# Performance Management System Design and Implementation in Police Agencies:

# Is Following Recommended Practices Worth It?

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**Performance Management System Design and Implementation in Police Agencies:**

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# CHAPTER 1: INTRODUCTION

Over two decades ago Paul Epstein proclaimed that "the time for performance measurement is finally coming!" (Epstein, 1992, p. 513). His prophecy can be termed to have come true as the adoption and implementation of performance measurement and management systems has increased manyfold 20 years later. Not everyone, though, shares this opinion. Some scholars have considered the spread of performance management systems to be a fad, which would disappear with time when the focus of public management will move toward something more bright and trendy (Van Thiel & Leeuw, 2002; Radin, 2000, 2006). Other scholars (e.g., Moynihan, 2008; Melkers & Willoughby, 2005) have shown that although performance management systems are implemented in the public sector, they are not being used to make decisions, which halts the justification of the exercise.

Nevertheless, the adoption of performance management systems in the public sector has weathered many storms (Moynihan, 2008; Boyne, 2006). Even if we consider it a fad, we have to admit that it is an especially prolonged one. For at least three decades, performance management has proved its worth in the eyes of many public managers and planners, and has been subsequently implemented for better public sector management.

Due to an increased awareness and educational level today, citizens are becoming more aware about the complexity of government functions, as well as more concerned about the use of their tax money (Ham & Alberti, 2002; Chanley et al., 2000; Thomas, 1998). People demand an efficient and effective use of their tax dollars by public agencies

in performing various governance functions. Public functions and services should not only be relevant to public needs, they should also bring the maximum desired results while using minimal resources. Performance management is used as a tool not only to justify government expenses, but also to help public managers in terms of better planning, accountability, resource allocation, goal focusing, and many other benefits I shall discuss in subsequent chapters (Poister, 2003; Redburn, et al., 2007; Behn, 2003 etc.).

As interest in and concerns about performance management systems continue to grow, scholars have increasingly suggested methods to better design and implement these systems in the public sector organizations, with the underlying assumption that they will help public organizations perform better. These suggestions include approaches to design and implement performance management activities, including target selection, indicator adoption, data collection and analysis, and reporting of results. These recommendations are available in the form of books and research articles that cover a wide variety of performance management systems and their respective usage settings. Scholars argue that by using their recommendations (termed as "recommended practices" from here onwards) in designing and implementing performance management systems, system designers and managers can improve organizational performance; a claim I intend to examine in this paper. There are scores of recommended practices spread out in the literature, which not only lack theoretical foundations, but also might be contradictory to each other.

In this study, I have synthesized the most common recommended practices in the literature, with some empirical grounding and relation to police agencies (target population), and linked them to the four conditions of the goal-setting theory. Using a management model proposed by Meier and O'Toole (1999, 2001), I explored the efficacy

of following recommended practices in designing and implementing performance management systems for local police departments in the US. I used the 2012 Uniform Crime Report (UCR) dataset prepared by the Federal Bureau of Investigation (FBI), and original surveys of the chiefs of various police agencies for this undertaking. I used ordinary least squares (OLS) regression analysis to compare the performance of police agencies (measured in terms of number of crimes per 100,000 people) to the extent to which they follow recommended practices while designing and implementing performance management systems in their respective agencies.

The results from this study suggest do not suggest a link between the recommended practices and police performance, as only the practices of using performance information and providing discretion to officers were found to be supporting the hypotheses for only one out of the eight crime categories. These two significant results might be attributed to chance alone. The results, hence, raise questions about the effectiveness of the recommended practices in improving organizational performance. Justification of the use of recommended practices, however, can still be traced to goal-setting theory.

## 1.1. Purpose of Dissertation

The purpose of this dissertation is to examine the recommended practices for designing and implementing performance management systems. I will test whether the police organizations adhering to the recommended practices in designing and implementing performance management systems generate better performance results than those who do not.

1.2. <u>Performance Management</u>

Performance management is a cyclical process where an organization first establishes goals and lays out the plans to reach them. Indicators are then identified, which could appropriately demonstrate the progress toward the target. The organization then engages itself in collecting the appropriate data corresponding to those indicators during the program implementation, which are then analyzed by comparing the results with standards, past performance, or other organizations. Appropriate actions and decisions are made which might help improve organizational performance, and be reflected by the indicator measurement obtained by future data collection (Moynihan, 2008; Armstrong, 2000; Poister, 2003). The last step provides feedback for the initial step by providing the information needed to re-align organizational goals, targets, strategies, standards, etc. (Moynihan, 2008; Armstrong, 2000; Poister, 2003). This entire process repeats itself monthly, quarterly, annually, or any time period that the system designers might have planned (Moynihan, 2008; Armstrong, 2000).

Moynihan (2008) defines performance management as a "system that generates performance information through strategic planning and performance measurement routines and that connects this information to decision values, where, ideally, the information influences a range of possible decisions" (p. 5). There are, hence, three components of performance management: strategic planning, performance measurement, and taking actions based on the information generated through strategic planning and performance measurement. The strategic planning component deals with establishing a direction for the organization, setting broad and specific objectives, and setting targets at various levels in the organization (Poister, 2010). The performance measurement

component deals with targeting what is to be measured, selecting the indicators, collecting and analyzing the data, and reporting the results (Bouckaert & Van Dooren, 2010, p. 25). Finally, the action component deals with using the information generated through the above two components to take actions and make decisions regarding human resources, capital management, information technology, leadership, and result-based management capacities to improve organizational performance (Ingraham, 2007). Thus, it is clear that from a global or organization-wide perspective, all three components are dependent on each other. Strategic planning provides the overall direction and goals of the program to performance measurement and action component, and uses the feedback information from the performance measurement process in order to revise organizational goals, targets, strategies, services, operation, standards, and so on (Moynihan, 2008; Armstrong, 2000; Poister, 2010).

**Strategic Planning**                                                    **Performance Measurement**

| Mission Strategy Goals Objectives Targets<br><br>Programs Services Operations Standards<br><br>System Purpose and uses for performance measures | Data Collection<br><br>Data Processing<br><br>Computation Of Performance Indicators<br><br>Quality Assurance | Comparisons:<br><br>Over Time<br><br>Against targets<br><br>Across units<br><br>External benchmarking<br><br>Other breakouts | Decisions regarding:<br><br>Strategy Programs Service delivery Operations Resources Goals Objectives Targets Standards<br><br>Performance indicators<br><br>Program Evaluation |

Figure 1: Performance Management System (Poister, 2003, pg. 16)

### 1.2.1. Justification and Applicability:

Hatry (2006) argues that "performance should be measured for all public/private, big/small, and developed/developing countries and organizations rendering all sorts of services and products" (p. 6). It is also often said, "If you can't measure it, you can't manage it" (Armstrong, 2000, p. 52). According to some scholars, public sector management is incomplete without performance management, as the managers will not be able to determine how well or how poorly their establishments are doing, if their decisions are beneficial or harmful, what should be planned, what aspects need attention, and so on (Halachmi & Bouckaert, 1996). Good management is all about performance improvement and a manager cannot improve performance unless he/she knows what the current performance of the organization is, or probably more importantly, what the trend of performance is in the organization (Armstrong, 2000). Performance management is reported to help managers and employees focus on policy priorities and achieve the required targets; as put by Mason Haire, "What gets measured gets done" (Peters & Waterman, 1982, p. 268).

### 1.2.2. Theoretical Framework:

Goal-setting theory states that under certain conditions, people will strive to achieve set goals and targets (Ryan, 1970; Locke et al. 1970; Rand & Peikoff, 1990; Locke, 1996). Setting goals motivates the employees to achieve them so they may increase self-satisfaction as well as gain recognition from their superiors and peers. The genesis of performance management can also be traced in employee motivation theories such as McClelland's Needs of Achievement Theory (1965). According to the Needs of Achievement Theory, if employees are provided with feedback on their work in a

moderately challenging environment, they will try to improve their performance in order to gain expertise and success (Rainey, 2003). Positive as well as constructive feedback is a major source of motivation increment in employees, as they appreciate attention by superiors and peers, and try to obtain more favorable feedback on their work (Geister et al., 2006; Komaki et al., 1982).

According to Moynihan (2008), the underlying assumptions for the adoption of the performance management system can be found in principal-agent theory. According to principal-agent theory, agents possess more information about the on-ground working conditions than the principals, and they might use this information imbalance in their favor rather than in the benefit of the missions and objectives for which the principals have asked for their services (Ostrom, 1990, 1999). Performance management systems work to decrease the information gap between the principals and their agents by providing regular program progress and performance information to them (Melkers & Willoughby, 2005). By linking their compensation to a certain performance measure, the principals might be able to increase the attention of their workers specifically to the actions that increase value for them (Heinrich & Marschke, 2010). The principals can thus use this information to ascertain, monitor, and control the direction of the chartered programs or projects. In short, performance management helps the principals impose their world-view, values, and desires on their agents by setting appropriate performance targets and seeking a follow up on progress toward those goals (Bouckaert & Balk, 1991). As a result, this process might lend more control to the principals over their agents.

Of all of the above theories, justification for performance management can best be grounded under goal-setting theory. Goal-setting theory states that "working toward a

determinate goal would lead to a higher level of task interest than would be the case with an abstract goal such as do your best" (Locke and Bryan 1967, 121). When an organization measures an entity and assigns goals, the organization conveys to its employees what it values most and that entity gains more importance than what it might have stated (Latham, 2000). Hence, the goals should be expressed through measurable results, in order to track employee achievement (McConkie, 1979).

The basis of goal-setting theory rests on the assumption that the previous performance is lower than the desired level of performance, which ideally moves higher as the previous performance increases, making the goals progressive (Carroll & Tosi, 1973). There needs to be a balance between the difficulty and ease to reach the goals. While employees might not put effort toward reaching goals they consider to be unachievable, they would not feel self-satisfaction or receive recognition if the goals are too easy to achieve (Miner, 2006).

Goal-setting theory also argues that the motivational effects of feedback or knowledge of results can be reached only through goal-setting, and in its absence, the feedback is unable to generate any motivation for people to perform better (Miner, 2006). Goal-setting theory assumes that the employees or the organization possess the required knowledge, time, money, people, equipment, skills, and ability to attain the goals (Latham, 2000; Latham & Locke, 2007), and setting goals is the reason why some people have higher performance than others even with similar skills, ability, and knowledge (Latham & Locke, 1991).

The mechanisms of the theory are such that goals motivate people to persistently focus their energies, skills, strategies, and knowledge on the targets, while decreasing the focus of their effort on non-relevant and unimportant activities (Miner, 2006). Maximum effort is not exerted by the individuals in the absence of specific goals, as people have been found to be rating their performance higher when given non-specific, do-your-best goals, compared to specific measurable ones by giving themselves the benefit of the doubt, which they would not be able to award themselves in the presence of specific goals (Kernan & Lord, 1989; Klein, 1990; Mento, Locke, & Klein, 1990; Latham & Locke, 1991). In the pursuit of measurable goals, the subjects adopt directional mechanisms, conscious problem solving, and creative innovation, well beyond and better than the automatic levels of effort, persistence, and direction (Miner, 2006; Latham & Baldes, 1975; Latham & Saari, 1982; Shapiro & Hollenbeck, 1990; Smith, Locke, & Barry, 1990).

The motivation to achieve goals can be changed by tying incentives to behavior (Locke, Bryan, & Kendall, 1968; Miner, 2006). However, incentives will have no impact on behavior if goals and intentions to achieve them remain constant (Locke, Bryan, & Kendall, 1968; Miner, 2006). Factors such as authority, peer groups, publicness of goal statements, incentives, punishments, satisfaction, and competition all contribute to the desirability of trying for a goal as well as to the ability of the subject to achieve them (Miner, 2006).

We can identify four major conditions or components of goal-setting theory from the above discussion. In order for goal-setting to be successful in improving organizational performance, the goals should be:

i.   *Clarity* - to reduce ambiguity and subjective interpretation.

ii.   *Challenging* - so they are neither too difficult nor too easy.

iii.   *Commitment* - so the employees are aware of their importance.

iv.   *Feedback* - so the employees are aware of their progress toward the goals.

I have used the above framework as the basis of the study by linking the recommended practices available in the police management literature (the target population) to these four components of goal-setting theory. I have adopted the Meier and O'Toole management model (1999) as an analysis model to test the effectiveness of these practices.

### 1.2.3.   *Performance Management in the Public Sector:*

The first evidence of the implementation of a performance management system in the context of public administration is found in New York City as early as 1906. The New York Bureau of Municipal Research (NYBMR) used to benchmark its organizational performance on efficiency, effectiveness, and productivity measures against past and targeted performance (Williams, 2004). The information on performance indicators was collected through diverse media, such as employee and citizen surveys, municipal statistics, and cost-accounting techniques (Williams, 2004).

Since those times the magnitude and scope of performance management systems implementation has grown. Organizational performance results are reportedly used everywhere from city halls to congressional sessions and from local governments to federal governments throughout the world in order to defend and justify the efficacy of government programs (Van Thiel & Leeuw, 2002; Cook, 2007). The adoption of performance management systems has also found its way into public sector departments such as defense, tourism, education, health, and so on. Performance measurement system adoption is not

limited to the US, as an overwhelming majority (79%) of Organization of Economic Co-operation and Development countries, as well as some other countries such as Mali, Ethiopia, Slovenia, and South Africa, have implemented performance management methodology in order to improve their governance (Curristine, 2005; Robinson, 2009).

The expansion of the New Public Management (NPM) movement, of which performance management is an integral part, has made an important contribution to the increasing adoption of this tool. New Zealand, being the leader of the NPM movement, boasts a strong performance management system, as all local governments are encouraged to set specific goals for their departments and to base their decisions deeply on the outcomes of the performance results (Goldman & Brashares, 1991; McTigue, 2011). In the US, presidential initiatives such as the NPR (National Performance Review of 1993) and PART (Program Assessment Rating Tool of 2004) have made strong contributions in the adoption of performance management systems throughout the federal, state and local governments and various agencies (Gilmour & Lewis, 2006a, 2006b). Furthermore, support from national organizations such as the National Academy of Public Administration (NAPA) and Governmental Accounting and Standard Board (GASB) have also contributed to the spread of performance measurement systems across the public sector (Aristegueta, 1999) and in federal agencies such as the Naval Education and Training Command, Postal Inspection Services, Departments of Labor and Agriculture, Securities and Exchange Commission, etc. (Barrett, 2007).

Over the past couple of decades, the adoption of performance management systems in US states rose from 31 in the 1990s to all 50 states in recent years (Melkers & Willoughby, 1998; Gilmour & Lewis, 2006a, 2006b; Cook, 2007). In her study on

performance management practices in the states of Florida, Minnesota, North Carolina, Oregon, Texas, and Virginia, Aristigueta (1999) found all these states to be adopting performance management at varying degrees. Texas and Washington are prime examples of the states where performance management is taken very seriously throughout and enjoys ample support from politicians as well as public employees (Hager et al., 2001; SEIU Report, 2010). Utah and Kentucky make moderate use of this methodology, while states such as North Carolina and California have been found flirting with performance management by adopting, dumping, and re-adopting it under different names and guises (Hager & Hobson, 2001). There are also examples from states such as Arkansas, where the system has not yet been properly implemented (Cook, 2007), and Massachusetts, where the legislature disapproved its adoption (Hager & Hobson, 2001).

Local governments have historically been the front-runners in adopting performance measurement methodology (Williams, 2004), and a staggering 74% of the 88 local governments surveyed by Grizzle (1985) were found to be using performance measurement as far back as the 1980s. Ammons (2001), however, gave a less optimistic figure of 50% of local governments using performance measurement systems, while Melkers and Willoughby (2005) found 50% of the local governments to be making full use of performance measurement and 20% making partial use in their various departments. Through a comprehensive survey on the use of performance measurement systems in local governments, Poister and Streib (1999) found that 38 percent of the cities surveyed make meaningful use of performance measurement systems, out of which 23 percent have central city-wide performance measurement systems.

*1.2.4.    Limitations and Hazards of Performance Management:*

*"In Poland under communism, the performance of furniture factories was measured in the*
*tonnes of furniture shipped. As a result, Poland now has the heaviest furniture on the*
*planet." Report on Business, Globe & Mail (Toronto), August 1996.*

Despite the strong theoretical evidence and pragmatic assumptions in its favor, the use and utility of performance management has not lived up to expectations (Moynihan & Pandey, 2006; Moynihan, 2008; Willoughby, 2004). This scenario might be explained by incrementalism theory, which contests the logic that performance management might have any impact on an agency's performance. This theory suggests that performance information does not matter in making decisions, as organizations evolve through a series of small changes based on their past and political needs, instead of rational performance information (Moynihan & Pandey, 2006).

Another reason for the poor utilization of performance measurement might lie in dialogue theory (Moynihan & Pandey, 2006). According to dialogue theory, people might interpret the same information in their own different ways, and will subsequently differ on the decisions which need to be taken. Ambiguity is an inherent part of an organization, and the various actors present arguments which mirror their own perspectives, hence creating possible disagreements (Moynihan & Pandey, 2006). Hence, the assumption that explicit information coming out of a performance management system will lead to specific decisions does not hold ground.

