth model: χ^2 = 549.30, df=19. Growth curve model: χ^2 = 569.79, df=22. Chi-square difference: χ^2_{diff} = 20.49, df=3, p＜0.001. Chi-square difference test suggests that the growth curve is significantly worse than the linear growth model. Therefore, the linear growth model is preferred.

[34] The AIC, BIC, and chi-square difference test may lead to conflicting conclusions. When these results diverge, the research must male a difficult decision about whether he or she favors model parsimony or model complexity. In these situation, it is very important for the researchers to use their substantive knowledge and judgment to reach a conclusion about the "best model"(McCoach & Black, 2008: 260).

Table 5.5: Summary of Model Fit of the Linear Growth Models and Growth Curve Models (Total Service Delivery Contracting)

	a. Deviance	Parameter	Deviance	Deviance Test		
				Chi-square	df	p-value
Citizen Satisfaction	Linear Growth	19	765.24	1.43	3	P>0.05
	Growth Curve	22	763.81			
Cost	Linear Growth	19	726.31	1.48	3	P>0.05
	Growth Curve	22	724.83			
Contract compliance	Linear Growth	19	702.58	0.01	3	P>0.05
	Growth Curve	22	702.57			
Performance Measurement	Linear Growth	19	549.30	19.51	3	P<0.001
	Growth Curve	22	569.79			
	b. AIC	df	Value	Critical Value		
Citizen Satisfaction	Linear Growth	20	765.23	The smaller, the better.		
	Growth Curve	23	809.81			
Cost	Linear Growth	20	766.31	The smaller, the better.		
	Growth Curve	23	770.83			
Contract compliance	Linear Growth	20	742.58	The smaller, the better.		
	Growth Curve	23	748.57			
Performance Measurement	Linear Growth	16	581.30	The smaller, the better.		
	Growth Curve	17	603.79			
	c. BIC	df	Value			
Citizen Satisfaction	Linear Growth	20	895.27	The smaller, the better.		
	Growth Curve	23	913.34			
Cost	Linear Growth	20	856.33	The smaller, the better.		
	Growth Curve	23	874.36			
Contract compliance	Linear Growth	20	832.60	The smaller, the better.		
	Growth Curve	23	852.10			
Performance Measurement	Linear Growth	16	633.32	The smaller, the better.		
	Growth Curve	17	680.10			

We can plot the predicted trajectories together with the observed ones using a trellis graph, a graph containing a separate two-way plot for each local government which adopts performance measurement in terms of total service delivery contracting, including , private contracting, and nonprofit contracting. The graph is shown in figure 5.1, indicating that the model fits reasonably well.
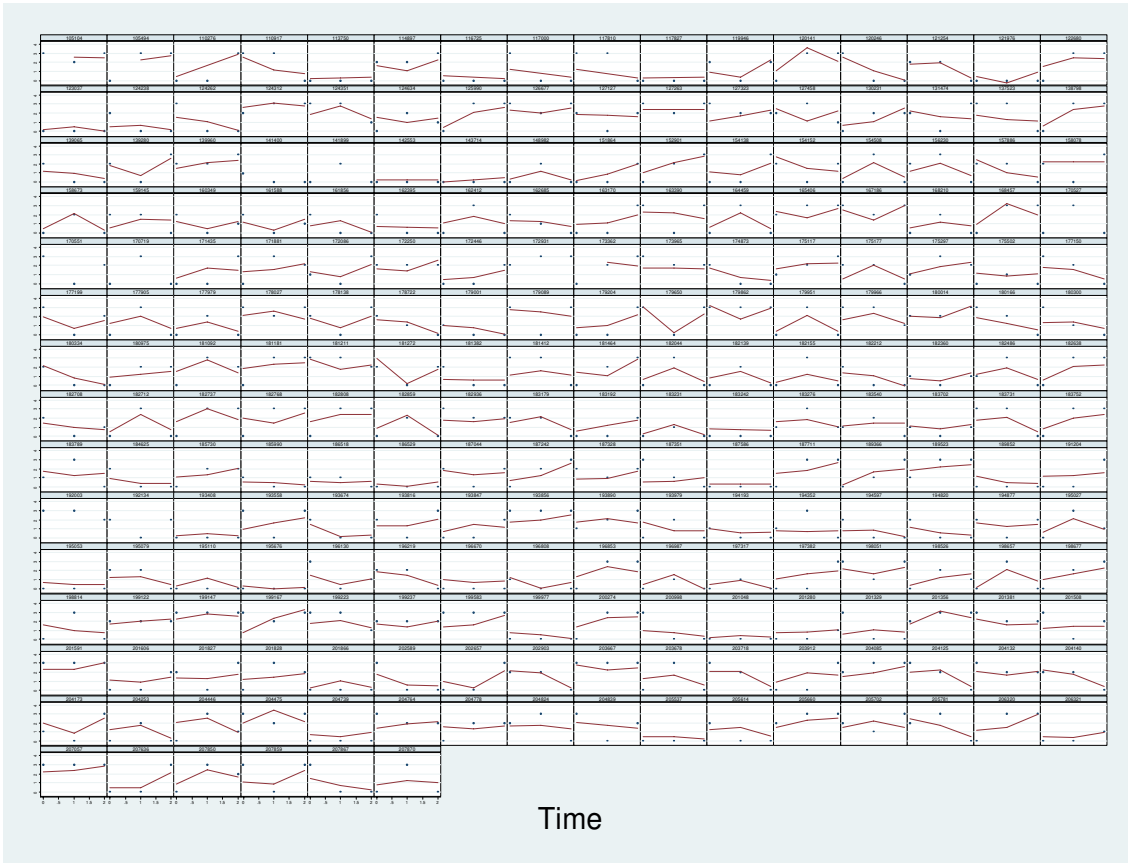
Figure 5.1: Trellis Graph of Observed Responses (Dots) and Fitted Trajectories (Dashed Lines) of Performance Measurement for Total Service Delivery Contracting

5.3.6 Intraclass Correlations in Total Service Delivery Contracting

While the intraclass correlation expresses the strength of the positive correlation between the responses of different local governments within the same state government, for the adoption of the measure of citizen satisfactions, the intraclass correlation for different local governments within the same state is estimated as 88.96% (linear growth model) and 96.75% (growth curve model), suggesting that about 88.96 % and 96.75% of the variance in adopting a citizen satisfaction measure occurs between states. For the same outcome, the intraclass correlation that expresses the strength of the positive correlation between repeated observations of the same local government in the same state is 11.04%(linear growth model) and 3.25%(growth curve model). For the adoption of the cost measure, the intraclass correlation between different local governments within

the same state government is 30.23％ (linear growth model) and 57.10％ (growth curve model). For the repeated observations of the same local government nested in the same state, the intraclass correlation between repeated observations is 69.77％ in the linear growth model and 42.9 ％ in the growth curve model, when local governments adopt a cost measure. For the adoption of the measure of contract compliance, the intraclass correlation between different local governments within the same state government is 69.89％ in the linear growth model and 96.73％ in the growth curve model. For the repeated observations of the same local government nested in the same state, the intraclass correlation between repeated observations is 30.11％ (linear growth model) and 39.86％ (growth curve model). For the performance measurement model, the intraclass correlation between different local governments within the same state government is 1.64％ (linear growth model) and 0.82％ (growth curve model). For the repeated observations of the same local government nested in the same state, the intraclass correlation between repeated observations is 8.2％ (linear growth model) and 16.39％ (growth curve model).

As expected, there is a high degree of intraclass correlation among repeated observations within the same local government nested in the same state. It is often found that in cases where the intraclass correlation between repeated measures is high, the majority of the variation present in the sample occurs at a higher level such as the state level (Goldstein, 1995; Baumler et al., 2003). The empirical findings tell that different local governments nested in the same state across time present the heterogeneity in local management innovation related to local service delivery contracting. The previous researches only focus on local level or state level and ignore the cross-level influences; therefore, their results loss some important information such as state laws, state rules, and the analysis may yield untrustworthy results.

Table 5.6: Intraclass Correlations in Total Service Delivery Contracting

Intraclass Correlation	Citizen Satisfaction		Cost		Contract compliance		Performance Measurement	
	Linear Growth	Growth Curve	Linear Growth	Growth Curve	Linear Growth	Growth Curve	Linear Growth	Growth Curve
Different local government within the same state	88.96%	96.75%	30.23%	57.10%	69.89%	95.73%	1.64%	0.82%
The same local government nested in the same state	11.04%	3.25%	69.77%	42.9%	30.11%	39.86%	8.2%	16.39%

5.3.7 Summary in Total Service Delivery Contracting

From table 5.4, the finding addressed that time effects do not significantly influence the relationship between independent variables and dependent variables. However, contract management capacity plays an important role in adopting performance measurement. As expected, for total contracting samples with , private contracting and nonprofit contracting, the contract management capacity is closely related with the adoption of performance measurement. That is, the capacity of implementation and evaluation_inside stakeholders benefit to the adoption of citizen satisfaction, cost, contract compliance, and performance measures. Internal working mechanisms help to evaluate contract performances.

As well, state factors also positively or adversely influence the adoption of local performance measurement, because of state-local hierarchical relationships. Some state predictors (e.g., state divided government, state reinventions, state governor affiliated party) do significantly influence the adoptions of cost, contract compliance, and performance measures but others weakly influence the adoption of a citizen satisfaction measure (e.g., state fiscal health). These findings are underestimated or overlook by the previous research (e.g, Brown & Potoski, 2003a, 2003b, 2003c)

5.4 Private Contracting

5.4.1 Citizen Satisfaction

In terms of private contracting shown in table 5.7, the passage of time does not significantly the diffusion of adopting a citizen satisfaction measure either in the linear growth model or the growth curve model. Table 5.7 shows that the factor of evaluation_inside stakeholders capacity (H3) is positively significantly related to the adoption rates of a citizen satisfaction measure both in the linear growth model and the growth curve model. The odds of adopting a citizen satisfaction measure for these local governments increases by a factor of about 1.21 in the linear growth model and 1.22 in the growth curve model as evaluation_inside stakeholder capacity increases by one unit. Similarly, implementation capacity is positively related with the adopting of a citizen satisfaction measure in the linear growth model (OR=1.20) and the growth curve model (OR=1.21). The index variable of evaluation_outside stakeholders capacity has a positive influence on adopting a citizen satisfaction measure in both the linear growth model (OR=1.18) and the growth curve model (OR=1.19). The evaluation of outside_stakeholders capacity positively influences the adoption of a citizen satisfaction measure by a factor of 1.18 in the linear growth model and 1.19 in the growth curve model. However, the state predictors such as state divided government, state reinventions, state law and state fiscal health do not produce significant impacts on the adoption of a citizen satisfaction measure in either model, holding all other variables constant.

5.4.2 Cost

In terms of private contracting shown in table 5.7, the estimated odds of adopting a cost measure tends to increase as feasibility assessment capacity (H1), evaluation_inside stakeholder capacity (H3) and implementation capacity (H2) increases by about a factor of 1.20, 1.25 and 1.48 in the linear growth model and in the growth curve model. For the state level, local governments located in state divided government (H6) are 1.74 times (linear growth model) and 1.75 times (growth curve model) greater than local governments located in state unified governments to adopt a cost measure. However, when other variables are held constant, the odds of adopting a cost measure is expected to be lower by a factor of 0.88 in the linear growth model and by a factor of 0.82 in the growth curve model., as state reinventions (H7) increase by one unit.

5.4.3 Contract Compliance

In terms of private contracting shown in table 5.7, the variables of evaluation_inside stakeholder capacity (H3) and implementation capacity (H2) have a positive impact on adopting a contract compliance in both models. For example, for one unit increase in implementation, the odds of adopting a contract compliance measure increase by a factor of 1.51 times (linear growth) and 1.51 times (growth curve), holding all other variables constant. For state predictors, the odds of adopting a contract compliance are 1.82 times in both the linear growth model and growth curve model larger for state divided governments (H6) than for state unified governments, holding other variables constant. In addition, the variable of state reinventions (H7) is negatively related with adopting a contract compliance by a factor of 0.82 in the linear growth model and by a factor of 0.88 in the growth curve model. From table 5.7, the odds of having more a positive inclination toward local adopting a contract compliance are 0.64 times smaller for the Republican State Governor than the Non-Republican State Governor in the linear growth model and in the growth curve model, holding other variables constant.

5.4.4 Performance Measurement

The variables of evaluation_inside stakeholder capacity (H3) and implementation capacity (H2) also are positively related with adopting performance measurement in the linear growth model and the growth curve model shown in table 5.7. At the state level, the state divided government significantly tends to use performance measures more than state non-divided government (H6) in both models. However, the increasing levels of state reinventions are negatively related to the high level of using performance measurement in the linear growth model (H7).

Table 5.7: HGLM and HLM Explaining the Adoptions of Performance measurement in Terms of Local Service Delivery Contracting Nested in State Levels Over Time (Private Contracting)