Heinrich and Marschke (2010) critique performance management systems through the perspective of principal-agent theory, which, ironically, forms an important theoretical foundation for their use. They argue that public programs and their goals are complex

enough to impose the dilemma of setting multiple, difficult-to-measure, and competing targets for the employees. Owing to the fact that agents will focus on the tasks which are being measured, principals will be forced to include a wide variety of such measures in the performance management system, which would complicate the system so much that the system will become essentially ineffective (Heinrich & Marschke, 2010). Performance management system designers cannot fully capture the possible distortions in the system before it is implemented, and the agents might learn about these distortions and short-comings faster, which might lead to a possible gaming of the system (Heinrich & Marschke, 2010).

Radin (2006) provides an extensive analysis of the limitations of performance management systems in the public sector in her book "Challenging the Performance Movement: Accountability, Complexity, and Democratic Values". She points toward problems such as choosing to serve only the customers which the agency knows will increase their performance statistics, gaming the numbers, and focusing on teaching to the test instead of learning in schools. The application of performance management to the accident and emergency units of some hospitals in England, by specifying a four-hour case clearance target, led to perverse behavior as the staff in these departments were found to direct patients to other wards which were not equipped to deal with those patients (Loveday, 2005). Some ambulance services in the UK responded to the setting of response-time targets by measuring time from the moment the ambulance leaves for service instead of measuring the response from receiving the emergency call (Loveday, 2005).

Radin also criticizes some of the basic underlying assumptions of performance management, such as that goals can be clearly defined and attached to actors, outcomes

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can be quantified, data are available, and results can be delivered to and used by an actor with authority. Radin (2006) discusses the objective, numerical, and quantitative nature of performance management, which overlooks the subjective nature of complexity inherent in all social and public programs. A further source of complexity might exist due to the inability of performance management systems to deal with equity issues under the fragmented structure of political power in the US (Radin, 2006). Radin also criticizes the one-size-fits-all approach to implementing performance management systems, which has been used under the New Public Management approach such as the PART and Government Performance and Results Act.

Performance management is a resource-intensive exercise and requires ample staff, support systems, and time for sufficient analysis to yield important information (Leeuw, 2000). Performance measures do not assess the causality of their given results, which is of paramount concern for public managers and policy makers in order to make the appropriate amendments (Hatry, 2006; de Lancer Julnes, 2008). Performance measures, even with all their objectivity, are still imperfect estimators of true performance (de Lancer Julnes, 2008) and are no substitute for experience and human judgment (Moynihan, 2008).

Issues pertaining to the proper identification and measurability of program outcomes are further impediments to the success of performance management (Kelly & Rivenbark, 2003). Outcomes for public services such as national security, health, and provision of justice are extremely difficult to measure owing to their complex social and collective nature (Bouckaert & Balk, 1991; Leeuw, 2000). Furthermore, public organizations often work to achieve many contradictory goals at the same time, which further convolutes the possibility of effective performance management (Dixit, 2002). The

use of output and process measurement as surrogates for hard-to-measure outcomes can be misleading and may have validity and inaccuracy problems; for example, hours of patrol is a relatively easy-to-measure output of police effort but might not translate into the desired outcome, such as reduction in crimes committed (Bouckaert & Balk, 1991; Hatry, 2006; de Lancer Julnes, 2008; Poister, 2003).

Performance management has been found by some scholars (Leeuw, 2000; Smith, 1993) to have undesirable impacts on organizations, while a belief in the prowess of quantitative measures to bring performance improvement has been termed as naïve by others (Bouckaert & Balk, 1991). Strict adherence to the pursuit of performance management could lead to a fixation on a handful of measures by public managers, resulting in a narrow focus on the measures rather than on the broader government goals, which might even lead to perverse behaviors (Smith, 1993; Leeuw, 2000; Fitz-Gibbon, 1997; Bouckaert & Balk, 1991). The desire to improve performance might lead to further tightening of performance targets, which might decrease innovation and trust by forcing the measured entity to become confirmative and prescriptive (Caulkin, 2009). Some performance measures can even be misleading or become irrelevant with time and lead decision-makers to make wrong choices (Bouckaert & Balk, 1991; Meyer & Gupta, 1994; Leeuw, 2000).

Barnow and Heinrich (2010) explore the various reasons due to which performance management systems might not be suitable for improving organizational performance. They raise concerns about the way performance of organizations is measured, as many of the variables which have an impact on organizational performance but are independent of the control of public managers might be either left out of the analysis or might be just too

many to be included in the analysis (Barnow & Heinrich, 2010). They point to the fact that there are still no established statistical methods which would help us deal with the omitted variable bias. The comparison of performance results across organizations is another important issue, as all organizations work in different environments and have their own dynamics which need to be taken into account, hence impeding a general comparison (Barnow & Heinrich, 2010). Furthermore, some organizations might keep their performance targets higher than others on purpose, which defeats the purpose of more equitable implementation and comparison of performance across organizations (Barnow & Heinrich, 2010). The positivistic and technical nature of most performance targets and indicators has also been cited by scholars as a limitation to successful performance measurement system implementation (Barnow & Heinrich, 2010).

Scholars (e.g., Poister, 2003; Hatry, 2006; Bouckaert, Van Dooren & Balk, 2010) have recommended many practices to help us rectify the limitations and hazards of performance management, which lead to its limited use and ineffectiveness. Following recommended practices is meant to increase the effectiveness and use of performance measurement systems (Cormican & O'Sullivan, 2004; Battor et al., 2008; Newell et al., 2003).

1.3. <u>Recommended Practices – Where Do They All Come From?</u>

Practices recommended by scholars to improve public management systems mostly come from case studies, quantitative analyses, or books written on a particular field of management (Reijers & Liman Mansar, 2005; Martin, 1978; Golovin, 1997). As far as case studies are concerned, scholars or research teams pin down a particularly well-performing organization out of many others in a specific area, and try to find out what that organization

does differently in order to yield better results than its counterparts (Reijers & Liman Mansar, 2005). Scholars also engage themselves in surveys and interviews with managers and other senior researchers to identify the practices which could lead to the desired outcome, and collect their findings in the form of recommended practices (e.g., see Cormican & O'Sullivan, 2004).

Some business and public organizations conduct studies on their own management processes and try to identify the practices which produce the most desirable results through benchmarking with other organizations in the same domain (Zairi & Ahmed, 1999; Camp, 1989; Spender, 2008). Every employee working in an organization has the potential to identify the recommended practices to make their job more effective and efficient (Spender, 2008; Furlong & Salisbury, 2005), and the process of employee interaction in order to exchange information involves a lot of communication, negotiation, and sense-making (Gherardi & Nicolini, 2000; Cook & Brown, 1999; Weick, 1995). Such an interaction of organizational actors combined with their troves of knowledge results in the creation of a general knowledge base for the recommended practices (Newell et al., 2003; Gherardi & Nicolini, 2000; Cook & Brown, 1999; Weick, 1995).

Professional organizations also instigate research in their affiliated organizations and members to find recommended practices in their particular fields (e.g., see Barczak et al., 2009). In the public sector, examples of recommended practices development can be seen sparingly in the literature. The recommended practice collection program initiated by the English Department of Educational and Skills (DfES) between 2000 and 2003 is one such example. As a part of the program, public school teachers were awarded scholarships

to compile recommended practices in teaching and school management processes (Furlong & Salisbury, 2005).

Most of the recommended practices in management, though, emerge through a network and interaction of scholars, practitioners, job experiences, educational levels, and professional organizations (Paauwe & Boselie, 2005). Organizations, employees, and scholars evolve with time by reacting to their environments, which gives rise to certain practices aimed to avoid or benefit from internal and external situations and events (Paauwe & Boselie, 2005).

The collection and compilation of recommended practices in management through the available literature and research is also a very common practice in the development of a unified recommended practices structure. Battor et al. (2008), for example, compiled management practices in fields such as customer relations management, vision development, and knowledge sharing, which had already been evaluated for effectiveness by other researchers, and collected them all under one roof to give a complete picture of recommended practices in organizational management which could yield better organizational performance.

**CHAPTER 2: LITERATURE REVIEW**

2.1. Impact of Recommended Practices on Organizational Performance

Fast-learning organizations which absorb the effective recommended practices sooner than others perform better and gain a competitive advantage over their counterparts because of early adoption (Zahra & George, 2002; Zott, 2002). In their model showing the impact of the adoption and implementation of the effective recommended practices on organizational performance, Zahra and George (2002) argue that the more an organization acquires, assimilates, and exploits these practices, the more likely it will be to perform better than other organizations. This view is also supported by researchers such as March (1991), Liebeskind (1996), Zott (2002), and Prahalad and Hamel (1990).

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┌─────────────────┐      ┌─────────────────┐      ┌─────────────────┐
│  Early Adoption │      │ High Assimilation│      │    Increased    │
│   of Effective  │ ──▶  │  and Exploitation│ ──▶  │  Organizational │
│   Recommended   │      │  of Recommended  │      │   Performance   │
│     Practice    │      │     Practice     │      │                 │
└─────────────────┘      └─────────────────┘      └─────────────────┘
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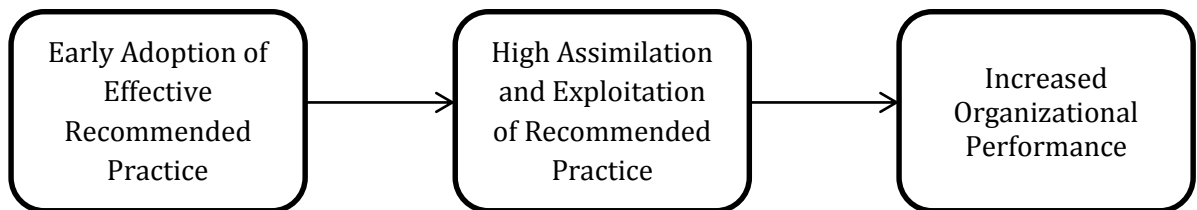
Figure 2: Pathway of the Impact of Recommended Practice Impact on Organizational Performance.

The notion that the use of recommended practices yields better performance in organizations is supported by many theories such as the organizational learning paradigm (Huber, 1991), the dynamic capabilities view of firms (Mowery et al., 1996), the knowledge-based view of firms (Grant & Baden-Fuller, 1995; Conner & Prahalad, 1996), and the resource-based view of organizations (Barney, 1991; Robins & Wiersema 1995; Peteraf, 1993; Wernerfelt, 1995; Barney, 2001; Szulanski, 1996). These theories suggest that the difference between low-performing and high-performing organizations lies in the

ability of better-performing organizations to adopt new methodologies and management processes, gain superior knowledge, and hence gain a competitive edge (Kim, 1998; Beer, 1972; Douglas, 1986; Sandelands & Stablein, 1987; Teece et al., 2005; Teece & Pisano, 1994).

Organizations which adopt recommended practices lead other organizations in terms of performance as they can better read the changes in their environments and make internal changes sooner and hence can take full advantage of the new situation or save themselves from possible adversity (Zahra & George, 2002; Lei et al., 1996). Furthermore, as the recommended practices are routinized, organizations gain experience in handling them effectively and efficiently, which reduces the need for them to invest in frequent changes (Zahra & George, 2002; Teece et al., 2005; Zott, 2002).

## 2.2. Evaluation of Recommended Practices

*There is nothing quite so useless as doing with great efficiency that which should not be done at all.*

–Peter Drucker

Evaluation of recommended practices in public management can be defined as "the selective observation of a set of exemplars across different contexts in order to derive more generalizable principles and theories of management" (Overman & Boyd, 1994, p. 69). The evaluation of recommended practices and advice has been an area of key interest in the research realm in the past decade. As recommended practices are compiled over time in any field, it becomes important to separate the good ones from the ineffective ones. As shown in the previous section, recommended practices emerge through books, experience, networks, research, and case studies. Not only can these recommendations be faulty and

weak, they can also become irrelevant with time or work only in specific conditions (Bracmort, et al., 2004; Newell, Edelman, et al., 2003). Hence it is important that the effectiveness of recommended practices is evaluated in order to save resources, enhance the literature, verify previous findings, and extract better results for organizations (Lurey & Raisinghani, 2001).

### 2.2.1. *The Role of Theories in Recommended Practice Evaluation:*

Overman and Boyd (1994) find the genesis of recommended practices evaluation in public organizations in post-bureaucratic reform theory. The theory as presented by Elaine Kamarck (2007) in her book *The End of Government … As We Know It: Making Public Policy Work* states that the future belongs only to small and innovative governments with skilled and talented employees (Wang, 2007). According to Overman and Boyd (1994), public management research evaluates best practices under the influence of post-bureaucratic reforms, and aims on creating a "customer-driven, value-focused, entrepreneurial, market-oriented" government (p. 67).

While post-bureaucratic reform theory might provide us justification for recommended practices needing to be evaluated, all the methods of recommended practice formulation have one basic flaw: These methods are theoretically self-validating due to their experimental, and thus, inductive nature (Overman & Boyd, 1994). Since most of the recommended practices emerge through observation and serve a very practical purpose of improving practice, little emphasis is given to the theoretical underpinnings behind the recommendation (Overman & Boyd, 1994). In order to fill this gap, I have linked the recommended practices to goal-setting theory such that the analysis can be grounded under a theoretical framework.

### 2.2.2. *Previous Evaluations of Recommended Practices in Management:*

Barczak et al. (2009) investigated the effectiveness of recommended practices in management in business organizations through case studies and found them to be effective. Lurey & Raisinghani (2001) evaluated the recommended practices employed by several US companies in order to manage virtual teams. Through a qualitative study involving 67 individuals across 12 teams, they found that the teams that used more of the recommended practices performed better that the teams which made less use of these practices.

Many case studies have been conducted by scholars in the business and public sectors to evaluate the effectiveness of management recommended practices on organizational performance (e.g., Schiffauerova & Thomson, 2006; Christmann, 2000; Reijers & Liman Mansar, 2005), and a positive picture of the effectiveness of recommended practices has emerged as these studies usually agree on the potency of such practices on organizational performance.

Cooper (1998) evaluated the recommended practices pertaining to quality, resource commitment, management commitment, teamwork, culture, and linking strategies to resources used to develop new products in 161 business industries in the US, Germany, Denmark and Canada, and found these practices to have a positive impact on organizational performance. Through a meta-analysis of the literature and a subsequent survey, Schiffauerova and Thomson (2006) found that the companies who adopted recommended practices in quality costing techniques fared better in reducing the cost of bringing quality to their products. The recommended practices, however, need to be altered to fit the internal and external context of the organization (Schiffauerova & Thomson, 2006).

The above discussion suggests that the evaluation of recommended practices is a growing concern in the field of organizational management and is supported by theories and scholarly assertions. Many studies, both qualitative and quantitative, have been carried out to evaluate the impact of the use of recommended practices in the past and have shown that the use of recommended practices has a positive impact on organizational performance. It can be observed that organizations that adopt recommended practices earlier and/or use them with a higher intensity compared to others show better performance. There are, however, no such studies carried out in the literature to evaluate the recommended practices for performance management systems, another gap which I intend to fill with this dissertation. I am using local police agencies as my target population.

2.3. Target Population – Local Police Agencies in the US

Implementation, use, and the success of performance management systems are considered to be complicated and daunting for police agencies due to their inherent structures (Ashby et al., 2007). Police agencies have to maintain a balance between the demands of the community, social justice, organizational flexibility, budgeted resources, accountability, fairness, efficiency, and effectiveness (den Heyer, 2011). While a majority of police agencies use performance management systems (Andersson & Tengblad, 2009; Van Sluis et al., 2008; DeLorenzi et al., 2006), there are many problems that have accompanied their use, such as abuse of authority, increased sense of marginalization among minority communities, and data manipulation (Ashby et al., 2007; den Heyer, 2011). It is presumed that better performance management systems can be designed based on recommended practices, which would help improve organizational performance, in part,

by reducing some of the limitations and hazards caused by the systems. I am testing this claim in this dissertation.

Police agencies serve as a suitable target population for this study, as there is objective performance data available on police performance in terms of crime rate statistics, through the UCR database. The UCR provides a ready source of determinants of police performance, which we can compare with the extent to which police agencies use recommended practices to design and implement their performance management systems.

### 2.3.1.    *Police Structure and Reforms in the US:*

Police departments in the US are divided on a state, local, and special purpose basis (Reaves, 1992). In this study, I will focus on local police departments, divided at the city and town level across the US. These departments are governed under their respective city or town governments, with a singular police chief managing both uniformed officers and civilian employees.

The traditional police structure is based on Frederick Taylor's scientific management and Max Webber's model and hence emphasizes efficiency, orderliness, output, and bureaucracy (Thibault et al., 2004). Historically, police agencies had paramilitary-like, rigid, centralized, and bureaucratic structures with defined authority, responsibility, and communication, while being largely isolated from the community (Coleman, 2008; Trojanowicz & Bucqueroux, 1990).

Police agencies, however, are gradually evolving into more organic systems by adopting various proven and unproven methods in order to stay competitive and relevant in an ever-changing environment. Police establishments across the US are becoming

increasingly diverse with the induction of more women, minority, and gay officers (Mastrofski, 2006; Thibault et al., 2004). Furthermore, these agencies are spending large amounts of resources to encourage their officers to attain a college education and undergo professional training (Mastrofski, 2006). They are also trying to improve their data collection and analysis techniques (Weisburd & Braga, 2006; Mastrofski, 2006), which has shifted their focus from abstract, general, and complex management styles to more data driven and precision-based methods (Manning, 2006; Mastrofski, 2006).