| | Citizen Satisfaction | | | | Cost | | | | Contract compliance | | | | Performance Measurement | |
| | Linear Growth | | Growth Curve | | Linear Growth | | Growth Curve | | Linear Growth | | Growth Curve | | Linear Growth | Growth Curve |
Fixed Effects	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Coef.
Time	0.06 (0.31)	1.06	-0.33 (0.60)	0.72	0.1 (0.31)	1.10	-0.14 (0.61)	0.87	0.18 (0.32)	1.19	0.14 (0.63)	1.15	0.02 (0.05)	-0.03 (0.09)
Time ^{2}			0.19 (0.24)	1.20			0.11 (0.25)	1.12			0.02 (0.26)	1.02		0.02 (0.04)
Local Level														
Feasibility Assessment (H1)	0.00 (0.09)	1.00	0.001 (0.09)	1.001	0.19* (0.1)	1.20	0.18* (0.1)	1.20	0.004 (0.1)	1.00	0.1 (0.09)	1.00	0.02 (0.01)	0.02 (0.01)
Implementation (H2)	0.19**** (0.06)	1.20	0.19*** (0.06)	1.21	0.39**** (0.07)	1.48	0.39**** (0.07)	1.48	0.41**** (0.07)	1.51	0.41**** (0.07)	1.51	0.06**** (0.01)	0.06**** (0.01)
Evaluation _Inside Stakeholder (H3)	0.19**** (0.05)	1.21	0.20**** (0.05)	1.22	0.22**** (0.06)	1.25	0.23**** (0.06)	1.25	0.25**** (0.06)	1.29	0.26**** (0.06)	1.29	0.04**** (0.01)	0.04**** (0.01)
Evaluation_Outside Stakeholder (H4)	0.16* (0.1)	1.18	0.17* (0.1)	1.19	-0.17 (0.11)	0.84	-0.17 (0.11)	0.84	-0.01 (0.11)	0.99	-0.06 (0.10)	0.99	-0.01 (0.02)	-0.01 (0.02)
Implementation Obstacles (H5)	0.06 (0.06)	1.06	0.06 (0.06)	1.06	-0.03 (0.06)	0.97	-0.04 (0.06)	0.97	0.08 (0.06)	1.08	0.08 (0.06)	1.08	0.01 (0.01)	0.004 (0.01)
Council-Manager	-0.11 (0.42)	0.89	-0.13 (0.41)	0.88	-0.15 (0.40)	0.86	-0.16 (0.40)	0.86	-0.55 (0.42)	0.58	-0.55 (0.42)	0.58	-0.05 (0.06)	-0.05 (0.06)
Council-Manager × Year	-0.04 (0.31)	0.96	-0.034 (0.3123)	0.97	0.22 (0.32)	1.25	1.25 (0.4)	1.25	0.51 (0.33)	1.66	0.51 (0.30)	1.66	0.04 (0.05)	0.04 (0.05)
Metropolitan Statistical Areas	0.20 (0.26)	1.22	0.2038 (0.2643)	1.23	0.37 (0.27)	1.45	0.37 (0.27)	1.45	0.45 (0.28)	1.56	0.45 (0.28)	1.56	0.06 (0.05)	0.06 (0.05)
State Level														
Divided Government (H6)	0.19 (0.24)	1.21	0.1948 (0.2362)	1.22	0.56** (0.24)	1.74	0.56** (0.24)	1.75	0.60** (0.25)	1.82	0.60** (0.2516)	1.82	0.08* (0.04)	0.08* (0.04)
State Reinventions (H7)	-0.03 (0.06)	0.97	-0.0469 (0.0646)	0.95	-0.13* (0.07)	0.88	-0.13** (0.07)	0.88	-0.2*** (0.07)	0.82	-0.2*** (0.07)	0.88	-0.03** (0.01)	-0.02 (0.05)
State Law (H8)	0.18 (0.27)	1.20	0.2581 (0.2851)	1.29	-0.41 (0.27)	0.66	-0.37 (0.29)	0.69	-0.25 (0.28)	0.78	-0.25 (0.30)	0.78	-0.04 (0.05)	-0.02 (0.05)
State Fiscal Health (H9)	-5.29 (8.15)	1	-3.48 (8.51)	1	1.11 (8.79)	1	1.22 (9.19)	1	6.57 (8.72)	1	6.73 (9.11)	1	5.42 (1.84)	4.69 (1.94)
State Populations	-5.35 (1.43)	1	-4.00 (1.44)	1	5.44 (1.51)	1	6.34 (1.52)	1	5.57 (1.52)	1	5.68 (1.53)	1	-6.95 (2.62)	1.62 (2.64)
Republican Governor	-0.06 (0.22)	0.94	-0.0623 (0.2249)	0.94	0.01 (0.23)	1.01	0.01 (0.23)	1.01	-0.45* (0.24)	0.64	-0.45* (0.22)	0.64	-0.03 (0.04)	-0.03 (0.04)
Constant	2.11		-2.0312		-1.38		-1.3375		-1.43		-1.42		0.20	0.21
State Level														
Variance(Time)	6.23(2.31)		1.01(9.29)		1.15(2.60)		1.06(8.01)		1.14(8.59)		5.73(6.10)		0.002	0.003
Variance(Time2)			2.90(1.49)				5.03(3.28)				2.05(2.05)			0.001
Variance(constant)	1.27(4.41)		1.45(4.69)		4.36(5.89)		3.58(1.70)		1.24(1.56)		2.40(2.17)		0.002	0.003
Local Level														
Variance(Time)	7.29(5.05)		1.82(6.28)		0.06(0.15)		0.06(0.15)		1.92(6.51)		1.81(2.02)		0.01	0.01
Variance(Time2)			1.97(1.46)				3.20(1.01)				4.83(2.02)			0.003
Variance(constant)	0.03(0.20)		0.03(0.20)		1.42(9.83)		4.59(1.76)		0.05(0.24)		0.05(0.24)		0.01	0.02
Residual													0.10	0.09
Wald Chi2	71.22****		71.30****		92.93***		92.73****		102.9****		102.87****		222.03***	216.61****
State Sample Size	42		42		42		42		42		42		42	42
Local Sample Size	229		229		229		229		229		229		229	229
Fit Measures														
Df	20		23		20		23		20		23		16	17
Deviance	639.55		638.96		609.31		609.11		582.87		582.87		462.75	487.88
AIC	679.55		684.96		649.31		655.11		622.87		628.87		494.75	521.88
BIC	766.18		784.59		735.94		754.73		709.50		728.49		564.05	595.52

*p<0.1, **p<0.05, ***p<0.01, ****p<0.001

() standard error

5.4.5 Model Fit in Private Contracting

We do not reject the null hypothesis that the growth curve model provides an equally good fit to the data shown in table 5.8. For example, when the dependent variable is citizen satisfaction, the change in the number of parameters is 22-19=3. We compare 0.59 to the critical value of chi-square with three degrees of freedom, which is 7.82. Because $0.59 < 7.82$ 3, we do not reject the null hypothesis that the growth curve model fit the data well. As well, AIC and BIC values are smaller in the linear growth model than those in the growth curve model. Therefore, we determine that the growth curve models do not fit significantly better than the linear growth model, and we prefer the linear growth model. For the performance measurement model, the linear growth model significantly fits well than the growth curve model with three degree freedoms of the critical values of 25.13. As well, AIC and BIC values are smaller in the linear growth model than in the growth curve model. Then this dissertation prefers the linear growth model as providing the best fit for these models.

Table 5.8: Model Fit in Private Contracting

	a. Deviance	Parameter	Deviance	Deviance Test		
				Chi-square	df	p-value
Citizen Satisfaction	Linear Growth	19	639.55	0.59	3	P＞0.05
	Growth Curve	22	638.96			
Cost	Linear Growth	19	609.31	0.20	3	P＞0.05
	Growth Curve	22	609.11			
Contract compliance	Linear Growth	19	582.87	0	3	P＞0.05
	Growth Curve	22	582.87			
Performance Measurement	Linear Growth	19	462.75	25.13	3	P＜0.001
	Growth Curve	22	487.88			
	b. AIC	df	Value	Critical Value		
Citizen Satisfaction	Linear Growth	20	679.55	The smaller, the better.		
	Growth Curve	23	684.96			
Cost	Linear Growth	20	649.31	The smaller, the better.		
	Growth Curve	23	655.11			
Contract compliance	Linear Growth	20	622.87	The smaller, the better.		
	Growth Curve	23	628.87			
Performance Measurement	Linear Growth	16	494.75	The smaller, the better.		
	Growth Curve	17	521.88			
	c. BIC	df	Value			
Citizen Satisfaction	Linear Growth	20	766.18	The smaller, the better.		
	Growth Curve	23	784.59			
Cost	Linear Growth	20	735.94	The smaller, the better.		
	Growth Curve	23	754.73			
Contract compliance	Linear Growth	20	709.50	The smaller, the better.		
	Growth Curve	23	728.49			
Performance Measurement	Linear Growth	16	564.05	The smaller, the better.		
	Growth Curve	17	595.52			

Figure 5.2 contains a separate two-way plot for each local government adopting performance measurement in terms of private contracting. The graph indicates that the model fits reasonably well.
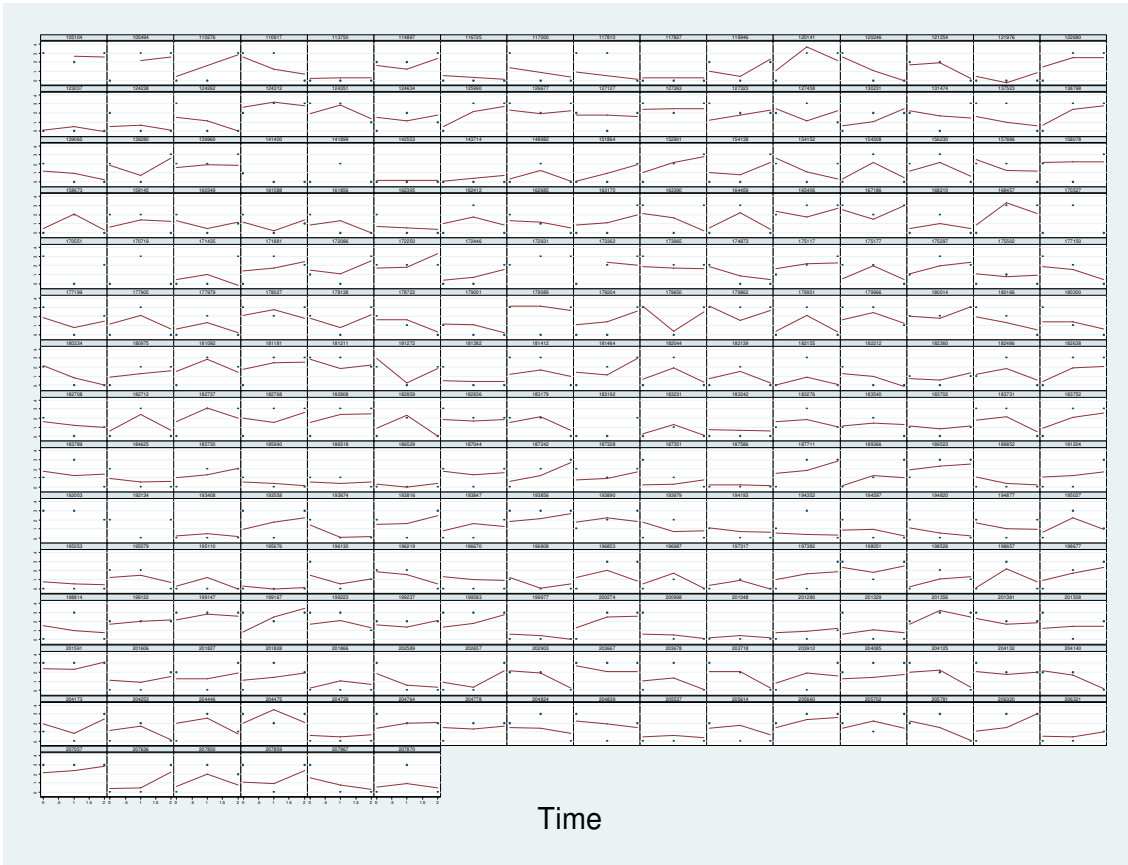
Figure 5.2: Trellis Graph of Observed Responses (Dots) and Fitted Trajectories (Dashed Lines) of Performance Measurement for Private Contracting

5.4.6 Intraclass Correlations in Private Contracting

As expected, there is a high degree of intraclass correlation in different local governments nested in the same state shown in table 5.9. A local government where the intraclass correlation between repeated measures is high, indicates that the majority of the variation presents in the sample occurs at the same state (Goldstein, 1995; Baumler et al., 2003). For example, the adoption of a cost measure, the intraclass correlation between different local governments located in the same state is 97.69% (linear growth model) and 97.97% (growth curve model). However, the intraclass correlation for the repeated observations of the same local government nested in the same state is low. For example, the intraclass correlation between repeated observations is 24.57% in the linear growth model and 12.76% in the growth curve model, when a local government adopts a cost measure related to private contracting. As well, for the performance measurement model,

the intraclass correlation between and within the repeated measurement is low in both the linear growth model and in the growth curve model shown in table 5.9.

Table 5.9: Intraclass Correlations in Private Contracting

	Citizen Satisfaction		Cost		Contract compliance		Performance Measurment	
Intraclass Correlation	Linear Growth	Growth Curve	Linear Growth	Growth Curve	Linear Growth	Growth Curve	Linear Growth	Growth Curve
Different local government within the same state	97.69%	97.97%	75.43%	43.82%	96.12%	97.96%	1.67%	2.65%
The same local government nested in the same state	2.31%	2.03%	24.57%	12.76%	3.88%	2.04%	8.93%	17.7%

5.4.7 Summary in Private Contracting

As expected, contract management capacity is also of importance to the adoption of performance measurement. That is, the feasibility assessment capacity, evaluation capacity and implementation capacity which local governments employ are the preferred management instruments for local private contracting, when they adopt performance measures. As well, state divided government is inclined to influence local governments to adopt performance measurement. One of the possible reasons is that the different parties affiliated to state administration and state legislatures are of assistance to local governments to build a monitoring mechanism. However, surprisingly, the high levels of state reinventions do not necessarily help the creation of local performance measurement. Several possible reasons can explain this. As previously indicated in chapter 1, the adoptions of different types of performance measurement are not common in most local governments. Therefore, even if state reinventions are active and raging like a fire, this trend does not spread to local governments.

5.5 Nonprofit Contracting

5.5.1 Citizen Satisfaction

In terms of nonprofit contracting, table 5.10 contains the estimated coefficients and corresponding odds ratios based on results from a series of random coefficient models fit to these data. With each unit increase in evaluation_insider stakholders (H3), a local government odds of adopting a citizen satisfaction measure increases by nearly 32% in the linear growth model and 24% in the growth curve model (that is, 100%*(OR-1)=100 %*(1.32-1)=32%), holding other effects constant. The odds ratio for implementation capacity (H2), exp(0.17) =1.19, indicates that the expected odds of adopting a citizen satisfaction measure are by a factor of 1.19 in linear growth model and growth curve model, holding other variables constant. However, state predictors do not influence the adoption of a citizen satisfaction measure in terms of nonprofit contracting.