Some police reforms, such as community policing, require police to embrace new functions such as community organization in their job description, while a shift in public focus on anti-terrorism activities has led local police forces to work more closely with other local and federal law enforcement agencies as well as with the fire, medical, transportation, communications, and infrastructure establishments (Mastrofski, 2006). An increase in the immigrant population, which is largely unfamiliar to the established social network in the US, and who speak different languages and are uprooted from their own communities, is also impacting the way police agencies carry out their jobs (Mastrofski, 2006).

With the increasing complexities and sophistication in addressing crime and public concerns about their efficiency and effectiveness, police departments are moving toward management reforms to improve their performance levels (Walker, 1977; Shane, 2010; Reiss, 1992). Management reforms have been carried out in the police force due to pressures on the police to respond to constraints on public expenditures (Levine, 1985), changing sociological standards (Brunetto & Farr-Wharton, 2005), changes in the public's perception about social behavior and police behavior (Fleming & Lafferty, 2000; Bryett, 1999; Leishman et al., 1995, Brunetto & Farr-Wharton, 2005), control of the police force

(Johnston, 1988), a need to inculcate professionalism (Kingshott, 2006), and to demonstrate cost-effectiveness to the public (Butler, 1992). Everything from structural changes to the induction of corporate strategy has been applied (Moore & Stephens, 1991), resulting in transforming the dynamics of police services from a dominantly professional and bureaucratic approach to one which incorporates community needs and development of strategies to solve public problems (Kelling, 1992; Langworthy & Travis, 1999).

Adoption of management techniques such as Management By Objectives, Program Evaluation and Review Techniques, Organizational Development, Zero-Based Budgeting, and Programming, Planning, and Budgeting has been occurring in the police departments under the systems-management approach since the 1960s (Thibault et al., 2004). Since the last three decades, however, proactive police management is taking over the systems management approach in police departments (Thibault et al., 2004). Proactive police management ensures that police departments focus on crime prevention, are committed to community involvement, use diverse crime control techniques, employ specialists rather than generalists, adopt modern communication and budgeting technology, plan on emergency and crisis management, consult stakeholders, and make use of data (Thibault et al., 2004). Performance management remains an integral part of both systems-management and proactive-police-management approaches, but not so much for the traditional police management approach.

Proactive police management includes reforms such as community-oriented policing and problem-oriented policing. While community-oriented policing focuses on encouraging the public to share responsibility for public safety (Geller et al., 1995; Kuykendall & Roberg, 1982; Rosenbaum & Lurigio, 1994), problem-oriented policing

works to eliminate the conditions that generate problems (Bayley, 2008). There are many other approaches adopted by police agencies to lower crimes. Signs-of-crimes policing reforms adopted the strategy to prosecute minor offenses (Bayley, 2008), and hot-spot policing methods involved episodic concentrations of police in one area or situation (Bayley, 2008). Similarly, the CompStat program shifted the focus of police agencies from output measurement to outcome measurement for police efforts (Bayley, 2008). Some police agencies adopted management practices from the private sector such as project management (Karlsen et al., 2007), information technology (Luen & Al-Hawamdeh, 2001), and balanced score card techniques (Greasley, 2004). These reforms mostly focus on enhancing localism, establishing community engagement, citizen-focused service delivery, and improving neighborhood police services (Bayley, 2008). These reforms have helped shift the focus of police performance from the utilization of inputs to the production of better outputs and outcomes (Coleman, 2008).

Management reforms help the police departments cope with over-centralization, unjust resource allocation to more politically powerful units, and decision paralysis (Levine, 1985), and increase their integrity, leadership, flexibility, respect, support, and professionalism (Metz & Kulik, 2008). They have lent an inculcation of flexibility, learning, and citizen-friendly values in the police force (Hodgson, 2001). Some scholars, however, argue that the impact of these management strategies on police performance is not as yet empirically determined (Terpstra & Trommel, 2009).

### 2.3.2.    *The Role of Police Chiefs in Setting Management Strategies:*

In the US, police departments have always enjoyed a fair amount of operational independence, which leads to diversity among the various police departments in terms of

their organizational structures and responsibilities (Bayley, 1996; Goldstein, 1977). Police agencies appoint and measure performance of their chiefs in dissimilar ways (Mastrofski, 2006). Police chiefs are appointed and removed based on crime rates under their respective jurisdictions, changes in the political regimes, and the emergence of scandals and crises (Mastrofski, 2006). In most agencies, the chiefs are elevated through the ranks, while some police departments prefer bringing their chiefs from the outside (Mastrofski, 2006). There is also remarkable variation in the education levels, training, work experience, and exposure to professional, business, and higher education organizations the chiefs of different local police departments might have (Mastrofski, 2006).

The introduction of technology, telephone services, CCTV cameras, automobiles, and information technology in police agencies has shifted the role of police chiefs from being proactive commanders to overseers, while the departments function on auto-pilot management (Mastrofski, 2006). Call-for-service systems such as 911 have restricted the ability of police chiefs to deploy their force in a pre-planned and strategic manner (Mastrofski, 2006), and have forced them to adopt other means such as community policing by organizing groups of citizens to work with the police agency. More discretion given to officers on the ground changed the nature of the relationship traditional police chiefs had with their officers in terms of controlling, constraining, and guiding them (Mastrofski, 2006). Police chiefs are also wrestling with increased notions of accountability as elected representatives, the media, and criminal courts regularly scrutinize police policies, practices, and procedures, especially for cases which attain some sort of notoriety due to human rights or other violations (Moore & Braga, 2003).

Coleman (2008), however, observes that police agencies have failed to successfully incorporate these management reforms within their structures. The adoption of new policing methodologies requires the establishment of a comprehensive strategic management and results-based performance management regime. Coleman (2008) found the adoption of these systems wanting in Canadian local police agencies, while the police chiefs of these organizations were found to have insufficient skills and knowledge to implement them.

Most of the management reforms in the police services have come from outside the police force through a top-down process (Bayley, 2008). The police department leadership, thus, plays a vital role in communicating the reforms across the organization, and ensures lower-level management support in order to successfully implement these reforms (Berg et al., 2008; Brunetto & Farr-Wharton, 2005). To make the reforms successful, police leadership has employed several methods such as peer group network methodologies (Butterfield et al., 2005; Leishman et al., 1995). Furthermore, police chiefs are responsible for increasing cooperative behavior among their subordinates and helping fulfill social security, self-esteem, and autonomy requirements of the police organization (Thibault et al., 2004).

Given the importance of their role in the establishments of management reforms, I will send surveys to police chiefs to ascertain the level of the use of recommended practices in designing and implementing performance management systems in their respective agencies.

*2.3.3.    Performance Management in Police Agencies:*

Performance management is one of the many tools used by police departments to reform their practices and procedures in order to improve their performance, and its adoption is increasing in police departments across the US (Karlsen et al., 2007). Before discussing performance management systems in the US, I review existing research on the implementation of these systems internationally.

As an integral part of the New Public Management (NPM) reforms, performance management has found its way into police departments in countries like the US, UK, Australia, and Netherlands (Butterfield et al., 2004; Andersson & Tengblad, 2009; Ashby et al., 2007; Cope et al., 1997).  Although widely applied, NPM reforms have faced resistance from police agencies, and sometimes have even been found to encourage police departments to embrace a more traditional work role, which means being event-driven and focusing on emergency response (Andersson & Tengblad, 2009; Leishman et al., 1995; Thomas & Davies, 2005). Some scholars question the success of NPM in police departments compared to its success in other type of government systems (Ashby et al., 2007).

Performance management under the name Policing Performance Assessment Framework is used by competent authorities in the United Kingdom (UK) to better manage local police departments (Van Sluis & Cachet, 2007; Collier, 2006). These systems enjoy ample political support, as they help the government to demonstrate its achievements backed with solid evidence (Loveday, 2005b). The system took its roots in the mid-1990s and has been expanding since each subsequent government (Maillard & Savage, 2012). The British performance management system is characterized by a high level of

centralization, strong performance-based accountability systems, and the use of an elaborate and complex set of performance measures (Maillard & Savage, 2012). The government emphasizes an increase in the monitoring of police performance through explicit indicators for both local and national levels, which can be compared with other agencies (Maillard & Savage, 2012). Some police agencies in the UK were also found to engage in unethical methods to cope with performance management systems (O'Byrne, 2001). The Surrey police department, for example, adopted perverse methods such as making bogus calls to look good on performance measures for problem resolution indicators (Loveday, 2005b), while the Greater Manchester Police was found to employ devious means in order to encourage criminals to admit the crimes they never committed and hence improve their clearance rate statistics (Loveday, 2006).

Contrary to the perceptions of overzealous performance management in the UK police agencies as portrayed above, Mackenzie and Hamilton-Smith (2010) argue that performance targets have been rather non-ambitious and easy to meet and hence have not contributed to decrease in overall crime rates. They further point toward the insufficiency of data collection methods in UK police departments to properly measure the various types of organized crimes. Due to the difficulties in measuring organized crimes such as drug trafficking, the police rely on indicators of the number of arrests and convictions, which might not have the desired impact on the reduction of these crimes in society due to the ability of these groups to operate from within prisons (Mackenzie & Hamilton-Smith, 2010). Hence, the measure of the supposed disruption of illegal activity does not translate into actual crime reduction (Mackenzie & Hamilton-Smith, 2010).

The application of performance management systems in police services in France, however, did not introduce radical changes in organizational structures or characteristics as witnessed in the British system (Maillard & Savage, 2012). The inherent secrecy of performance information pertaining to the various police agencies makes it extremely hard to compare their performance, and an absence of a body to audit police performance and take action leads to a weak application of the system (Maillard & Savage, 2012). Performance management practices in France are often used as political tools to show the public that the national government is interested in the affairs of local administration and their security (Maillard & Savage, 2012).

In Germany, the government introduced performance management reform models in certain parts of the country, and performance indicators for police departments were linked to their management strategies and administrative processes in order to improve the overall effectiveness of these departments (Van Sluis et al., 2008). Belgium presents another example where performance management, as a part of New Public Management, was employed to regain the lost legitimacy of police departments after several untoward incidents (Van Sluis et al., 2008). In the Netherlands, the national government adopted result-based agreements with local police departments in 2003 under the influence of NPM (Van Sluis et al., 2008).

Coming back to the US, Poister and Streib (1999) found that only 230 out of 640 cities used performance management in their police departments. 77.8 percent of police departments had performance measures for workload or output, 32.2 percent had performance measures for unit cost or efficiency, 64.8 percent had performance measures

for outcomes or effectiveness, 56.5 percent had performance measures for service quality, and 53.0 percent of police departments used performance measures of citizen satisfaction.

CompStat is arguably the most talked about performance management methodology in the US. It was first adopted by the New York Police Department (NYPD) in the mid-1990s and has spread rapidly to other police departments and functions across the country since (Willis et al., 2007; Bratton & Malinowski, 2008; Van Sluis et al., 2008; Walsh, 2001). Inspired by NPM methodology, CompStat is essentially an information dissemination system which provides real-time crime rates to police officers and tracks the efforts adopted to deal with crime (Weisburd et al., 2003; Walsh, 2001; Moore & Braga, 2003). Regular meetings are held where the police captains and leaders explain poor performance on the measures to city police chiefs, mayors, and council members, and proposals are submitted to improve performance (Weisburd et al., 2003; Walsh, 2001; Moore & Braga, 2003).

The CompStat model aims to ensure that local police officers are aware of the crime situation in their areas and are held accountable for performance, which helps decrease indolence and apathy among them (Shane, 2000; Loveday, 2005b). This model has helped police chiefs to transfer responsibilities and enhanced discretion capabilities to mid-level police officers in complex situations where rapid actions are sometimes needed (Shane, 2000; Whisenand & Ferguson, 1996). The relief from micromanagement has provided more opportunities for police chiefs to focus on policy-related issues rather than on day-to-day management (Shane, 2000). Performance management practices offer managers ways to cope with an increasingly egalitarian culture in police departments by holding

subordinates responsible for their performance and giving them appropriate discretion to improve performance on important metrics (Shane, 2000).

The CompStat methodology was cited as the primary reason for a substantial crime drop in the city of New York, even when demographics, unemployment, and other social and economic factors in the city would suggest that crime rates should have increased during the time of its implementation (Bratton, 1999; Bratton & Malinowski, 2008). Owing to its excellent performance, the adoption of CompStat in police departments in the US is widespread to the extent that 58 percent of large police agencies across the country had either adopted or were thinking of adopting a program similar to CompStat in 2006 (DeLorenzi et al., 2006). Based on the success of CompStat, the NYPD decided to implement the same methodology to manage traffic under the name of TrafficStat, which helps identify road conditions, ensure their correction, and increase public safety (Anemone & Spangenberg, 2000). The TrafficStat methodology was reported to bring a 28 percent decrease in traffic fatalities within one year of operation (Anemone & Spangenberg, 2000).

The city of Baltimore, Maryland, adopted the CompStat methodology from New York, applied it to all the city agencies, and named it CitiStat (Behn, 2008), while cities such as Philadelphia, Pennsylvania, Lowell, Massachusetts, and Detroit, Michigan, have a CompStat-like system in place to manage their police departments (Dorriety, 2005; Geoghehan, 2006). In 2002, the state of Washington adopted a police management program called Washington State Patrol (WSP), which is also based on New York's CompStat (Serpas, 2004). The WSP program also encompasses the fire marshal's office and child clearinghouse in its ambits, and has brought efficiency in police operations as well as a

higher level collaboration among the various police divisions within the state for an effective impact on the overall crime in the state (Serpas, 2004). The Metropolitan Nashville Police Department in Tennessee adopted the CompStat methodology, only to be accompanied by a randomized audit system where crime victims are selected at random and interviewed in order to ascertain if police reports are being accurately filed by the officers or not (Serpas & Morley, 2008). Similarly, the city of Minneapolis, Minnesota, adopted CompStat under the name Computer Optimized DEployment–Focus On Results (CODEFOR), which helped them achieve a double-digit percentage crime decrease between 1998 and 1999 (Eterno & Silverman, 2010).

In 2003, Los Angeles adopted the CompStat methodology under the name CompStat Plus to better manage its police force (Bratton & Malinowski, 2008). CompStat Plus included additional components such as conducting diagnostic exercises to determine the causes of poor performance, establishing focused dialogues among the stakeholders to reach conclusions, and giving the affected police officers the discretion to chalk out their own plan of action (Bratton & Malinowski, 2008). The adoption of CompStat proved to be highly successful in Los Angeles, as crimes dropped by 4% and homicides dropped by 21% in the first year of the implementation of the program, a trend that continued for at least another six years, while crime rates in the rest of the country did not show any such decrease (Bratton & Malinowski, 2008; Schick, 2004).

The adoption of the CompStat methodology by the Columbia, South Carolina, police department was found to have a positive impact on the ability of police officers to collect and disseminate crime-related information, and was found to generate a 13 percent decrease in violent crimes and an 18 percent decrease in property crimes reported in the

city since the establishment of the program (Crisp & Hines, 2007). Although CompStat was developed for a large police department, the NYPD, even smaller cities such as Gardena (California), Tuscaloosa (Alabama), and Paradise Valley (Arizona) have successfully implemented CompStat and reduced crimes (Burnett, 2007; Dorriety, 2005; Wintersteen, 2007). In the state of Florida, CompStat was adopted under the name PowerTrac in Broward County and STOP CRIME in the city of Plantation (DeHaven-Smith & Jenne, 2006; Larsen, 2002).

In the late 1990s, Australia adopted CompStat for its police agencies under the name Operational Performance Review within their overall strategic plan for crime control, called the Operation of Crime Review Panels (Chilvers & Weatherburn, 2004; Mazerolle et al., 2007). There were, however, certain modifications made to the original NYPD CompStat. For example, New South Wales Police Services did not use the zero-tolerance method applied by the NYPD in conjuncture with CompStat (Chilvers & Weatherburn, 2004). The officers were urged to focus on high-crime places, search for illegal weapons, and arrest known repeat offenders (Chilvers & Weatherburn, 2004). As a result, the number of known criminals arrested by the police increased by 30% within two years, while the prison population also increased simultaneously. Other crime statistics such as robberies, home break-ins, motor vehicle theft, assault, and sexual assault dropped significantly (Chilvers & Weatherburn, 2004). The province of Queensland, Australia, adopted CompStat for police departments in all its districts, but only a few districts showed a drop in crime, and even within those districts, only a certain number of police divisions showed improvement (Mazerolle et al., 2011).

Some scholars, however, do not agree with the proposed benefits that performance management systems might bestow on police agencies. They argue that police departments will revert back to regular policing methods as the focus of the public will move away from accountability and people will learn about the vices of the performance measurement system (Hoogenboezem & Hoogenboezem, 2005). Through a study on local police agencies in Canada, Mastrofski (2006) argues that although performance management systems such as CompStat are adopted and implemented in these departments, they are not effectively used and applied. Crisp and Hines (2007) point toward the difficulties in restructuring organizational culture and modus operandi in police departments in order to establish a viable performance management methodology. Most of the police agencies which adopted CompStat techniques under the influence of their success in New York were found to possess only superficial knowledge about the system (Eterno & Silverman, 2006).

Other scholars have reported their concerns about a dramatic increase in citizen complaints of abuse of authority and violations of human rights by police personnel after the implementation of CompStat in New York (Eterno & Silverman, 2006). There was also a reported increase in the sense of alienation within minority communities, while the NYPD was found to change its tactics from being a service-oriented entity to one focused on making arrests and issuing summons under the influence of CompStat (Eterno & Silverman, 2006). Police organizations following the CompStat methodology were found to be more centralized and top-down in their approach to organizational management, which further increased their isolation from the communities they were supposed to serve (Eterno & Silverman, 2006).

Police captains were reported to experience fear, embarrassment, and humiliation and feel under pressure during their presentations, and would look for excuses to escape those meetings (Eterno & Silverman, 2006; Martin, 2003; Eterno & Silverman, 2010; Marzulli & O'Shaughnessy, 2000). The executives were found to blame poor performance entirely on lower ranks while taking all the credit for good performance themselves (Eterno & Silverman, 2006). The CompStat methodology failed to increase motivation among most of the low-ranking officers, while it is only a few officers who changed the approach to their job, helping increased the overall performance results of the department (Eterno & Silverman, 2006).

Scholars also raised concerns about possible deliberate inaccuracies in data entry for law enforcement statistics in order to look good on the measures (Long & Silverman, 2005; Manning, 2001; Willis et al., 2003b). Crime statistics being the primary source of performance evaluation might urge police officers not to seek crime victims actively or even cause them to refuse to take complaints from victims so as to keep their crime rates low (Eterno & Silverman, 2010). It was also reported that between the years 2003 and 2005, a substantial number of felonies committed in New York were converted to misdemeanors by police officers in order to hide the true crime situation and show improved performance (Eterno & Silverman, 2010).

Other examples of perverse data fudging have been observed in Philadelphia (Pennsylvania), Atlanta (Georgia), New Orleans (Louisiana), and Broward County (Florida) (Webber & Robinson, 2003; Eterno & Silverman, 2010). Such inaccuracies in data might show an untrue picture of the effectiveness of CompStat and other performance management systems. These concerns, however, were not found to be true in a random

audit of the Metropolitan Nashville Police Department in 2005, where 99 percent accuracy was found in the reports prepared by police officers (Serpas & Morley, 2008).

Scholars have also questioned the claim of CompStat to be an exclusive and powerful tool for crime reduction, as other techniques such as San Diego's community policing, San Francisco's alternative sentencing and community support methodology, Boston's Operation Ceasefire, and Richmond, Virginia's Project Exile, were found to be at least as effective as CompStat strategy (Greene, 1999; Rosenfeld et al., 2005).

The verdict on the effectiveness of performance management systems for police departments is still out. While some scholars argue that performance management helps improve police performance, others point toward the harmful impacts of this system. Most of the concerns cited above about the implementation of performance management strategies in police departments, however, relate to the limitations and hazards of performance management systems in general. For example, a major concern that we have seen with the CompStat systems is data manipulation. One of the recommendations given in the literature to deal with this issue is to involve lower-ranking police staff in specifying the targets and units of measurement (Bratton & Malinowski, 2008; Butterfield et al., 2004; Burnett, 2007).

I propose that by following the recommended practices in designing and implementing performance management systems in police agencies, we can reduce the harmful impacts of the system and strengthen its positive impacts, and thus improve the performance of police agencies.

2.4. <u>Recommended Practices for Performance Measurement Systems</u>

Scholars have provided a wide array of recommended practices to design and implement performance management systems. Not only are the recommended practices extensive and haphazard, they are also at times in conflict with each other. It is, hence, a challenging exercise to isolate meaningful and potent recommended practices. Given the expanse and diversity of recommended practices in the performance management literature, it is necessary that I define a certain selection criteria.

First, I collected the most popular recommended practices for designing and implementing performance management systems in the general public management literature (the number of such practices was 22). Subsequently, I searched references for each of these practices in the police management literature to make sure the chosen practices are relevant to police agencies. I only found half (11 of 22) of these practices to have strong references in the police literature. Although the other practices also had references supporting their use, they were not as strong, recurring, and essential in police literature. In the interest of keeping this project practical, I only focused on these eleven practices.

Given that goal-setting theory is closely related to performance management and provides us a structure to design and implement performance management systems, I used the four components of goal-setting (clarity, challenging, commitment, and feedback) as the theoretical framework, and tried to link the eleven recommended practices to these components. Nine out of these eleven recommended practices could be linked, which shows that goal-setting theory resonates with the recommendations in the police literature and provides a strong theoretical framework to ground these practices upon. A description

of the eleven recommended practices, their relation to goal-setting theory, and reasoning for their positive impact on police performance is provided below:

### 2.4.1.  *Specific Targets:*

Target specificity is considered to be both an important recommended practice in the police literature and a fundamental component of performance management systems in this area. Police Chief William Bratton, for example, provided a guideline for his CompStat system to include targets which measure the exact percentage drop in specific categories of crime by a deadline, e.g. 3% drop in burglaries within six months (Bratton, 1998). Similarly, in the report *Law Enforcement Tech Guide for Creating Performance Measures That Work: A Guide for Executives and Managers*, issued by the Office of Community Oriented Policing Services, US Department of Justice, Roberts (2006) suggests that performance targets should include quantification, e.g. "In FY 2004, reduce Part 1 violent crime by 2% over previous fiscal year". Other police scholars such as Shane (2000) and Moore and Braga (2003) cite the clarity of performance targets in performance measurement systems as having a positive impact on police performance.

Goal or target specificity falls under the *clarity* component of goal-setting theory. According to goal-setting theory, goal clarity helps increase organizational performance and the likelihood of the achievement of organizational goals (Locke, 1996; Kenis, 1979; Latham & Yukl, 1975; Steers, 1976; Ivancevich, 1976). Specific goals help direct the energies of the employees and the agencies toward the desired directions and in specific amounts, rather than being scattered and diffused among necessary or unnecessary activities (Carroll & Tosi, 1973). Setting clear goals and targets helps organizations eliminate confusion, tension, stress, goal displacement, subjective interpretation, and

dissatisfaction among employees, and increases their commitment toward organizational goals (Kenis, 1979; Elovainio & Kivimäki, 1996; Katz & Kahn, 1978; Latham & Yukl, 1975; Steers, 1976; Ivancevich, 1976).

Specific goals are less ambiguous about what is considered to be high performance (Locke & Latham, 1990a). Having clear targets with specific time limits helps suppress competing goals and interests as well as helping individual employees' attention converge in one direction, which is positively related to team and organizational effectiveness (Bang et al., 2010; Carroll & Tosi, 1973). Hence, the more clearly goals and targets are defined, the less variance in performance will be experienced (Locke, 1996). The targets should be kept as clear and simple as possible, and any interpretative, evaluative, or priority ambiguity should be avoided (Boyne, 2006). Furthermore, specific goals help subjects evaluate the probability of success more deftly than for vague goals (Carroll & Tosi, 1973).

Some scholars like Seijts and Latham (2001), however, attach some conditions for the success of specific goals. They hypothesized that specific goals yield lower performance than "do your best" when employees lacked the required knowledge, while specific learning goals fare better in such situations based on the studies and findings by Earley et al. (1989), Kanfer and Ackerman (1989), and Winters and Latham (1996). A persistent effort to attain specific goals in the learning stages directs the resources to goal achievement rather than learning (Kanfer & Ackerman, 1989; Latham & Locke, 2007).

The general public management literature is nevertheless supportive of the use of specific targets. Poister and Streib (1999), for example, asked the city managers across the US if the performance targets used in performance measurement systems, including for

their police departments, are clear and unambiguous. Through a meta-analysis of the literature on Performance Based Budgeting (PBB), Hagar and Hobson (2001) found that the clarity of performance targets is an important factor in ensuring a successful PBB system. Grizzle (1985) included the clarity of targets as an essential component of a good performance measurement system.

Hypothesis 1: Police departments who establish clearly-defined goals generate performance superior to other police departments.

Survey Questions:

- Survey Item 1: Our performance targets are specific and quantifiable, e.g. Reduce violent crime by 2% over the next year (Source: Bratton, 1998).
- Survey Item 2: If we set more than one performance target, we specify which ones are more important and which ones are least important (Source: Bratton, 1998).

The table below shows the descriptive statistics for the responses to survey items that make up this hypothesis.

Table 1: Descriptive statistics of responses to survey items representing target clarity.

|  | N | Minimum | Maximum | Mean | Std. Deviation | Variance |
|---|---|---|---|---|---|---|
| Survey Item 1 | 368 | 1.0 | 5.0 | 3.27 | 0.99 | 0.99 |
| Survey Item 2 | 366 | 1.0 | 5.0 | 3.36 | 0.86 | 0.74 |

### 2.4.2. Alignment with Strategy:

There are two types of goals defined in the goal-setting literature: distal and proximal goals. Distal goals are long-term strategic goals, while proximal goals are short-term targets based on the end goals (Latham & Seijts, 1999; Seijts & Latham, 2001). It is essential that all proximal, individual, team, or group goals are linked to and based upon the overall organizational goals (McConkie, 1979). Proximal goals provide clear markers of success and frequent feedback through which the employees can evaluate their progress

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and make accurate amends to their strategies accordingly (Seijts & Latham, 2001; Latham and Seijts, 1999).

Proximal goals provide smaller and controllable goals which help the employees to attain structurally sound wins, leading to the eventual attainment of the larger goal (Latham & Seijts, 1997). Assignment and reaching of proximal goals increases self-efficacy among employees performing tasks, as by reaching smaller subgoals, they become more confident in attaining the broader high-level goals through an early assurance of success (Bandura, 1997; Latham & Brown, 2006; Stock & Cervone, 1990; Latham & Locke, 1991). Basing proximal goals on distal goals helps add *clarity* to the goals, as employees can relate performance on their task to overall organizational goals.

In the context of police agencies, deriving from his long-term experience as the head of the police force in Newark, Shane (2000) recommends that all performance targets set by a police force should be derived from their overall goals. Furthermore, Coleman (2008) argues that performance measurement systems for police agencies which are not designed based on the overall goals of an agency will not be able to yield the desired impact on organizational performance. Other studies on police management also support the notion that performance indicators should clearly translate the performance targets in order to increase the efficacy of performance management systems (e.g., Moore & Braga, 2003; Burnett, 2007).

The idea that performance measurement is a tool for achieving the strategic goals of an organization is further supported by advisory literature in the police sector such as *Striving For Excellence: A Guidebook For Implementing Standardized Performance Measures* published by the Commission on Accreditation for Law Enforcement Agencies,

*Implementing an Agency-Level Performance Measurement System: A Guide for Law Enforcement Executives* by Police Executives Research Forum, and the *Law Enforcement Tech Guide For Creating Performance Measures That Work: A Guide for Executives and Managers* by the Office of Community Oriented Policing Services, US Department of Justice (Davis et al., 2008; Milligan et al., 2006; Roberts, 2006).

Stock and Cervone (1990) found that proximal goals (as opposed to distant goals) help employees focus more persistently on tasks as it is harder for individuals to focus on end results in the distant future (Dweck, 1986; Stock & Cervone, 1990; Latham & Locke, 1991; Latham & Brown, 2006). Proximal goals have been found to reduce uncertainty and improve error management, especially for complex tasks, by providing regular feedback if their progress is in tune with goal attainment and if they need to make amends to their strategies (Frese & Zapf, 1994; Latham & Brown, 2006; Latham & Seijts, 1999). Employees who were given distal goals and proximal goals were found to develop more task-relevant strategies (Seijts & Latham, 2001). Deriving performance measurement systems from strategic plans ensures that performance measurement supports activities which lead to the attainment of those objectives, rather than the activities that might have no or harmful impacts on goal attainment (Tangen, 2004; Tangen, 2002a).

The process of creating performance measurement systems begins with defining targets for results, outputs, and outcomes that organizations aspire to achieve through the program (Kelly & Rivenbark, 2003; Poister, 2003; Bouckaert & Van Dooren, 2010). Measurement indicators are then selected on the basis of program targets (Kelly & Rivenbark, 2003). The indicator selection process essentially defines how the targets and the progress toward them would be measured (Julnes, 2008; Bouckaert & Van Dooren,

2010). Performance indicators, hence, should be aligned with the overall organizational strategy and program targets as they would be more helpful to policy-makers and managers in aligning their efforts toward organizational goals (Armstrong & Baron, 1998; Poister, 2003). Basing performance targets on overall organizational goals and performance indicators on the performance targets helps reduce goal displacement and value displacement while increasing focus on critical activities.

Ittner et al. (2003) emphasize establishing performance measures and targets based on the overall organizational strategy. Both contingency and economic theory support the alignment of control, information, and reward systems with the larger strategy. Alignment leads to improve communication, motivate performance, and provide faster feedback (Ittner et al., 2003). Ittner et al. (2003), however, found no association between aligning performance measures and targets with organizational strategy to performance. Hence, it is important to verify the proposed effectiveness of this practice in different contexts.

Proximal goals, however, may fail to increase performance for tasks requiring long-term behavior change and where the employees have a high level of interest in the overall distal goal, as they might reduce flexibility in strategies (Latham & Locke, 1991; Kanfer & Grimm, 1978). Poister and Streib (1999) hypothesized that setting performance indicators on organizational strategic goals was a good practice for performance measurement, and asked city governments across the US if they set their performance targets based on their overall goals and objectives, including for their police departments. Similarly, a meta-analysis of the literature on Performance Based Budgeting showed that performance indicators should be derived from and reflect the performance targets (Hagar

& Hobson, 2001), which is considered to be an essential practice in designing a

performance measurement system for the public sector (see Grizzle, 1988).

Hypothesis 2: Police departments who base performance targets on overall organizational goals will generate superior performance than other police departments.

Survey Questions:

- Survey Item 3: While determining our performance targets, we ensured that the targets are based on our strategic goals (Source: Poister & Streib, 1999).
- Survey Item 4: We base the performance targets of our units on departmental objectives (Source: Poister & Streib, 1999).

The table below shows the descriptive statistics for the responses to survey items

that make up this hypothesis.

Table 2: Descriptive statistics of responses to survey items representing alignment with strategy.

|  | N | Minimum | Maximum | Mean | Std. Deviation | Variance |
|---|---|---|---|---|---|---|
| Survey Item 3 | 367 | 1.0 | 5.0 | 3.80 | 0.71 | 0.50 |
| Survey Item 4 | 367 | 1.0 | 5.0 | 3.73 | 0.76 | 0.58 |

### 2.4.3. Diversity of Targets:

Having a diverse set of goals helps organizations clarify to their employees the

diverse set of values they uphold, as well as the overall mission of the organization. Hence,

the recommended practice for producing a diverse set of goals is closely related to the

*clarity* component of goal-setting theory. Earlier studies in the public sector such as Scott

and Tiessen (1990), Hoque and James (2000), and Ittner et al. (2003) support the argument

that having more measures of performance helps improve organizational performance.

Acknowledging the lack of a specific hypothesis regarding goal-setting theory, I would

argue that setting multiple goals for organizational outcomes is beneficial for

organizations. Having a diverse set of goals helps organizations focus on many outcomes

at a time, incorporate various values, and be able to link outcomes and values together in

order to acquire a holistic view of their success (Kaplan & Norton, 2001; Quinn & Rohrbaugh, 1981).

Although police outputs such as arrest rates, clearance rates, and efficiency are widely measured in the literature (e.g., Wang, Vardalis, & Cohn, 2000; Carringtonet al., 1997; Tilley, 1995; Nicholson-Crotty & O'Toole, 2004), measuring outcomes is a better way to determine police performance than measuring outputs, as the outputs may or may not be leading to the desired outcomes (Loveday, 2006). Furthermore, measurement of outputs is termed to be an insufficient measure of police performance by some scholars (e.g., Coleman, 2008).

Police scholars such as Shane (2000) and Moore and Braga (2003) argue that although police performance is frequently measured through output measures such as patrolling the streets, responding to citizen calls for assistance, investigating crimes, arresting people who break the laws, and regulating traffic, it is in fact the outcome measures such as reducing crime, reducing criminal victimization, calling offenders to account, clearance rates, reducing fear and increasing perceptions of security, fair use of authority, and efficiency in managing resources which should be measured. Output measurement is easier and more readily available, while outcome measurement is more complex and hard to account for (Moore & Braga, 2003).

Through their wide experience in serving in police departments and managing performance measurement systems, Shane (2000) and Moore and Braga (2003) argue that performance targets for police agencies should cover a wide array of factors such as reduction in criminal victimization, holding offenders accountable, increasing safety in

public places, fostering a sense of personal security among citizens, efficiently using

financial resources, and making fair and effective use of force. By measuring a broad set

of outcomes, departments ensure that they neither delve into a myopic view of their

performancenor disregard the broader organizational goals. Reports and guidebooks on

designing and implementing performance measurement systems for police agencies (Davis

et al., 2008; Milligan et al., 2006; Roberts, 2006) all support that performance targets and

indicators should be based on a wide variety of dimensions of police outcomes.

Hypothesis 3: Police departments who base their performance targets on a wide variety of
indicators will generate superior performance than other departments.

Survey Questions:

- Survey Item 5: We set performance targets for:
    - Reducing criminal victimization (crime prevention) (yes/no).
    - Increasing safety in public places (yes/no).
    - Improving citizen perceptions of crime decrease/safety (yes/no).
    - Demonstrating fair and effective use of force (yes/no).
    - Holding offenders accountable (investigation and prosecution) (yes/no).
    - Providing quality service to the public (yes/no).
    - Efficiently using financial resources (yes/no).