5.5.2 Cost

Table 5.10 informs that for each one unit increase in evaluation_inside stakeholder capacity (H3), the odds of adopting a cost measure increase by 38% in the linear growth model and by 24% in the growth curve model [(OR-1) × 100%], holding all other variables constant. The capacity of implementation (H2) is expected to increase by 53% in the linear growth model and the growth curve model, holding all other variables constant. But for each additional evaluation capacity_outside stakeholder (H4), the expected odds of adopting a cost measure decrease by about 26% in the linear growth model and 14% in the growth curve model, controlling other variables constant at their means. For geographical factors, the expected odds of adopting a cost measure for local governments with a council-manager form is 2.44 times (linear growth) (e.g., 1/0.41) and 1.33 times (growth curve) (e.g., 1/0.75) lower than for local governments with non council-manager form. In state level, the odds of adopting a cost measure between and within local governments are expected to decrease by a factor of about 19% (linear growth model) and 11% (growth curve model), as state reinventions increase by one unit.

5.5.3 Contract Compliance

Similarly, when the evaluation_inside stakeholder capacity (H3) increases by one unit, the expected odds of adopting contract compliance are expected to increase by a

factor of 1.46 (linear growth model) and 1.33 (growth curve model), holding all other variables constant. The implementation capacity is expected to increase the odds of adopting a contract compliance by a factor of 1.43 (linear growth model) and 1.62 (growth curve model), holding all variables constant. The odds of having a greater probability of adopting a contract compliance are 67% (linear growth model) and 36% (growth curve model) smaller for council-manager governments than for non council-manager governments, holding other variables constant. However, with the passage of time, the council manager governments tend to adopt a contract compliance more than do non council-manager governments by a factor of 2.32 (linear growth model) and 2.32 (growth curve model), holding other variables constant. For state predictors, the higher the degree of reinventing state government (H7), the less the likelihood of adopting the contract compliance by about 17% (linear growth model) and 18% (growth curve model) (e.g., (OR-1) × 100%). In addition, the expected odds of adopting a contract compliance in local nonprofit contracting are 1.23 times (e.g., 1/0.81) lower for the Republican State Governor than for the non-Republican State Governor in growth curve model.

5.5.4 Performance Measurement

In the performance measurement model, evaluation_inside stakeholder capacity (H3) and implementation capacity (H2) are significantly positively related with adoption performance measurement. However, the relationship between evaluation_outside stakeholders capacity (H4) and adoption of performance measurement is significantly negative. As well, the local governments with council-manager form of government are less likely to adopt performance measurement than those with non- council-manager governments. However, no state factor influences the adoption of performance measurement, when local governments employ nonprofit contracting.

Table 5.10: HGLM and HLM Explaining the Adoptions of Performance measurement in Terms of Local Service Delivery Contracting Nested in State Levels Over Time (Nonprofit Contracting)

| | Citizen Satisfaction | | | | Cost | | | | Contract compliance | | | | Performance Measurement | |
| | Linear Growth | | Growth Curve | | Linear Growth | | Growth Curve | | Linear Growth | | Growth Curve | | Linear Growth | Growth Curve |
Fixed Effects	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Coef.
Time	0.12 (0.36)	1.13	-0.16 (0.78)	0.66	0.11 (0.4)	1.11	-0.24 (0.82)	0.67	0.04 (0.42)	1.04	0.47 (0.85)	1.65	0.03 (0.06)	-0.04 (0.114)
Time ^{2}			0.13 (0.32)	1.35			0.17 (0.34)	1.33			-0.20 (0.35)	0.99		0.03 (0.05)
Local Level														
Feasibility Assessment (H1)	-0.11 (0.12)	0.89	-0.12 (0.12)	1.00	0.13 (0.13)	1.13	0.12 (0.13)	1.25	-0.05 (0.14)	0.96	-0.04 (0.14)	1.01	-0.001 (0.02)	-0.001 (0.02)
Implementation (H2)	0.17** (0.07)	1.19	0.17** (0.07)	1.19	0.43**** (0.1)	1.53	0.43**** (0.10)	1.53	0.36**** (0.09)	1.43	0.35**** (0.09)	1.62	0.06**** (0.01)	0.06**** (0.01)
Evaluation _Inside Stakeholder (H3)	0.28**** (0.07)	1.32	0.28**** (0.07)	1.24	0.32**** (0.08)	1.38	0.32**** (0.09)	1.24	0.38**** (0.1)	1.46	0.38**** (0.1)	1.33	0.06**** (0.01)	0.07**** (0.01)
Evaluation_Outside Stakeholder (H4)	0.06 (0.12)	1.06	0.07 (0.12)	1.2	-0.3** (0.15)	0.74	-0.29* (0.15)	0.86	-0.04 (0.15)	0.96	-0.05 (0.15)	1.04	-0.04* (0.02)	-0.03* (0.02)
Implementation Obstacles (H5)	0.11 (0.07)	1.12	0.11 (0.07)	1.09	0.05 (0.08)	1.05	0.05 (0.08)	0.99	0.12 (0.08)	1.13	0.13 (0.08)	1.09	0.01 (0.01)	0.01 (0.01)
Council-Manager	-0.20 (0.51)	0.82	-0.22 (0.52)	0.85	-0.89* (0.52)	0.41	-0.9* (0.52)	0.75	-1.1* (0.58)	0.33	-1.09* (0.58)	0.64	-0.14* (0.08)	-0.14* (0.08)
Council-Manager × Year	-0.15 (0.37)	0.86	-0.14 (0.37)	0.79	0.14 (0.40)	1.15	0.14 (0.40)	1.1	0.84** (0.43)	2.32	0.85** (0.43)	2..32	0.04 (0.06)	0.05 (0.06)
Metropolitan Statistical Areas	-0.02 (0.32)	0.98	-0.01 (0.32)	1.50	0.12 (0.36)	1.13	0.14 (0.36)	1.66	0.34 (0.39)	1.41	0.31 (0.4)	1.88	0.03 (0.06)	0.03 (0.06)
State Level														
Divided Government (H6)	0.11 (0.28)	1.11	0.11 (0.30)	1.06	0.45 (0.32)	1.57	0.46 (0.32)	1.96	0.53 (0.34)	1.69	0.52 (0.34)	1.94	0.04 (0.05)	0.04 (0.05)
State Reinventions (H7)	0.01 (0.08)	1.01	0.01 (0.08)	0.99	-0.21** (0.09)	0.81	-0.22** (0.09)	0.89	-0.18** (0.09)	0.83	-0.17* (0.09)	0.82	-0.02 (0.01)	-0.02 (0.01)
State Law (H8)	0.19 (0.33)	1.21	0.24 (0.36)	1.48	-0.32 (0.37)	0.72	-0.27 (0.38)	0.90	-0.39 (0.39)	0.67	-0.47 (0.41)	1.00	-0.02 (0.06)	-0.005 (0.06)
State Fiscal Health (H9)	-8.47 (8.18)	1	-7.59 (8.71)	1	1.13 (9.65)	1	1.26 (1.01)	1	-1.85 (9.72)	1	-3.30 (1.00)	1	5.67 (2.45)	1.10 (2.59)
State Populations	-1.94 (1.80)	1	-1.88 (1.99)	1	-7.67 (2.01)	1	-6.89 (2.02)	1	-5.68 (2.09)	1	-6.37 (2.09)	1	8.07 (3.59)	1.18 (3.64)
Republican Governor	0.25 (0.28)	1.29	0.25 (0.28)	1.13	0.09 (0.30)	1.10	0.09 (0.30)	1.16	-0.56 (0.33)	0.57	-0.56* (0.33)	0.81	-0.000 (0.05)	-0.001 (0.05)
Constant	-2.03		-1.98		-0.35		-0.32		-1.25		-1.30		0.24	0.25
State Level														
Variance(Time)	1.66(1.55)		3.01(3.50)		9.16(3.02)		1.07(3.36)		4.33(2.28)		2.74(5.46)		0.004	0.01
Variance(Time2)			0.004(0.02)				9.32(4.96)				4.71(1.26)			0.001
Variance(constant)	1.63(1.73)		8.95(1.19)		4.66(2.42)		3.66(6.84)		3.24(8.43)		2.33(7.11)		0.004	0.004
Local Level														
Variance(Time)	2.00(1.93)		1.55(1.31)		0.18(0.27)		0.19(0.28)		0.06(0.30)		3.09(0.01)		0.021	0.02
Variance(Time2)			2.91(4.29)				4.44(4.74)				0.01(0.08)			0.004
Variance(constant)	5.92(1.26)		8.71(1.43)		7.85(0.000)		1.42(1.90)		0.39(0.52)		0.43(0.51)		0.037	0.05
Residual													0.10	0.05
Wald Chi2	55.12****		51.04****		51.10****		50.34****		42.10****		38.36****		159.21****	166.95****
State Sample Size	42		42		42		42		42		42		42	42
Local Sample Size	217		217		217		217		217		217		217	217
Fit Measures														
Df	20		23		20		23		20		23		16	17
Deviance	413.22		412.97		385.72		385.48		374.91		374.57		323.06	354.64
AIC	453.22		458.97		425.72		431.48		414.91		420.57		355.06	388.64
BIC	531.16		548.60		503.67		521.11		492.86		510.21		417.42	454.9

*p<0.1, **p<0.05, ***p<0.01, ****p<0.001

() standard error

5.5.5 Model Fit in Nonprofit Contracting

For adopting a citizen satisfaction measure shown in table 5.11, the change in deviance from the linear growth model to the growth curve model, 0.25 does not exceed the critical value of 7.82, the critical value of chi-square with three degrees of freedom at α=0.05, shown in table 5.11. This indicates that the growth curve model does not significantly fit the data better than does the linear growth curve model. The comparative results also support that the linear growth model is a better fit than the growth curve model when the dependent variables are cost and contract compliances. Also, for the performance measurement model, the linear growth model is a significantly better fit than the growth curve model (χ^2=31.58, p<0.001).

Using the AIC and the BIC values to compare which model fits well, the AIC and the BIC favor the linear growth model when the dependent variables are citizen satisfaction, cost, contract compliance, and performance measurement.

Table 5.11: Model Fit in Nonprofit Contracting

	a. Deviance	Parameter	Deviance	Deviance Test		
				Chi-square	df	p-value
Citizen Satisfaction	Linear Growth	19	413.22	0.25	3	P＞0.05
	Growth Curve	22	412.97			
Cost	Linear Growth	19	385.72	0.24	3	P＞0.05
	Growth Curve	22	385.48			
Contract compliance	Linear Growth	19	374.91	0.34	3	P＞0.05
	Growth Curve	22	374.57			
Performance Measurement	Linear Growth	19	323.06	31.58	3	P＜0.001
	Growth Curve	22	354.64			
	b. AIC	df	Value	Critical Value		
Citizen Satisfaction	Linear Growth	20	453.22	The smaller, the better.		
	Growth Curve	23	458.97			
Cost	Linear Growth	20	425.72	The smaller, the better.		
	Growth Curve	23	431.48			
Contract compliance	Linear Growth	20	414.91	The smaller, the better.		
	Growth Curve	23	420.57			
Performance Measurement	Linear Growth	16	355.06	The smaller, the better.		
	Growth Curve	17	388.64			
	c. BIC	df	Value			
Citizen Satisfaction	Linear Growth	20	531.16	The smaller, the better.		
	Growth Curve	23	548.60			
Cost	Linear Growth	20	503.67	The smaller, the better.		
	Growth Curve	23	521.11			
Contract compliance	Linear Growth	20	492.86	The smaller, the better.		
	Growth Curve	23	510.21			
Performance Measurement	Linear Growth	16	417.42	The smaller, the better.		
	Growth Curve	17	454.9			

Figure 5.2 contains a separate two-way plot for each local government which adopts performance measurement in terms of nonprofit contracting. The graph indicates that the model fits reasonably well.
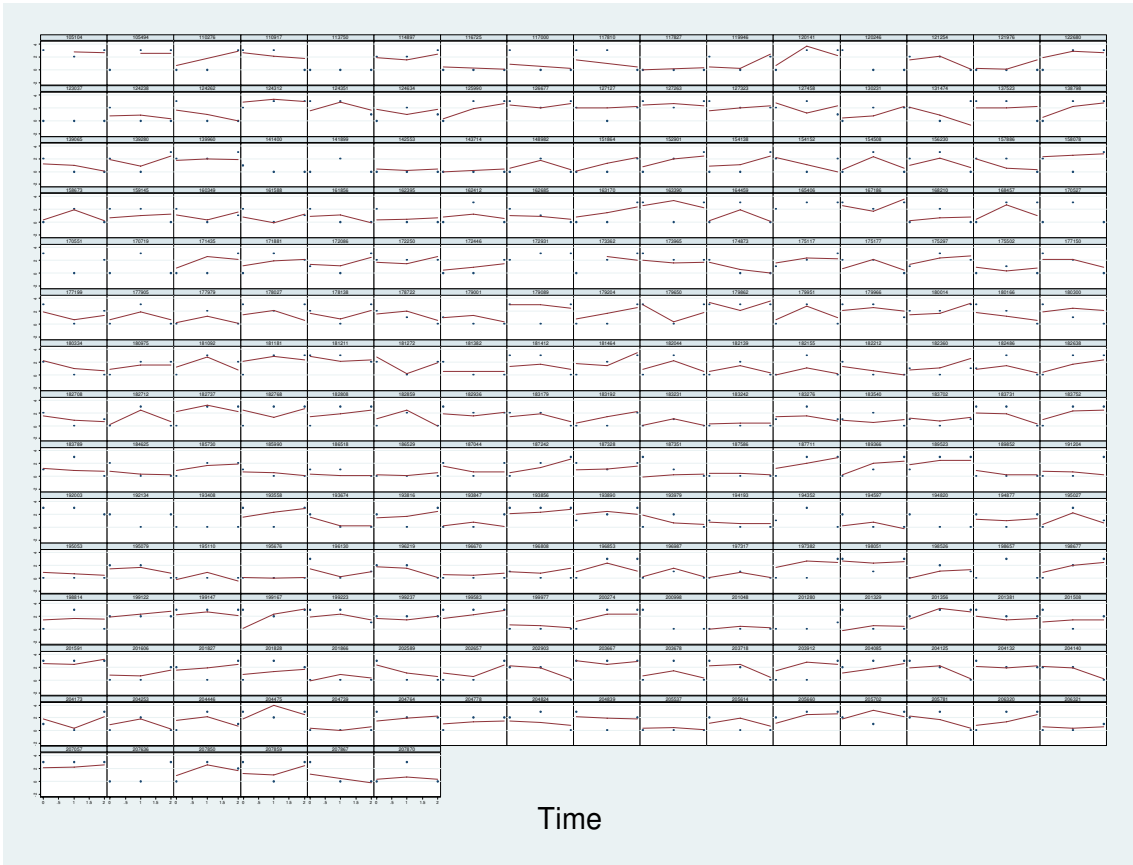
Figure 5.3: Trellis Graph of Observed Responses (Dots) and Fitted Trajectories (Dashed Lines) of Performance Measurement for Nonprofit Contracting