The variable for targets diversity was measured by aggregating every time the

police chiefs responded "yes" (coded as 1). The "no" response was coded as 0. The table

below shows the descriptive statistics for the responses to survey items that make up this

hypothesis.

Table 3: Descriptive statistics of responses to survey items representing diversity of targets.

|  | N | Minimum | Maximum | Mean | Std. Deviation | Variance |
|---|---|---|---|---|---|---|
| Survey Item 5 | 349 | 1.0 | 7.0 | 4.88 | 1.83 | 3.34 |

A mean of almost 5 suggests that police agencies are more likely to base their performance targets on a wide variety of performance indicators.

### 2.4.4.   *Communication of Targets:*

The recommended practice of communicating targets can be linked to two components of goal-setting theory, *clarity* and *commitment*. Agencies can clarify goals and targets for employees by using better communication. Similarly, while employee acceptance is essential to the success of any goal-setting effort, communication is key to achieving employee acceptance. Locke and Latham (1991) argue that goal setting is based on communication, as goals need to be communicated to the employees as well as understood in order for them to accept and act upon them. Furthermore, the motivational effects of goals can be dissipated and diluted over time; hence, there is always a need for goals to be regularly reinforced through effective communication within the organization (Miner, 2006).

Butterfield et al. (2004) showed that communicating targets throughout an organization is an important practice in police departments in the UK which have adopted performance measurement systems. Experienced and successful police chiefs from Newark, Los Angeles, and New York have also supported the idea of clearly communicating performance targets to all officers (Shane, 2000; Bratton & Malinowski, 2008). In the *Law Enforcement Tech Guide*, the US Department of Justice advises that effective and ongoing communication with lower-level officers is necessary in designing and implementing an effective performance measurement system (Roberts, 2006). The communication should be organization-wide, available to all employees (Roberts, 2006).

Keeping the employees informed about decisions made is an important aspect of participatory consultation, which leads to better employee performance (Wright & Hassan, 2013; Kim & Yukl, 1995; Yukl, Gordon & Taber, 2002). The notion that performance targets should be well communicated to the employees of an organization has been proven to be effective in many studies on Total Quality Management, Supply Chain Management, Human Resource Management and Business Process Re-engineering in the private sector and is an established best practice (Bae & Lawler, 2000; Ahmad & Schroeder, 2003; Wullenweber et al., 2008; Cho, Woods et al., 2006; Samson & Terziovski, 1999; Li et al., 2006; Tan et al., 1999). Poister and Streib (1999) included a question on the extent of communication that performance targets city managers and their police departments engage in while managing their performance measurement systems.

Hypothesis 4: Police departments who communicate their performance targets to their rank and file will generate superior performance than other police departments.

Survey Questions:

- Survey Item 6: We actively communicate our performance targets to our officers and other employees by regular newsletters and reports.
- Survey Item 7: We regularly communicate performance targets to our employees through meetings and workshops (Survey Item 6).

The table below shows the descriptive statistics for the responses to survey items that make up this hypothesis.

Table 4: Descriptive statistics of responses to survey items representing communication of targets.

|  | N | Minimum | Maximum | Mean | Std. Deviation | Variance |
|---|---|---|---|---|---|---|
| Survey Item 6 | 362 | 1.0 | 5.0 | 3.86 | 0.73 | 0.53 |
| Survey Item 7 | 359 | 1.0 | 5.0 | 3.88 | 0.71 | 0.51 |

### 2.4.5. Consultation with Officers:

Participation in decision making by individuals was found to increase performance (Carroll & Tosi, 1973; Lawrence & Smith, 1955), cost saving (Carroll & Tosi, 1973; Likert, 1961), acceptance of the decisions (Carroll & Tosi, 1973; Maier, 1963), quality of the decisions (Carroll & Tosi, 1973; Maier, 1963), agreement and mutual understanding (Carroll & Tosi, 1973; Hare, 1953; Bovard, 1948), and job satisfaction (Carroll & Tosi, 1973; Vroom, 1965). Scholars such as Lawrence and Smith (1955) and Vroom (1964) argue that satisfaction among employees increases with participation, which leads to better outcomes (Carroll & Tosi, 1970).

As individuals better understand what is expected of them through shaping goals, taking part in discussions, and providing their input, participation in goal setting and decision making help them better identify problems and feel more in control over the manner in which the goals are set as well as the means to reach them (Carroll & Tosi, 1973). Goals set through participation also help increase acceptance and commitment to goals (Miner, 2006). Group goals might require a certain amount of coordinated planning activities in order to achieve them, which can be enhanced through participation (Latham & Locke, 1991; Larson & Schaumann, 1990). Participation in goal setting can also help develop a shared vision among the employees, lower dysfunctional opportunism, and reduce negative feelings about other employees and teams (Locke & Latham, 2006). Hence, the recommended practice of consultation with officers can be linked to the *commitment* component of goal-setting theory. Benefits of participation other than motivation, such as improving the quality of strategy development and increasing goal commitment, are recognized by the theory (Latham & Locke, 1991; Latham, Winters, &

Locke, 1991). It is also argued that participation helps employees to better understand the object and develop strategy, which in turn helps improve performance; however, it has no direct effect on motivation (Latham, Winters, & Locke, 1991; Latham & Locke, 1991).

Wright and Hassan (2013) distinguish employee participation in two categories: consultation and delegation. Consultation refers to the process of asking for ideas, opinions, and concerns from the employees, while delegation refers to giving employees the authority to take decisions and choose methods of fulfilling their tasks without seeking approval from their superiors (Wright & Hassan, 2013; Heller & Yukl, 1969; Yukl, 2013; Yukl & Fu, 1999). Consultation helps improve decision quality and employee satisfaction, while delegation helps enhance the sense of responsibility, job satisfaction, and eventually performance (Wright & Hassan, 2013; Vroom & Yetton, 1973; Oldham & Hackman, 1980; Oldham & Hackman, 1990).

Consulting with organizational employees before setting performance targets and measurement indicators is an established best practice in the fields of Human Resource Management, Business Process Redesign, Total Quality Management, and Supply Chain Management, and has been proven to work by many scholars (Bae & Lawler, 2000; Ahmad & Schroeder, 2003; Wullenweber et al., 2008; Samson & Terziovski, 1999; Tan et al., 1999). The SEIU (2010) report on the use of Performance Based Budgeting across US states found that including opinions from junior officers and employees in the process of setting performance targets and measurement indicators reduces the chances of perverse behavior and data manipulation.

Performance measurement system designers should note that public agencies work under a complex sets of goals, sometimes contradictory, and are answerable to more than one stakeholder such as politicians, agency heads, the public, the media, and grant authorities, which often have divergent interests and priorities (Dixit, 2002; Bouckart & Balk, 1999). It is recommended that performance targets and measures be decided only after due agreement by the manager, the team, and other stakeholders (Armstrong & Baron, 2000; Poister, 2003; Hatry, 2006).

Although subordinate compliance might be sufficient for some tasks and environments, decision acceptance is necessary to inculcate initiative, judgment, or creativity from the lower employees (Hill & Schmitt, 1977). Employee participation, furthermore, increases human capital as it helps develop an environment where employees learn through collectively thinking about decisions and their implications (Vroom, 2003; Lawrence & Rick, 2001). Through employee participation, organizations strengthen their internal processes and team cogency by building positive relations between members while aligning individual goals to group or organization goals (Vroom, 2003; Lawrence & Rick, 2001; Lawrence & Rick, 2001; Vroom & Yetton, 1973; Vroom & Jago, 1988). These aspects further lead to an increase in employee motivation and focus (Lawrence & Rick, 2001; Vroom & Yetton, 1973; Vroom & Jago, 1988).

By including subordinates in the decision-making process, leaders help develop feelings of ownership over the decisions within the employees, which results in a smoother and faster implementation of the decisions and a reduction to obstruction to change (Vroom & Jago, 1988; Erez & Kanfer, 1983). Subordinate participation, hence, can help manage complex and contentious issues better by resolving differences between people (Vroom &

Jago, 1988). Incumbent and former police chiefs having experience with performance measurement systems in police departments credit this practice for better organizational performance (Bratton & Malinowski, 2008). Butterfield et al. (2004) emphasized the need to engage police officers in selecting performance targets in order to implement an effective performance measurement system. Providing suggestions on how to better design performance measurement systems for small police departments, Burnett (2007) noted that it is necessary that the system designers receive feedback from supervisors, officers, and investigators to include the information that would help them do their job.

The *Striving For Excellence* guidebook stresses the fact the police officers should be regularly surveyed about their perceptions of performance measurement systems as well as their opinions to make the system work better (Davis et al., 2008). Similarly, the report *Implementing an Agency-Level Performance Measurement System: A Guide for Law Enforcement Executives* by the Police Executives Research Forum suggests that agency employees should be involved in performance measurement system design and implementation process through advisory committees, task forces, and other methods (Milligan et al., 2006). The *Law Enforcement Tech Guide* also advises the system designers to seek input from the employees as they will directly contribute to all the aspects of the organization's operations; have direct knowledge of agency operations, the concerns of the community, and the needs and capabilities of the organization; and have insight into agency operations (Roberts, 2006).

Hypothesis 5a: Police departments who consult on-the-ground officers while setting targets and measurement indicators will generate superior outcomes than other police departments.

Survey Questions:

- Survey Item 8: We consult lower-ranking officers before specifying performance targets for the department and units.
- Survey Item 9: We consult lower-ranking officers before specifying performance targets for them.
- Survey Item 10: We actively seek suggestions and advice from our officers to improve our performance measurement system.

The table below shows the descriptive statistics for the responses to survey items that make up this hypothesis.

Table 5: Descriptive statistics of responses to survey items representing consultation with officers.

|  | N | Minimum | Maximum | Mean | Std. Deviation | Variance |
|---|---|---|---|---|---|---|
| Survey Item 8 | 361 | 1.0 | 5.0 | 3.62 | 0.79 | 0.63 |
| Survey Item 9 | 362 | 1.0 | 5.0 | 3.57 | 0.79 | 0.63 |
| Survey Item 10 | 363 | 1.0 | 5.0 | 3.77 | 0.82 | 0.67 |

### 2.4.6.    Officer Discretion:

Goal commitment in lower-ranking employees can be increased by delegating power to them, as it increases the sense of ownership and decreases alienation among them (Locke, 1996). Performance measurement systems could be most effective in improving program performance if managers are given the maximum possible discretion to make decisions regarding all management domains from hiring to expenditure allocation while staying within the pragmatic resource limits (Hatry, 2006). Being the agents, the managers know the situation on the ground better than anyone else (Ostrom, 1990), and they know what areas need attention on which scales in order to improve performance. Giving them maximum possible discretion and holding them accountable only for the final performance yields the best from them and the agency as the whole (Gilmour & Lewis, 2006b; Drucker,

1993; Bale & Dale, 1998). This practice clearly relates to the *commitment* component of goal-setting theory.

Shane (2000) supports giving discretion and authority to lower-level police officers to achieve their performance targets in order to produce better results from performance measurement systems. Scholars such as Loveday (2005b, 2006) and Caulkin (2009) argue that performance measurement systems can only be effective in improving the performance of police agencies if the police departments and their officers enjoy ample discretion and professional autonomy (Davis et al., 2008; Milligan et al., 2006; Roberts, 2006).

Hypothesis 5b: Police departments which delegate decisions to their officers will generate superior performance than other police departments.

Survey Questions:

- Survey Item 11: Our officers enjoy discretion and autonomy in making operation-level decisions to achieve performance targets.
- Survey Item 12 Management does not interfere in day to day decisions made by the on-the-ground officers.

The table below shows the descriptive statistics for the responses to survey items that make up this hypothesis.

Table 6: Descriptive statistics of responses to survey items representing officer discretion.

|                | N   | Minimum | Maximum | Mean | Std. Deviation | Variance |
|----------------|-----|---------|---------|------|----------------|----------|
| Survey Item 11 | 354 | 1.0     | 5.0     | 3.88 | 0.68           | 0.47     |
| Survey Item 12 | 353 | 1.0     | 5.0     | 3.62 | 0.85           | 0.72     |

### 2.4.7.  *Leadership Support:*

Support from top management is essential for the success of mechanisms working under goal-setting such as Management By Objectives and performance management

(Miner, 2006; Rodgers & Hunter, 1991). The leadership can increase goal *commitment* by persuading their subordinates that the goals are important and attainable by asserting their authority, communicating effectively, showing how the goals can benefit the individuals, challenging the employees, setting good examples, exerting pressure to perform, and serving as role models (Latham & Locke, 1991; Earley, 1986b; Mento et al., 1990; Ronan, Latham, & Kinne, 1973; Podsadoff & Fahr, 1989). Top leadership helps the utilization of performance management by imparting explicit and credible support and committing time and resources (Moynihan, Pandey, & Wright 2012). In the absence of proper leadership support, lower managers can be suspicious of the reforms to be a passing fad, which might lead to *pro forma* compliance (Moynihan, Pandey, & Wright 2012). Leaders can also use performance information to hold employees accountable, which would encourage the managers to use the measures to compare their performance to that of other employees.

Organizational leaders are important stakeholders for the implementation of performance measurement systems. All the steps of constructing a performance measurement system require top leadership commitment (Poister, 2003). Any performance measurement system requires strong top management support, commitment, and leadership to steer the management process (Hatry, 2006; Poister, 2003). This support is necessary to engrain performance measurement in the overall management culture of the organization and, more importantly, is instrumental in motivating the employees to use performance measurement information for internal communication, decision making, and taking actions based on this information. Top leadership support also ensures a likely increase in resources available to the performance measurement system.

Hagar and Hobson (2001) found that well-performing Performance Based Budgeting systems in the public sector need top management support, while support from top leadership has been shown to be necessary in establishing effective performance measurement in police departments by practitioners and scholars (Shane, 2000; Bratton & Malinowski, 2008). The *Law Enforcement Tech Guide* suggests that top leadership should be actively involved in introducing, championing, and promoting performance measurement systems, and their commitment is essential for the success of the program (Roberts, 2006).

Hypothesis 6: Police departments where the top leadership supports performance measurement systems will generate superior outcomes than other police departments.

Survey Questions:

- Survey Item 13: As the chief of the department, I actively support performance measurement systems (Source: Poister & Streib, 2005).
- Survey Item 14: The mayor of the city/town supports the department's performance measurement system (Source: Poister & Streib, 2005).
- Survey Item 15: The city/town council supports the department's performance measurement system (Source: Poister & Streib, 2005).

The table below shows the descriptive statistics for the responses to survey items that make up this hypothesis.

Table 7: Descriptive statistics of responses to survey items representing leadership support.

|                | N   | Minimum | Maximum | Mean | Std. Deviation | Variance |
|----------------|-----|---------|---------|------|----------------|----------|
| Survey Item 13 | 350 | 1.0     | 5.0     | 4.10 | 0.69           | 0.48     |
| Survey Item 14 | 350 | 1.0     | 5.0     | 3.78 | 0.79           | 0.62     |
| Survey Item 15 | 353 | 1.0     | 5.0     | 3.67 | 0.80           | 0.64     |

The responses to leadership support questions suggest that the police chiefs consider themselves more supportive of the performance measurement system compared to the mayors and the city council.

### 2.4.8.  *Performance Feedback:*

*Feedback* is a necessary condition for goal clarity to show positive results (Locke & Latham, 2006), while goal setting helps improve organizational performance only in the presence of feedback (Ivancevich & McMahon, 1982). Goal setting and feedback have a symbiotic relationship, as goal-setting improves performance by a greater margin in the presence of feedback, while both feedback and goal-setting would not have an impact on performance on their own (Miner, 2006). While feedback may come in many shapes and forms (e.g., formal, informal, self-evaluation), when provided by the superiors, it should be easy to interpret by the recipients in order to abstract the right message from it (Locke & Latham, 1990a).

Feedback on progress on goals helps improve performance as employees attain a better understanding about the effect of their strategies and what they should alter or add to achieve their goals (Carroll & Tosi, 1973). Through feedback, employees become more aware of what is expected of them, and hence direct their efforts in more accurate directions (Carroll & Tosi, 1973; Pryer & Bass, 1957). Apart from performance benefits, employees might use feedback to enhance one's image and impression to others (Latham & Pinder, 2005; Ashford & Black, 1996).  Employees who received regular performance reports through bulletins and personal letters felt more certain about their performance

improvement compared to employees who did not receive feedback (Carroll & Tosi, 1973; Weitz, Antoinette, & Wallace, 1954).

It is, however, necessary that the feedback is directly relevant to the task, establishes goals, and compares current performance with a previously established goal or standard (Carroll & Tosi, 1973). Providing feedback signals that the leaders or managers have an interest in the work of the subordinates (Carroll & Tosi, 1973). Feedback, if provided in a disagreeable manner, might also create resentment and hostility among employees, which would lead to low performance (Carroll & Tosi, 1973). Positive feedback may induce employees to set higher performance goals for future performance in order to achieve more self-satisfaction and recognition (Miner, 2006).

Employees need to know the results of their efforts in terms of success and failure and hence might be dissatisfied (Becker & Green, 1962; Kenis, 1979). Performance feedback helps increase performance only when specific goals are set, and the impact of goal-setting on organizational performance increases in the presence of performance feedback (Locke, 1996). People try to increase their performance level when they receive negative feedback (Locke, 1996; Podsakoff & Farh, 1989).

It is important that the results of the performance analysis be shared across the organization, employees, management, policy-makers, and the public (Hatry, 2006; Poister, 2003; Epstein, 1984). The analysis should be presented in a meaningful manner that is easy for all stakeholders to understand. Reports are meant to provide information on analysis results to the stakeholders; hence, they should be user friendly and should cater to the needs of the target audience (Poister, 2003). The reports should suffice for stakeholder

needs and should not delve into overreporting or underreporting, as both could be harmful (Poister, 2003).

Scholars and practitioners within the police literature have also found utility in the regular and accessible publication of performance reports in order to reap higher benefits from performance measurement systems in police departments, as they help inform officers about trends in their performance to help them make decisions for improving it (Shane, 2000; Butterfield et al., 2004; Moore & Braga, 2003). Choosing Gardena Police Department, California, as an exemplary model for a performance measurement system, Burnett (2007) found that the department makes an effort to timely disperse performance reports through e-mails, printing, and posting on bulletin boards. Moore and Braga (2003) noted that user-friendly reports play an important part in an effective performance measurement system through their study of the NYPD.

Reports and guidebooks on designing and implementing performance measurement systems for police agencies support that efficient and effective feedback and performance information be provided to the employees and the public through regular reporting in formats which are easily decipherable for the target population (Davis et al., 2008; Milligan et al., 2006; Roberts, 2006)

Hypothesis 7: Police departments who provide timely performance feedback in a user-friendly manner will generate superior performance than other police departments.

Survey Questions:

- Survey Item 16: We provide regular feedback to all our officers and other employees on their performance through formal and informal means.
- Survey Item 17: We make our performance reports available on our website.

The table below shows the descriptive statistics for the responses to survey items that make up this hypothesis.

Table 8: Descriptive statistics of responses to survey items representing performance feedback.

|  | N | Minimum | Maximum | Mean | Std. Deviation | Variance |
|---|---|---|---|---|---|---|
| Survey Item 16 | 353 | 1.0 | 5.0 | 3.52 | 1.10 | 1.20 |
| Survey Item 17 | 351 | 1.0 | 5.0 | 3.87 | 1.10 | 1.20 |

### 2.4.9. *Performance Information Use:*

Performance measurement remains futile unless the information generated by the system is used to take management decisions (Moyniham & Ingraham, 2004; Van Dooren, 2008). Performance management should be used to improve the performance of an organization (Behn, 1995). More specifically, performance information use involves analyzing the measurement results by comparing them against standards, against past performance, or with other organizations, and then taking decisions on financial management, human resources, capital management, and information technology management to improve performance (Moynihan & Ingraham, 2004). Goal-setting theory stresses using performance information to make decisions (Locke & Latham, 1990a). Using performance information to reward employees can help increase their *commitment*, while making other decisions would help employees gain *feedback* about their performance and learn what is expected from them. Police literature, especially CompStat, emphasizes using performance information to make organizational decisions (Bratton, 1998; Bratton & Malinowski, 2008).

Hypothesis 8: Police departments who use performance measures to analyze performance and make decisions will generate superior performance than other police departments.

Survey Questions:

- Survey Item 18: We have regularly compared the performance of our officers, teams, and units based on their results on performance measures against standards or targets (Source: Poister & Streib, 1999).
- Survey Item 19: We have regularly compared our performance against that of other similar police agencies in our state and/or across the nation to get a clearer idea of our own strengths and weaknesses (Source: Poister & Streib, 1999).
- Survey Item 20: We have regularly analyzed trends in our performance over time on a weekly, monthly, quarterly, or annual basis (Source: Poister & Streib, 1999).
- Survey Item 21: We have regularly utilized performance information to develop strategic plans or help inform strategy more generally (Source: Poister & Streib, 1999).
- Survey Item 22: We regularly utilized performance information to assess and strengthen the performance of individual officers and staff members in our organization.
- Survey Item 23: We have regularly utilized performance information to develop budgets and allocate resources.
- Survey Item 24: We have regularly utilized performance information to revise our officer deployment plans.

The table below shows the descriptive statistics for the responses to survey items that make up this hypothesis.

Table 9: Descriptive statistics of responses to survey items for performance information use.

|  | N | Minimum | Maximum | Mean | Std. Deviation | Variance |
|---|---|---|---|---|---|---|
| Survey Item 18 | 364 | 1.0 | 5.0 | 3.50 | 0.85 | 0.72 |
| Survey Item 19 | 366 | 1.0 | 5.0 | 3.23 | 0.96 | 0.93 |
| Survey Item 20 | 368 | 1.0 | 5.0 | 3.83 | 0.83 | 0.68 |
| Survey Item 21 | 365 | 1.0 | 5.0 | 3.60 | 0.85 | 0.71 |
| Survey Item 22 | 362 | 1.0 | 5.0 | 3.67 | 0.86 | 0.74 |
| Survey Item 23 | 363 | 1.0 | 5.0 | 3.68 | 0.75 | 0.56 |
| Survey Item 24 | 362 | 1.0 | 5.0 | 3.72 | 0.77 | 0.59 |

### 2.4.10. Consultations with Citizens:

Citizen participation is an important factor to help increase organizational performance. Although citizen participation does not feature much in the goal-setting theory literature, it is a recurring recommendation in the police as well as general public management literature. Citizens feel more involved in public service initiatives if their

participation is sought by the public agency and feel that the program or policy understands their concerns, which leads to supportive efforts by the citizens toward the program (Lawrence & Rick, 2001; Lawrence & Daniels, 1996). Seeking participation from the citizen in the decision-making process helps decrease the distance between the citizens and the government and helps the government to be more aware of the needs of the community (Edelenbos & Klijn, 2006; Gerrits & Edelenbos, 2004).

The involvement of stakeholders in the decision-making process is considered to bring many benefits to an organization. Participation of the public, lower-ranking employees, and external consultants helps incorporate information and skills from various perspectives and decrease their opposition (Edelenbos & Klijn, 2006; Gerrits & Edelenbos, 2004). Stakeholders bring their own experiences, ideas, resources, perceptions, solutions, information, and support to the process (Gerrits & Edelenbos, 2004; Edelenbos & Klijn, 2006). Stakeholder involvement also makes the policy-making process more transparent and understandable while increasing acceptance of the decisions made (Gerrits & Edelenbos, 2004; Hill & Schmitt, 1977). On the other hand, in places where stakeholder input is not taken, stakeholders can be obstructive to the process as they might feel that the organizational decisions are not in line with their interests and feel alienated (Edelenbos & Klijn, 2006).

System designers should seek early input from the citizens and the target population at every important step of the process to ensure the end result will be compatible with their needs and avoid confusion in the end (de Lancer Julnes, 2008). Citizen satisfaction surveys have been proven to increase the effectiveness of Total Quality Management systems and supply chain management in the private sector (Samson & Terziovski, 1999; Li et al.,

2006). The SIEU (2010) report credits the use of citizen satisfaction surveys as a part of Performance Based Budgeting (PBB) for having enabled high-quality and effective public service delivery in the states of Washington and Oregon.

The police literature strongly recommends that citizens be consulted before setting targets for police agencies (Bratton & Malinowski, 2008; Moore & Braga, 2003). McDonald and Ridgeway (2010) and MacDonald (2002) argue that citizens should be involved in planning performance measurement systems in police departments. Bratton and Malinowski (2008) saw a positive role of citizen surveys as a part of the performance measurement system in helping them improve police services in New York and Los Angeles. Moore and Braga (2003) also support the use of citizen surveys as a part of performance measurement systems in order to improve police performance. Serpas and Morley (2008) stress the necessity of conducting citizen victimization surveys to better ascertain the performance of city police agencies.

Involving the community in the decision-making process while designing and implementing performance measurement systems, keeping them informed, and satisfying their needs by incorporating their concerns is an important recommendation provided by reports and books on police agencies such as the reports and guidebooks mentioned previously (Davis, et al., 2008; Milligan, et al., 2006; Roberts, 2006).

Hypothesis 9: Police departments who engage citizens in the decision-making process while designing and implementing their performance measurement system will generate superior performance than other departments.

Survey Questions:

- Survey Item 25: We actively consult citizen groups before setting our performance targets (Source: Poister & Streib, 2005).

- Survey Item 26: We actively seek suggestions and advice from citizens to improve our performance measurement system (Source: Poister & Streib, 2005).
- Survey Item 27: We have formal systems for gathering citizen complaints and concerns about our performance measurement system.

The table below shows the descriptive statistics for the responses to survey items that make up this hypothesis.

Table 10: Descriptive statistics of responses to survey items representing consultation with citizens.

|  | N | Minimum | Maximum | Mean | Std. Deviation | Variance |
| --- | --- | --- | --- | --- | --- | --- |
| Survey Item 25 | 351 | 1.0 | 5.0 | 3.23 | 0.84 | 0.70 |
| Survey Item 26 | 353 | 1.0 | 5.0 | 3.23 | 0.85 | 0.72 |
| Survey Item 27 | 353 | 1.0 | 5.0 | 4.13 | 0.90 | 0.82 |

We observe comparatively lower means for the first two survey items, and a high mean for the third survey item. This suggests that police agencies make less of an effort to include the citizens in the decision-making process than they do to listen to their complaints.

### 2.4.11. Quality Control:

For any management strategy or system, there will always be a difference between the organizational goals and priorities of employees, which might lead to a decrease in the effectiveness of the organization (De Haas & Kleingeld, 1999; Steers, 1977). Furthermore, the environmental and internal dynamics of the organization might also result in the weakening of strategy. Performance measurement systems should be flexible and revised periodically to ensure that they remain congruent with the changes in organizational objectives and strategies (Tangen, 2004). Scholars such as Kennerley and Neely (2002)

and Amaratunga and Baldry (2002) emphasize the dynamic nature of performance management systems and the need to upgrade them with the changing environment.

Performance measurement system designing is not a one-time affair, as the goals and targets of these organizations are not static and should keep changing based on the environment (Erez & Kanfer, 1983). The managers need to update all performance aspects from data collection to reporting, and the processes involved in order to be relevant to the needs of the program (Mannion & Goddard, 2000; Meyer & Gupta, 1994; Leeuw, 2000). Problems such as targets becoming irrelevant, measurement methods becoming outdated, and employee learning to game the system are most likely to occur in performance measurement systems over time, which need to be resolved (Poister, 2003). The system should be periodically checked for quality, efficiency, and effectiveness, and corrective actions should be taken accordingly (de Lancer Julnes, 2008). It is important that all such actions are taken with customer and policy makers' consent (Bouckaert & Van Dooren, 2010). Similarly, indicator formulation is not a one-time affair, as indicators will need to be modified with time according to the needs (Epstein, 1984). Changes in the environment such as the arrival of new technology or management systems could make the provision or analysis of some data more feasible, while a change in society values such as an increase in interest in environmental issues could force the addition or omission of some performance indicators.

External experts and consultants, whose input is necessary to make the programs function better, are important resources in the policy-making process as they can bring their expert knowledge to the system needed to manage a complex public service environment (Gerrits & Edelenbos, 2004). External consultants and experts might help decrease the

problem of group-think and internal bias in organizations, while they might also provide fresh ideas and perspectives to problems (Janis, 1972, 1982, 1989). Seeking external help from experts and consultants in order to improve Performance Based Budgeting systems has been shown to improve the quality of systems through a meta-analysis by Hagar and Hobson (2001) and is also one of the findings of the SEIU (2010) report.

Poister and Streib (2005) included this practice in their survey on performance measurement practices across US cities including their police departments. Burnett (2007) emphasized the importance of quality control on data entry for performance measurement systems, in order to make them work better. Burnett (2007) emphasized the importance of external quality audits for performance measurement systems in police departments in order to enhance their effectiveness; this involves reviewing existing systems in order to keep them updated and reduce the chances of employee manipulation of the system. Other studies suggest that performance measurement system design and implementation is a complex affair, and help from external experts and consultants is often needed to improve research methodology, statistical analysis, information technology, and other aspects of performance measurement systems (Milligan et al., 2006; Roberts, 2006).

Goal-setting theory, however, is silent of the use or effectiveness of this practice.

Hypothesis 9: Police departments who conduct regular quality checks of their performance measurement systems will generate superior performance than other police departments.

Survey Questions:

- Survey Item 28: We periodically conduct quality checks of our performance measurement system and make appropriate changes (Source: Poister & Streib, 2005).
- Survey Item 29: We actively seek help from external consultants and experts to conduct quality checks of our performance measurement system.

The table below shows the descriptive statistics for the responses to survey items that make up this hypothesis.

Table 11: Descriptive statistics of responses to survey items representing quality checks.

|  | N | Minimum | Maximum | Mean | Std. Deviation | Variance |
|---|---|---|---|---|---|---|
| Survey Item 28 | 355 | 1.0 | 5.0 | 2.51 | 0.96 | 0.93 |
| Survey Item 29 | 351 | 1.0 | 5.0 | 3.50 | 083 | 0.69 |

The means for the measures for quality control are the lowest among the recommended practices. This suggests that police agencies are generally not so keen in conducting quality checks of their performance measurement systems.

The table below summarizes the relationship between the recommended practices for designing and implementing performance management systems in police agencies to the four components of goal-setting theory.

Table 12: Relation between the recommended practices and the four components of goal-setting theory.

| Condition | Hypothesis (Recommended Practice) |
|---|---|
| Clarity | Specific Targets (H1) <br> Alignment with Strategy (H2) <br> Diversity of Targets (H3) <br> Communication of Targets (H4) |
| Commitment | Communication of Targets (H4) <br> Consultation with Officers (H5a) <br> Officer Discretion (H5b) <br> Leadership Support (H6) <br> Performance Information Use (H8) |
| Feedback | Performance Feedback (H7) <br> Performance Information Use (H8) |
| Challenging | ??? |
| Not Related | Consultation with Citizens (H9) <br> Quality Control (H10) |

The practices of setting specific targets, aligning performance measures with organizational strategies, diversity of targets, and communicating the targets can be linked to the clarity component of goal-setting theory. Similarly, communication of targets, consultation with officers, officer discretion, leadership support, and using performance information can be linked to the commitment component. Only two practices, providing performance feedback and using performance information, can be tied to the feedback component, while the practices of quality control and consulting with citizens cannot be linked to any of the four components of goal-setting theory. It is to be noted that the practices of communication of targets and using performance information can be tied to two components each. The police literature, however, does not provide strong assertions about the use and effectiveness of recommended practices related to the *challenging* component of the theory. Contrary to the general public management literature, where setting goals that are neither too easy nor too difficult (e.g., smart objectives) is emphasized, police literature only contains passing references to this important component of goal-setting theory.

# CHAPTER 3: METHODOLOGY

The methodology of this study is inspired by the Meier and O'Toole model for management (1999) and the subsequent research on public sector management in education, police, and local government based on this model (Meier & O'Toole, 2001; Andrews et al., 2005; Andrews et al., 2009; Meier & O'Toole, 2007; Walker et al., 2010, Nicholson-Crotty & O'Toole, 2004). In the Meier and O'Toole model for public management, the current performance of an organization is said to be dependent upon management strategies adopted and the past performance of that organization.

Not only does past performance explain current performance, it also serves as a surrogate for organizational and environmental differences between organizations. Hence, we can use past performance as a proxy for variables that cannot be directly measured, such as leadership quality, employee motivation, job satisfaction, teamwork, goal clarity, communication, fairness, organizational structure, managerial competence, or rewards. Scholars such as Meier and O'Toole (2001), Andrews et al. (2005), Andrews et al. (2009), Meier and O'Toole (2007), Walker et al. (2010), and Nicholson-Crotty and O'Toole (2004) have used the Meier and O'Toole (1999) model, with past organizational performance as the super-control variable (represented by a single measure) and management strategy as the policy variable to find out the impacts of management strategies on the current performance of public schools, public transit agencies, police agencies, and local governments. Their equation is presented here:

*Current Performance = $B_0$ + $B_1$\*Management Strategy + $B_2$\*Other Control Variables + $B_3$\*Past Performance + Error*

I intend to use this model by introducing management strategy, i.e. the recommended practices in the design and implementation of performance management systems, to test my hypotheses.

I used data from three sources. The statistics on reported crimes, which forms our performance indicators for the various police departments, come from the Federal Bureau of Investigation (FBI). These statistics are prepared by the FBI on a yearly basis for many decades in the form of Uniform Crime Reports (UCR), which are available on their website. Following the various applications of the Meier and O'Toole model (e.g., Poister et al., 2013), I have used a time lag of three years between current and past performance; hence, the crime rates from 2009 are used to define past performance. Crime rates in different categories from 2012 (serving as the dependent variables) and crime rates from 2009 (serving as past performance) are both derived through the UCR.

Information on other control variables, such as the number of police officers and the population of cities/towns, also comes from the UCR. Demographic indicators which form other control variables such as poverty, minority population, and city area are derived from the US Census Bureau website, reported by city/town. Information on policy variables is collected through surveys sent to police chiefs to find out the way performance measurement is used by police departments.

### 3.1. <u>Dependent Variable – Police Performance</u>

The word "performance" incorporates the productivity, efficiency, equity, effectiveness, management, outcomes, impacts, and results of the activities, projects, and programs conducted by a government unit (Kearney & Berman, 1999; Armstrong, 2000;

Redburn et al., 2007). Performance is the answer to questions such as 'To what extent were the goals reached?', 'What activities were carried out?', 'How well were the activities carried out?', 'How many resources were used?', 'Were the public sentiments respected?', 'Was the resource distribution equitable?', 'How were the employees managed?', and 'What was the effectiveness of the efforts?' (Kearney & Berman, 1999; Armstrong, 2000; Redburn et al., 2007; Van Dooren, 2010).