5.5.6 Intraclass Correlations in Nonprofit Contracting

The adoption of a citizen satisfaction measure, the intraclass correlation between different local governments located in the same state government is 21.59% (linear growth model) and 50.68% (growth curve model). However, the intraclass correlation for the repeated observations of the same local government nested in the same state is low. For example, the intraclass correlation between repeated observations (the same local government nested in the same state government) is 78.41% in linear growth model and 49.32% in growth curve model, when a local government adopts a citizen satisfaction measure related to nonprofit contracting shown in table 5.12.

Table 5.12: Intraclass Correlations in Nonprofit Contracting

Intraclass Correlation	Citizen Satisfaction		Cost		Contract Compliance		Performance Measurement	
	Linear Growth	Growth Curve	Linear Growth	Growth Curve	Linear Growth	Growth Curve	Linear Growth	Growth Curve
Different local governments within the same state	21.59%	50.68%	37.25%	72.05%	89.26%	85.35%	2.84%	3.85%
The same local government nested in the same state	78.41%	49.32%	62.75%	27.95%	10.74%	15.75%	26.24%	48.08%

5.5.7 Summary in Nonprofit Contracting

The empirical findings with nonprofit contracting are obviously different from private contracting. The contract management capacity (e.g., evaluation_inside stakeholder, implementation) still plays an important role toward the adoption of citizen satisfactions, cost, contract compliance and performance measurements. But the capacity of evaluation_outside stakeholder is negatively related with the adoption of a cost measure and performance measure. For nonprofit contracting, council-manager governments tend to adopt cost, contract compliance or performance measures less than do non council-manager governments. One of the possible reasons is that the efficient mechanism-council-manager governments do not positively influence the adoption of performance measurement for nonprofit contracting. This finding reverses our expectation: council-manager governments tend to adopt the efficient mechanism- performance measurement for contracting services. In addition, some state predictors have weaker influences; that is, only state reinventions have significant influences on the adoptions of cost, contract compliance and performance measurement, when local governments employ nonprofit contracting.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

This chapter will summarize the hypothesis testing, research limitations and recommendations for future research, implications for public management research, as well as recommendations for local management practices.

6.1 Summary of Hypothesis Testing

All hypotheses were tested to examine the relationships between independent variables and dependent variables, holding other control variables constant. These independent variables include local predictors: Feasibility Assessment Capacity(H1), Implementation Capacity(H2), Evaluation _Inside Stakeholder Capacity(H3), Evaluation_Outside Stakeholder Capacity (H4), Implementation Obstacles (H5), as well as state predictors: Divided Government (H6), State Reinventions (H7), State Law (H8), and State Fiscal Health (H9). The four dependent variables are citizen satisfaction, cost, contract compliance, and performance measurement.

Table 6.1 summarizes the results of hypothesis testing in this dissertation. In terms of total contracting services, private contracting, as well as nonprofit contracting, most of local contract management capacity (e.g., feasibility assessment capacity, evaluation_inside stakeholder capacity, evaluation_outside stakeholder capacity, implementation capacity) are corroborated or rejected in our hypotheses. The state divided government obviously influences the adoption of a cost measure, a contract compliance, performance measurement in terms of total contracting, and private contracting. As well, state reinventions count against the adoption of a cost, a contract compliance, and performance measurement in terms of total contracting, private contracting and nonprofit contracting. And good fiscal health did not significantly influence the adoption of a citizen satisfaction measure in total contracting services. But the state predictors weakly influence the adoption of citizen satisfaction, cost, contract compliance, and performance measurement in terms of nonprofit contracting.

In addition, some local internal determinants appear to impact the different types of service delivery contracting. In addition, for nonprofits with contracting, the governments with council-manager form tends not to adopt performance measurement compared to non council-manager governments.

Table 6.1: Summary of Hypotheses Testing

	Total Service Contracting							
	Citizen Satisfaction		Cost		Contract compliance		Performance Measurement	
	Linear Growth	Growth Curve	Linear Growth	Growth Curve	Linear Growth	Growth Curve	Linear Growth	Growth Curve
Local Level								
Feasibility Assessment (H1)			support	support				support
Implementation (H2)	support	support	support	support	support	support	support	support
Evaluation _Inside Stakeholder (H3)	support	support	support	support	support	support	support	support
Evaluation_Outside Stakeholder (H4)		support	reject	reject				
Implementation Obstacles (H5)								
State Level								
Divided Government (H6)			support	support	support	support	support	support
State Reinventions (H7)			reject	reject	reject	reject	reject	reject
State Law (H8)								
State Fiscal Health (H9)	reject							
Private Contracting								
Local Level								
Feasibility Assessment (H1)			support	support				
Implementation (H2)	support	support	support	support	support	support	support	support
Evaluation _Inside Stakeholder (H3)	support	support	support	support	support	support	support	support
Evaluation_Outside Stakeholder (H4)	support	support						
Implementation Obstacles (H5)								
State Level								
Divided Government (H6)			support	support	support	support	support	support
State Reinventions (H7)			reject	reject	reject	reject	reject	
State Law (H8)								
State Fiscal Health (H9)								
Nonprofit Contracting								
Local Level								
Feasibility Assessment (H1)								
Implementation (H2)	support	support	support	support	support	support	support	support
Evaluation _Inside Stakeholder (H3)	support	support	support	support	support	support	support	support
Evaluation_Outside Stakeholder (H4)	support	support						
Implementation Obstacles (H5)								
State Level								
Divided Government (H6)								
State Reinventions (H7)			reject	reject	reject	reject		
State Law (H8)								
State Fiscal Health (H9)								