The focus and attention of performance rests on the task being carried out, the competence and capability of the agency and its employees, the quality of the final product, and the combined impact of their competence and effectiveness (Van Dooren, 2010). The case of determining police performance is complicated because the police force has to maintain a balance between the demands of the community, social justice, organizational flexibility, budgeted resources, accountability, efficiency, and effectiveness (den Heyer, 2011).

The basic function of the police force is to protect the life, property, and liberty of the citizens from unlawful behavior as well as to protect their political and civil rights, help promote commerce, promote domestic tranquility, and assure justice (Moore & Braga, 2003). In order to achieve these larger goals, the police force engages in activities such as patrolling the streets, responding to citizen calls for assistance, investigating crimes, arresting people who break the laws, handling crowds, regulating traffic, and facilitating access to social and medical services (Moore & Braga, 2003; Goldstein, 1977). These activities are a means to achieve the greater goals of police agencies (Moore & Braga, 2003). When we measure the performance of police agencies on the activities that they engage in, we measure how well they are performing on their outputs, while a measure of

how well they perform on the basic function category is akin to measuring their outcomes (Moore & Braga, 2003).

Although police outputs such as arrest rates, clearance rates, and efficiency are widely measured in the literature (e.g., Wang, Vardalis, & Cohn, 2000; Carrington t al., 1997; Tilley, 1995; Nicholson-Crotty & O'Toole, 2004), this project will focus on reported crime statistics, which is one of the outcomes of police performance (Moore & Braga, 2003). Measuring outcomes is a better indicator of true organizational performance, as the outputs may or may not lead to the desired outcomes (Loveday, 2006). Furthermore, measurement of outputs is termed to be an insufficient measure of police performance by some scholars (e.g., Coleman, 2008). Hence, I will examine if following recommendations about the design and implementation of performance management systems increases the performance of police agencies in terms of reducing crimes.

Scholars such as Moore and Braga (2003) and Milligan et al. (2006) present the various ways in which we can measure police outcomes. "Reducing crime" is the most important contribution of police efforts to society which can be measured through crime rate statistics (Moore & Braga, 2003). Reduction in "criminal victimization" can be calculated by measuring crime rates as well as through conducting victimization surveys (Moore & Braga, 2003). "Calling offenders to account" relates to the ability of the police force to bring criminals to court, which strongly relates to the reduction in crime rate (Moore & Braga, 2003). Police clearance rates are historically used to measure this outcome indicator of police performance (Moore & Braga, 2003).

Police performance should also be measured in "reducing fear and perceptions of personal security" among the citizens, which may or may not be dependent on crime rate

statistics. Such perceptions can be measured through citizen surveys but pose difficulties in measurement due to the subjective difference in citizen perceptions of security and fear (Moore & Braga, 2003). Providing "safety and security in public places" is an important outcome of police departments, and citizen surveys and crime statistics can be employed to measure it (Moore & Braga, 2003). Police outcomes should also be measured on the "fair use of authority and allocation of services", which can be measured through staffing reports, citizen complaints, number of times physical force is used, and spot checks on police officers (Moore & Braga, 2003).

A comprehensive qualitative and quantitative measurement of police performance employing surveys, scrutiny of police agency records, interviews, and statistics will give us a much more complete picture of police outcomes (Mackenzie & Hamilton-Smith, 2011; Milligan et al., 2006; Fielding & Innes, 2006). However, given the enormous amount of complexity, time, resources, and problems associated with carrying out surveys, interviews, and the inspection of police records (Fielding & Innes, 2006), I will focus only on measuring crime rate statistics, which are readily available through the FBI's Uniform Crime Report database.

### 3.1.1.  *Crime Rates as Dependent Variables:*

Crime rate statistics are used to measure three (reducing crime, reduction in criminal victimization, and safety and security in public places) out of the six police outcomes defined by Moore and Braga (2003). Tilley (1995) considered it obvious that crime incidence rates be measured as an outcome for police endeavors. Many scholars consider crime reduction to be the bottom-line and the principle objective of all police activities, and hence an obvious measure for their performance outcome (Coleman, 2008;

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Spottiswoode, 2000; Moore & Braga, 2003; Tilley, 1995). Wang, Vardalis, and Cohn (2000) argue that all measures of police performance should be related to crime rate decrease in one way or the other, as crime rates provide objective measures of police performance (Wang, Vardalis, & Cohn, 2000). Historically, crime rates have been extensively used as the sole indicator of performance of police departments in the UK (Maillard & Savage, 2012).

Researchers such as Carringto et al. (1997) and Nicholson-Crotty and O'Toole (2004) used the number of criminal offenses as an indicator of police performance outcomes in their study of the police departments of New South Wales, Australia, and the US respectively. Similarly, Bratton and Malinowski (2008) cited a decrease in robberies, burglaries, and homicides as a measure of their improved performance as police officials in New York City in the 1990s. Hence, considering them the most important outcome, I have adopted crime statistics as the sole indicator of police performance. Scholars such as Bratton and Malinowski (2008) and Mastrofski (2006) argue that reduction in crimes is the main purpose of the implementation of performance measurement systems such as CompStat in police agencies.

I, however, acknowledge that police functions can have only so much of an influence on crime statistics, as crimes depend in large part upon socio-economic factors well beyond the control of police services (Tilley, 1995; Carrington et al., 1997). Apart from the efforts and policies of the police force, crime statistics have been found to be affected by factors such as the Intelligence Quotient (IQ) of the population (Bartels et al., 2010), the population size of the city (Bettencourt et al., 2010), the size of the immigrant population (Bianchi et al., 2012; Ousey & Kubrin, 2009), age (Blumstein & Rosenfeld,

2008), male-to-female ratio (Edlund et al., 2007), race (Stacey et al., 2011; Blumstein & Rosenfeld, 2008; Cornell, 2012), legalized abortions (Donohue & Levitt, 2001), ethnicity (Blumstein & Rosenfeld, 2008; Cornell, 2012), education levels (Buonanno & Leonida, 2009; Lochner, 2010), income inequality (Brush, 2007), poor economy, (Blumstein & Rosenfeld, 2008), gun control policies (Cornell, 2012), presence of violence-inducing facilities such as slaughterhouses (Fitzgerald et al., 2009), childhood exposure to lead (Reyes, 2007), and nation-wide crime trends (McDowall & Loftin, 2009), to name a few.

Nevertheless, given the purpose, legitimacy, and force behind police departments, the crime reduction strategies adopted by the police have a debatable impact on the reduction of overall crime rates. This conjecture is supported by theories such as the theory of deterrent effect of policing on crimes rates (Wilson, 1978; Sampson & Cohen, 1988) and the "control of urban order and incivilities" (Sampson & Cohen, 1988). Scholars such as Sampson and Cohen (1988), Chaiken et al. (1974), Di Tella and Schargrodsky (2004), Kovandzic and Sloan (2002), Marvell and Moody (2006), Levitt (1998), Marvell and Moody (1996), Corman and Mocan (2000), and Sherman and Weisburd (1995) all support an increase in police deployment to decrease crime rates using different analysis techniques in varying contexts.

Hence, I argue that while crime rates are impacted by a host of other factors, police agencies and the strategies they adopt have a sizable impact on crime rate statistics within their jurisdiction. I have used crime rates in terms of the number of crimes reported in various categories of crimes per 100,000 population to ensure uniformity across police jurisdictions.

### *3.1.2. Data Source - Uniform Crime Report:*

I have used crime rates from city police departments for the year 2012 in different categories as the performance determinants and dependent variables. These data are derived from the Federal Bureau of Investigation (FBI)'s Uniform Crime Report (UCR). The UCR has been serving as the official source of crime statistics for the US since 1920 (Mooney & Harrison, 2009). The various city, county, state, university and college, tribal, and federal police agencies voluntarily submit reported crime incidents to the UCR system (Lynch & Jarvis, 2008). The UCR data contains detailed and consistent information on various crime offenses, statistics on hate crimes, and the number of law enforcement officers killed and assaulted (Mooney & Harrison, 2009; Moore & Braga, 2003).

Of all the crime statistics datasets, the UCR is the most widely used as well as one of the most criticized (Hindelang, 1974; Lynch & Jarvis, 2008). UCR data are used by researchers, policy makers, Congress, and the media, while many questions have been raised by scholars such as Maltz (1999) over the reliability of the information in this dataset (Lynch & Jarvis, 2008).

The major issue, however, that scholars have raised with the UCR dataset pertains to the concern that many crimes go unreported in the police records (Boivin & Cordeau, 2011; Targonski, 2011). Gao and Perrone (2005) further note that many victims and witnesses face problems in recalling and reporting crimes correctly, while inconsistencies in resources available to police departments might also hamper proper crime reporting. It is also pertinent to note here that crime reporting in the UCR is largely a voluntary act, which may leave some room for inconsistent reporting (Lynch & Jarvis, 2008). The emergence of the National Crime Victimization Survey (NCVS) in the 1970s also started

a debate in the literature whether NCVS is a better estimate of crimes than the UCR (Lynch & Jarvis, 2008; Decker, 1977).

Nevertheless, given all its shortcomings, UCR still remains the most robust, comprehensive, and reliable data source for crime statistics in the US (Miles-Doan, 1998). Gao and Perrone (2005) argue that it is only minor crimes which might escape reporting in a worrisome manner, while these inconsistencies are trivial for crimes such as theft and homicide. However, crimes such as forcible rapes mostly go unreported (Yung, 2014). Many scholars have compared the UCR data with crime statistics from other sources such as victimization rates (Sampson, 1987), Center for Health Statistics (CHS) (Hindelang, 1974), National Center for Health Statistics (NCHS) Mortality System (Rokaw et al., 1990), National Opinion Research Center (NORC) (Hindelang, 1974), and various studies of comprehensive sexual violence (Lonsway, 2010), and found that UCR is consistent with all these more robust datasets. Gove et al. (1985) found a similarity in citizen perceptions of crimes and the data in UCR, and concluded that UCR data are valid estimators for serious crimes such as motor vehicle theft, robbery, burglary, and homicide, while not so much for larceny, rape, and aggravated assault.

Lynch and Jarvis (2008) argue that although UCR data are based on voluntary reporting, 38 states have imposed mandatory reporting of the UCR for their police agencies, while 47 states plus the District of Columbia have state-wide reporting programs. Furthermore, UCR conducts basic data verification at least twice at the local level where the data is being populated, as well at the central station where the data is compiled, which further helps increase the validity of the dataset (Lynch & Jarvis, 2008). The fact that almost 85% of all police agencies in the US, covering 96% of its population, submit their

UCR reports adds to the credibility of the dataset and helps in obtaining data on a population instead of on a sample (Lynch & Jarvis, 2008). In a similar vein, Palusci et al. (2010) used UCR data to verify a new data collection method for child maltreatment deaths and found that the new method corresponds to the UCR results.

Given that the UCR is an expansive information database collected over five decades and encompassing the entire country, it provides an opportunity for police agencies to compare their performance to other agencies at the city, county, and state levels (Moore & Braga, 2003). The data on crime contains detailed information on date, time, location, valuables stolen, and property harmed (Moore & Braga, 2003). Hence, in the current scenario, UCR is arguably the most readily available and effective dataset on city-wide crime statistics, the target population of this study (Moore & Braga, 2003).

Many studies in the past have relied on UCR for crime statistics similar to the ones employed in this dissertation (e.g., Kawachi, Kennedy, & Wilkinson, 1999; Krivo & Peterson, 2004; Lee & Ousey, 2001; Wilkinson et al., 1984; Milligan et al., 2006). McCollister et al. (2010) used the UCR to evaluate the cost of crimes to society, while Ousey and Kubrin (2009) and Stacey et al. (2011) used the UCR data to compare immigration rates with violent crimes in the US. Lochner (2010), Lochner (2004), and Anderson (2009) used the UCR data to study the impact of education on crime rates, male arrest rate by age, and the impact of compulsory schooling laws on arrest rates, respectively.

Hence, I have used crime rates (defined as number of crimes per 100,000 population) in several categories from the UCR for cities and towns with populations between 10,000 and 500,000 pertaining to 2012, which are given below:

- *Murders and Manslaughter*: The willful (non-negligent) killing of one human being by another. The killing of another person through gross negligence.

- *Forcible Rape*: The carnal knowledge of a female forcibly and against her will.

- *Aggravated Assaults*: An unlawful attack by one person upon another for the purpose of inflicting severe or aggravated bodily injury.

- *Robberies*: The taking or attempting to take anything of value from the care, custody, or control of a person or persons by force or threat of force or violence and/or by putting the victim in fear.

- *Burglaries*: The unlawful entry of a structure to commit a felony or a theft.

- *Larceny and Theft*: The unlawful taking, carrying, leading, or riding away of property from the possession or constructive possession of another.

- *Motor Vehicle Theft*: The theft or attempted theft of a motor vehicle.

- *Total Crimes*: Total of all the crimes in violent and property crime categories.

The crimes in these categories are essentially different in nature from each other and are affected by different cultural, social, and economic characteristics. For example, the figures for motor vehicle thefts are the most reliable as nearly all these crimes are reported, while only 40% of rapes are reported to the police (Yung, 2014). It is, hence, important that we study multiple measures of crimes to obtain a complete picture.

The tables below show the descriptive statistics for all variables used in the analysis. Table 13 presents the descriptive data for the dependent variables. We can observe high variation in crime rate statistics across the various cities. Some cities report no crimes, while others show a high number of reported crimes. The coefficient of variation, however, typically suggests little variation in crime data, as the values are typically below 1.

Table 13: Descriptive statistics for dependent variables (crime rates per 100,000 people for 2012).

| | N | Minimum | Maximum | Mean | Standard Deviation | Variance | Coefficient of Variation |
|---|---|---|---|---|---|---|---|
| Murder | 409 | 0.00 | 44.37 | 3.36 | 5.62 | 31.63 | 1.67 |
| Forcible Rape | 408 | 0.00 | 164.30 | 31.16 | 25.36 | 643.06 | 0.81 |
| Aggravated Assault | 409 | 0.00 | 1329.15 | 223.92 | 207.64 | 43113.48 | 0.93 |
| Robbery | 409 | 0.00 | 970.03 | 80.38 | 96.02 | 9220.44 | 1.20 |
| Burglary | 407 | 64.08 | 3887.30 | 702.05 | 495.97 | 245979.76 | 0.71 |
| Larceny Theft | 409 | 330.56 | 13483.36 | 2493.25 | 1428.67 | 2041110.82 | 0.57 |
| Motor Vehicle Theft | 408 | 2.37 | 1697.55 | 194.00 | 201.31 | 40526.03 | 1.04 |
| Total Crime | 408 | 528.89 | 18527.50 | 3728.09 | 2120.01 | 4494422.24 | 0.57 |

Table 14 presents the skewness and kurtosis of the dependent variables. The results show that the dependent variables mostly have a high skewness. While data with a skewness value of plus or minus 1 is generally considered to be highly skewed, most dependent variables are above 1. Murder, Robbery, Larceny Theft, and Motor Vehicle Theft have the highest skewness of more than 2. This suggests that most cities had crimes above the mean. The kurtosis statistics show a high peak for some of the dependent variables. Murder, Robbery, and Motor Vehicle Theft, in particular were found to have higher peaks than the Gaussian distribution.

Table 14: Skewness and Kurtosis of crime rates per 100,000 people for 2012.

| | N | Skewness | | Kurtosis | |
|---|---|---|---|---|---|
| | | Statistic | Standard Error | Statistic | Standard Error |
| Murder | 409 | 3.12 | 0.12 | 13.49 | 0.24 |
| Forcible Rape | 408 | 1.37 | 0.12 | 2.74 | 0.24 |
| Aggravated Assault | 409 | 1.63 | 0.12 | 3.17 | 0.24 |
| Robbery | 409 | 3.45 | 0.12 | 21.29 | 0.24 |
| Burglary | 407 | 1.87 | 0.12 | 6.32 | 0.24 |
| Larceny Theft | 409 | 2.00 | 0.12 | 9.72 | 0.24 |
| Motor Vehicle Theft | 408 | 2.98 | 0.12 | 13.24 | 0.24 |
| Total Crime | 408 | 1.87 | 0.12 | 8.33 | 0.24 |

Table 15 represents correlations between all the dependent variables. We can observe a high correlation among all the measures of crimes, which suggests that crime

rates in the different categories are interdependent, and when a city or town is high in one type of crime, it is likely to be high in other types as well.

Table 15: Correlation for crime rates per 100,000 people in 2012 among different categories.