6.2 The Insignificant Diffusion of Performance Measurement

The above evidence shows that the types of adopting performance measures do not significantly grow over time. Some cross-sectional researches also had similar findings. Poister and Streib (1994) found that financial forecasting was used by 76 percent of local governments, employee involvement efforts by 74 percent, and Management by Objectives (MBO) by 47 percent. Some efforts were organization-wide,

whereas others are used only in some departments. In 1998, only one third of U. S. counties with populations over 50,000 were using some level of performance measurement, and among these, only 20 percent had made a serious investment (Berman & Wang, 2000). In the cities with populations over 50,000, 73.5 percent reported having used strategic planning at least one department (Berman & West, 1998). In a study carried out with the Government Accounting Standards Board, Melkers and Willoughby (2005) found that performance measurement was used by 47.8 percent of local governments in all departments and another 20 percent in some departments. In Poister and Streib (2005) research of the municipalities with populations over 25,000, only 56 percent of these respondents reported their jurisdictions used performance measures to track the implementation of projects or other initiatives emanating from their strategic plans, while only 35 percent of these respondents indicated their jurisdictions reported performance data associated with their strategic plans to the public on a regular basis. A recent study of U.S. Midwest cities with populations between 10,000 and 200,000 showed that most cities have performance measures, and many elected officials have exposure to the information in meetings with city staff. However, only 17 percent of the responding cities have involved citizens in the development and selection of performance measures (Ho, 2006).

Such empirical studies confirm that local performance improvement was not a fad, but is a body of slowly diffusing knowledge and management practices (Berman, 2006), even if federal (Thompson, 2000) and state (Melker & Willoughby, 1998) management innovation (e.g., performance measures, performance budgeting) become daily practices. Although there may be questions about the quality and effectiveness of some applications, performance improvement strategies clearly showed increased use and diffusion over time (Berman, 2006). Poister and Streib (1994) speculated that one reason is because smaller organizations may lack resources for their use. Some strategies require investment in training, personnel, and in some cases information technology that is beyond their budget. Other reasons are that some strategies can be used toward multiple purposes; there may not be a need to use all strategies all the time in every organization. Another reason is that some organizations have a climate that resists change and improvement (Berman, 2006).

6.3 Recommendations for Local Management Practices

We find that the group differences among private contracting, and nonprofit contracting indeed exist in the relationship between contract management capacity, state factors, and the adoption of performance measurement. Our findings have implications for local participants on the role of contract management and state factors matter in private contracting toward the adoption of performance measurement. For nonprofit contracting, it is important to consider contract management capacity, but state factors weakly influence the adoption of performance measurement. No internal determinant decides their relationships for private contracting. We have therefore established reasonable support for a theoretical position that the differences of contracting types exist in local contract management capacity and the adoption of performance measurement nested in the state level. In addition, although the given current trend of U.S. cities to adopt the council-manger form of government in result from its efficient characteristics, the efficient government form does not necessarily adopt the efficient management innovation for nonprofit contracting. One of the possible reasons is that this efficient mechanism may not exit in these sample localities. In sum, our exploratory analysis takes account of the predictions among the actual and potential factors that construct the contents of local contract management capacity and performance management innovation.

6.4 Implications to Public Management Research

It is simple for the multilevel model to add higher levels to investigate the effect of state governments on local development. It is simple to include time varying independent variables to the model, which allows us to model both the state and local developmental trajectory (Hox 2000; Raudenbush & Bryk, 2002). Via the cohort range from 1992, 1997 to 2002, and using multilevel model to estimate the diffusion of local performance measurement, we get more information related to the interaction between state levels and local levels. The findings indicate that local behaviors and state behaviors do significantly result in the adoption of performance measurement in localities nested in state levels.

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This dissertation also acquires more information about how a higher authoritative level—state government-- indeed influences the lower level's practices. The findings provide quite strong evidence that the use of local performance measurement was obviously influenced by state rules. The previous efforts in local management innovation only analyze the variation at one level, such as the local level, but this may underestimate the higher level's influences especially due to the fact of the hierarchical relationship that exists between the state and local levels n the American administrative system. If we ignore this calculation of the state role to estimate local practices, some spurious findings may have adverse effects on local practices. State-local relations are also deeply influenced by an arrangement of activities within the states (Berman, 2005).

This dissertation does not dogmatically conclude that the previous findings gave untrustful results because of research limitations, measurement errors, or research design. However, I highly doubt that the previous empirical findings may provide spurious analytical results, because they saw local practices as a closed system rather than operating within a federal system.

6.5 Research Limitations and Recommendations for Future Research

This dissertation tries to estimate the spread and use of local performance measurement related to local service contracting nested in state level. However, we need to caveat that this dissertation only limits the three measures of performance as an indicator of management innovation. The future research can introduce other types of performance measures to test their diffusions and innovative factors.

In addition, with the passage of time, the adoption rates of a citizen satisfaction measure, a cost measure, a contract compliance, and performance measurement decrease in initial status but then increase in the following time. The statistical evidences do not supply the information of time effects taking significant effects (see table 5.4, table 5.7, table 5.10). We need to acknowledge that time order may be a problem because cost, compliance or satisfaction may have been established as "techniques to evaluate private service delivery" prior to some of the explanatory variables. Although the successive adoption rates are not significant, we are unwilling to make a hasty conclusion that the diffusions of local performance measurement do not succeed well. One of the reasons is

that the panel data set may not have enough time points that satisfy the reliable and valid inferences. In addition, the research samples seem not enough to represent total localities to support the successive phenomenon for the diffusion of performance measurement. Future research needs to test the sample representativeness.

Several questions are still unsolved in my dissertation. Traditionally, innovation studies of state policy adoption have only focused exclusively on explaining policy innovation-the timing of when a jurisdiction first adopts that policy. One problem with this approach is that it does not consider the following implementation within a jurisdiction. For example, Willoughby and Melkers (2000) noted that, although 47 states had adopted performance budgeting, only 29 had implemented it, and the implementation process in state government was sometimes limited or incomplete. The local administrator's perception may limit our attentions to understand the implementation. The survey data has the potential of individual perceptual bias and social desirability bias; nonetheless, the perceptual measures are linked systematically and logically with reality (Moon, 1999; Lee et al., 2006). Further, we may underestimate the following factors that may influence the adoption of local management innovation such as local politics, the internal factors of organizations (e.g., local employees). The future research needs to be broadened to include more variables to test.

Strategies to improve local contracting require coordinated efforts from contract management, implementation obstacles, state reinventions, state law, and state divided government. Most practical participators, however, tend not to think of local contracting as being driven solely by concerns of management innovation but rather to be responding to social, economic and administrative concerns when strengthening their efforts which to obtain their policy goals. There are a number of internal and external factors that explain local service delivery contracting and the adoption of performance measurement. However, this dissertation only focus on contract management capacity and state factors related to local service contracting rather than considering more extensive socio-economic factors.

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• Hsieh, Jun Yi (2008)."Performance and Satisfaction in Workforce Differences of Public, Private and Nonprofit Sectors: An Examination of Their Antecedents and Simultaneity." Paper presented at Southeastern Conference for Public Administration. Orlando, Florida.
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