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Murder | | 0.22*** | 0.55*** | 0.57*** | 0.62*** | 0.40*** | 0.34*** | 0.53*** |
| 2 | Forcible Rape | | | 0.45*** | 0.27*** | 0.41*** | 0.41*** | 0.19*** | 0.45*** |
| 3 | Aggravated Assault | | | | 0.61*** | 0.67*** | 0.54*** | 0.37*** | 0.69*** |
| 4 | Robbery | | | | | 0.67*** | 0.65*** | 0.69*** | 0.77*** |
| 5 | Burglary | | | | | | 0.63*** | 0.45*** | 0.81*** |
| 6 | Larceny Theft | | | | | | | 0.49*** | 0.96*** |
| 7 | Motor Vehicle Theft | | | | | | | | 0.60*** |
| 8 | Total Crimes | | | | | | | | |
| | N = 410 | | | | | | | | |

***. Correlation is significant at the 0.001 level (2-tailed).

A further analysis of the dependent variables revealed many outliers. I used Box and Whisker plots to determine the outliers for crime rates in each of the seven categories of crime (see the Box and Whisker plots for each dependent variable in Appendices 10 through 17). Most of the outliers were smaller cities with high crime rates, which have the potential to bias the data findings. The following table shows the descriptive statistics for the dependent variables, excluding outliers:

Table 16: Descriptive statistics for dependent variables (crime rates per 100,000 people for 2012) excluding outliers.

| | N | Minimum | Maximum | Mean | Standard Deviation | Variance | Coefficient of Variation |
|---|---|---|---|---|---|---|---|
| Murder | 393 | 0.00 | 13.16 | 2.45 | 3.35 | 11.22 | 1.44 |
| Forcible Rape | 396 | 0.00 | 83.45 | 28.30 | 20.65 | 426.56 | 0.73 |
| Aggravated Assault | 401 | 0.00 | 721.26 | 206.10 | 174.71 | 30524.94 | 0.95 |
| Robbery | 400 | 0.00 | 303.68 | 70.08 | 67.60 | 4569.46 | 0.96 |
| Burglary | 405 | 64.08 | 2140.86 | 671.53 | 423.44 | 179301.93 | 0.63 |
| Larceny Theft | 403 | 330.56 | 5601.50 | 2389.03 | 1182.19 | 1397582.08 | 0.49 |
| Motor Vehicle Theft | 379 | 2.37 | 690.16 | 153.15 | 118.74 | 14098.82 | 0.78 |
| Total Crime | 405 | 528.89 | 8551.98 | 3602.25 | 1802.17 | 3247828.82 | 0.50 |

Comparing the maximum values of table with and without the outliers suggests that several cities or towns with exorbitant crime rates have been removed. Although the number of observations has decreased, we get a more uniform data set closer to a Gaussian distribution. The skewness and kurtosis statistics below show that we attain a distribution close to normal after excluding the outliers, as the statistics for both skewness and kurtosis are mostly within the desired ranges. We only observe high kurtosis for Motor Vehicle Theft, but even that is much less compared to the kurtosis of this measure including the outliers.

Table 17: Skewness and kurtosis of crime rates per 100,000 people for 2012, excluding outliers.

|  | N | Skewness | | Kurtosis | |
| --- | --- | --- | --- | --- | --- |
|  |  | Statistic | Standard Error | Statistic | Standard Error |
| Murder | 393 | 1.29 | 0.12 | 0.66 | 0.25 |
| Forcible Rape | 396 | 0.72 | 0.12 | -0.21 | 0.25 |
| Aggravated Assault | 401 | 1.14 | 0.12 | 0.54 | 0.24 |
| Robbery | 400 | 1.39 | 0.12 | 1.42 | 0.24 |
| Burglary | 405 | 0.99 | 0.12 | 0.52 | 0.24 |
| Larceny Theft | 403 | 0.64 | 0.12 | -0.24 | 0.24 |
| Motor Vehicle Theft | 379 | 1.67 | 0.13 | 3.20 | 0.25 |
| Total Crime | 405 | 0.63 | 0.12 | -0.36 | 0.24 |

The table below presents the correlations between the dependent variables excluding all the outliers. The correlations do not change drastically after removing the outliers, and we still see significant but relatively low correlations between the dependent variables. The correlation between robbery, burglary, and larceny/theft is high with total crimes, showing that these crimes dominated the total crime rates.

Table 18: Correlation for crime rates per 100,000 people in 2012 across the various categories excluding outliers.

|  |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Murder |  | 0.19*** | 0.41*** | 0.49*** | 0.42*** | 0.32*** | 0.23*** | 0.40*** |
| 2 | Forcible Rape |  |  | 0.42*** | 0.34*** | 0.41*** | 0.43*** | 0.31*** | 0.49*** |
| 3 | Aggravated Assault |  |  |  | 0.58*** | 0.56*** | 0.52*** | 0.32*** | 0.64*** |

| | | | | | |
|---|---|---|---|---|---|
| 4 | Robbery | 0.67*** | 0.55*** | 0.52*** | 0.67*** |
| 5 | Burglary | | 0.64*** | 0.55*** | 0.80*** |
| 6 | Larceny Theft | | | 0.47*** | 0.96*** |
| 7 | Motor Vehicle Theft | | | | 0.58*** |
| 8 | Total Crimes | | | | |
| | N = 339 | | | | |

*** . Correlation is significant at the 0.001 level (2-tailed).

### 3.2. Policy Variable: Recommended Practices for Performance Management Systems

Survey questions are used to construct the policy variables regarding the ways in which the police agencies design and implement their performance management systems. I have included questions about the various performance management attributes such as target selection, measurement indicators, data collection, indicator analysis, reporting, actions on performance results, and general design considerations. These are reflections of the recommendations and advice from scholars. Police agency heads were asked to answer the survey questions based on their knowledge about the state of performance management practices between the years 2009 and 2012.

All the survey questions are based on a five point Likert scale, being:

- Strongly disagree (Coded as 1)
- Disagree (Coded as 2)
- Neither agree nor disagree (Coded as 3)
- Agree (Coded as 4)
- Strongly agree (Coded as 5)

I sent electronic surveys via SurveyMonkey to 1,000 city police chiefs across the U.S. from the 9,283 police agencies contained in the FBI's UCR dataset. These emails were collected through the websites of each agency. After excluding cities and towns with populations below 10,000 and above 500,000 (N=4,100) and with missing data (n=2,021), the sample stood at 2,079 agencies.

I selected small- and medium-sized cities for the study as we can find many existing studies in the literature on performance management systems in large police agencies (e.g., New York and Los Angeles), while there are relatively fewer such studies for small- and medium-sized agencies. Performance management systems were initially adopted by larger cities and are fairly widespread in such cities. Smaller and medium-sized cities have only started to adopt these systems. Furthermore, I believe the characteristics of crime and performance management would differ between large and small- to medium-sized cities. I was also concerned that police chiefs of larger cities might be less likely to respond to the surveys compared to the chiefs of smaller cities.

I sorted the small- and medium-sized cities (n=2,079) alphabetically and, using systematic sampling, selected every other agency in the list (n=1,039). I searched for the email addresses of the police chiefs on their respective websites. Whenever not available, I sent emails to the secretaries and assistants asking them to provide me with the emails of the chiefs (n=1,000). Finally, the selected 1,000 police chiefs were sent an alert letter on October 17, 2013 introducing the nature and objectives of the study. I sent the online link in an email on October 22, 2013, which directed the respondents to the survey link on the SurveyMonkey website with November 6, 2013 as the survey completion deadline. I sent three reminders, on October 29, November 3, and November 6, 2013, and final deadline brief extension of two days on November 7, 2013. The letters are attached in Appendix A through F.

The first response was received on October 22, 2013 and the last was received on November 8, 2013. A total of 414 responses were received from 44 of the 50 states, which puts the response rate at 41.4%. Some of these responses had missing values. After

removing the cases with missing values to at least one of the questions in the survey and removing the outliers, the number of observations stands at 269 cases. Given the high number of observations with missing values, I chose not to use samples with any missing values, as none of the available methods are perfect and the results might have been impacted given the extremely high number of missing values in the data.

## 3.3. <u>Control variables</u>

### 3.3.1.   *Strategic Planning:*

Bryson (2004) defines strategic planning as "a disciplined effort to produce fundamental decisions and actions that shape and guide what an organization (or other entity) is, what it does, and why it does it" (p. 6). Scholars such as Poocharoen and Ingraham (2007), Moynihan (2008), and Poister (2010) have suggested that performance measurement is done in tandem with strategic planning. Coleman (2008) argues that the implementation of performance measurement systems cannot improve organizational performance in the absence of an established strategic plan.

Researchers using the Meier and O'Toole model, such as Andrews et al. (2006), Meier, O'Toole, and Boyne (2007), Walker et al. (2010), and Poister et al. (2013), showed strategic planning to have an impact on organizational performance, while Poister, Pasha, and Edwards (2013) showed that performance measurement was formulated through organizational strategic planning in a local transit industry. Deriving results from these studies, I have assumed that the relation between the adoption of strategic planning and performance improvement will be positive. The following survey questions were used to explain strategic planning:

- *Survey Item 30: Our agency developed strategies through a systematic planning process after analyzing the needs, interests, challenges, opportunities, and expectations of various external stakeholders (Source: Poister, Pasha, & Edwards, 2013).*
- *Survey Item 31: We conducted a situational analysis examining the strengths, weaknesses, opportunities, and threats to identify the strategic issues facing our agency (Source: Poister, Pasha, & Edwards, 2013).*
- *Survey Item 32: We have established strategic goals and used them to drive decisions and actions throughout the agency (Source: Poister, Pasha, & Edwards, 2013).*

The table below shows descriptive statistics for the responses of police chiefs regarding the extent to which they use strategic planning.

Table 19: Descriptive statistics for survey items representing strategic planning.

|  | N | Minimum | Maximum | Mean | Standard Deviation | Variance | Coefficient of Variation |
|---|---|---|---|---|---|---|---|
| Survey Item 30 | 406 | 1.0 | 5.0 | 3.70 | 0.82 | 0.68 | 0.22 |
| Survey Item 31 | 407 | 1.0 | 5.0 | 3.65 | 0.87 | 0.75 | 0.24 |
| Survey Item 32 | 406 | 1.0 | 5.0 | 3.93 | 0.85 | 0.72 | 0.22 |

### 3.3.2. *Logical Incrementalism:*

Logical incrementalism, or muddling through, is an approach to strategy formulation which advocates small changes and improvements to be made over time to the organization based on previous experiences and arising issues (Lindblom, 1959, 1979). Studies such as Andrews, Boyne (2006), Walker et al. (2010), Andrews et al. (2009), Meier, O'Toole, and Boyne (2007), Poister, Pasha, and Edwards (2013), and Poister, Pasha, and Edwards (forthcoming), have included logical incrementalism as an alternate management approach to strategic planning and have found it to have mixed impacts on organizational performance. Questions are included in the table below to find out the extent to which organizations engage in logical incrementalism. These questions are derived from Poister, Pasha, and Edwards (2013). See below for survey questions.

- *Survey Item 33: We have frequently reassessed our performance in light of changing circumstances and adjusted strategy accordingly (Source: Poister, Pasha, & Edwards, 2013).*
- *Survey Item 34: We have tried to maintain flexibility for future options and made changes in strategy when suggested by newly emerging information (Source: Poister, Pasha, & Edwards, 2013).*
- *Survey Item 35: Strategy in our agency is heavily influenced by interpersonal relationships and power politics inside and outside the agency (Source: Poister, Pasha, & Edwards, 2013).*

Table 20: Descriptive statistics for survey items representing logical incrementalism.

|  | N | Minimum | Maximum | Mean | Standard Deviation | Variance | Coefficient of Variation |
|---|---|---|---|---|---|---|---|
| Survey Item 33 | 406 | 1.0 | 5.0 | 4.10 | 0.79 | 0.63 | 0.19 |
| Survey Item 34 | 407 | 1.0 | 5.0 | 4.15 | 0.64 | 0.43 | 0.15 |
| Survey Item 35 | 408 | 1.0 | 5.0 | 2.62 | 1.00 | 0.99 | O.38 |

The means for the first two survey items of logical incrementalism are very high, while the mean for the last survey item is on the lower side. This suggests that while the police agencies keep their strategies flexible, they are not so much affected by interpersonal relationships and internal politics.

### 3.3.3. Interaction between Strategic Planning and Logical Incrementalism:

Scholars such as Quinn (1978), Behn (1988), Barzelay and Campbell (2003), and Poister (2010) have advocated the use of strategic planning to be done within a context of purposeful logical incrementalism to have a beneficial impact on organization performance. I believe that it will be erroneous on my part if I do not include strategic management elements in this study, as performance measurement is not only a part of the overall management strategy (Moynihan, 2008) but also works with strategic planning to improve performance (Poister, Pasha, & Edwards, 2013).

### 3.3.4. *Size of police force:*

I used the measure of officer-to-population ratio to define the size of police forces. This measure also serves as the surrogate for the agency's budget and available funds. Scholars such as Sampson and Cohen (1988), Chaiken et al. (1974), Di Tella and Schargrodsky (2004), Kovandzic and Sloan (2002), Marvell and Moody (2006), Levitt (1998), Marvell and Moody (1996), Corman and Mocan (2000), and Sherman and Weisburd (1995) have found that more police officer deployment helps decrease crime rates in the affected areas. I have used total police employees (sworn police officers and civilian police employees) per 100,000 populations. Data for both number of employees and population come from the UCR database.

### 3.3.5. *Population:*

I have used measures of population in the respective jurisdictions. As the sample includes cities and towns between populations of 10,000 and 500,000, there might be vast differences between the samples. These differences in policing and crime dynamics are addressed in the study by including population as a control variable. The figures for population come from the 2010 U.S. Census.

### 3.3.6. *Poverty:*

Poverty was used by Nicholson-Crotty and O'Toole (2004) as a control variable for police performance. Blumstein and Rosenfeld (2008) found that poverty has a negative impact on police performance due to an increase in desperation among the people. In the absence of precise figures of poverty for the cities and towns included in the study, I have used income per capita of each city/town to define this measure as available in the 2010 U.S. Census.

*3.3.7.    Percent Minority:*

Used by Nicholson-Crotty and O'Toole (2004) along with population density and poverty as a measure of socio-economic environment of police departments, this measure was found to have no impact on crime rates (Tilley, 1995; Carrington et al., 1997). Other scholars such as Bianchi et al. (2012), Ousey and Kubrin (2009), Stacey et al. (2011), Blumstein and Rosenfeld (2008), and Cornell (2012) have all found impacts of ethnic composition of the population on crime rates. These data also come from the 2010 U.S. Census.

*3.3.8.    Population Density:*

Scholars such as Nicholson-Crotty and O'Toole (2004) and Bettencourt (2010) used population density as a control variable in their study on the impacts of management strategies on police performance. The population figures come from the UCR data, while the figures for area are derived from the 2010 U.S. Census.

The following table represents the descriptive statistics for the control variables. Looking at the minimum, maximum, standard deviation, and coefficient of variation statistics, we see a high variance among cities on most of the control variables. Only the variables for employee ratio and income per capita show relatively low variation based on the measure of coefficient of variation.

Table 21: Descriptive statistics for control variables.

|  | N | Minimum | Maximum | Mean | Standard Deviation | Variance | Coefficient of Variation |
|---|---|---|---|---|---|---|---|
| Employee Ratio | 408 | 14.21 | 705.09 | 236.55 | 92.38 | 8533.83 | 0.39 |
| Population | 409 | 10022.00 | 398904.00 | 46261.93 | 54106.69 | 2927533804.97 | 1.17 |
| Income per Capita | 409 | 9194.00 | 81290.00 | 22385.41 | 8297.90 | 68855189.90 | 0.37 |
| Percent Minority | 409 | 1.40 | 96.20 | 19.83 | 16.39 | 268.77 | 0.83 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Population Density | 409 | 149.10 | 19290.70 | 2568.43 | 2286.87 | 5229768.90 | 0.89 |

The skewness and kurtosis statistics for the control variables show non-normal distribution for most of the measures, but not as much as for the dependent variables. All variables show high skewness. The variables representing strategic planning and logical incrementalism are shown to be skewed toward the left, while the rest of the control variables are skewed rightwards. The kurtosis statistics also do not show as many peaks as the dependent variables. Percent minority, performance information use, strategic planning, and logical incrementalism have a kurtosis value closer to zero, which suggests that their peaks are not too far above those of a Gaussian distribution.

Table 22: Skewness and Kurtosis of control variables.

| | N | Skewness | | Kurtosis | |
|---|---|---|---|---|---|
| | | Statistic | Standard Error | Statistic | Standard Error |
| Employee Ratio | 408 | 1.45 | 0.12 | 3.80 | 0.24 |
| Population | 409 | 3.23 | 0.12 | 13.57 | 0.24 |
| Income Per Capita | 409 | 2.49 | 0.12 | 10.70 | 0.24 |
| Percent Minority | 409 | 1.34 | 0.12 | 1.70 | 0.24 |
| Population Density | 409 | 3.40 | 0.12 | 16.15 | 0.24 |
| Strategic Planning | 404 | -0.74 | 0.12 | 1.25 | 0.24 |
| Logical Incrementalism | 407 | -1.33 | 0.12 | 4.81 | 0.24 |

Finally, the table below presents the correlation between the control variables and total crime statistics of 2009 and 2012. The correlations suggest that police agencies working in higher crime areas are more likely to hire more officers per capita. Areas with higher income rates and population density are suggested to have lower crime rates, while a higher number of minorities is positively and significantly correlated with crime rates.

Table 23: Correlation for control variables and current and past crime rates.

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| 1 | Employee Ratio | | -0.21*** | -0.03 | 0.25*** | -0.08 | 0.50*** | 0.44*** |
| 2 | Population | | | 0.02 | 0.18*** | 0.07 | 0.01 | 0.02 |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Income Per Capita | -0.28*** | 0.13** | -0.36*** | -0.40*** |
| 4 | Percent Minority | | 0.21*** | 0.40*** | 0.34*** |
| 5 | Population Density | | | -0.10* | -0.13** |
| 6 | Total Crime 2009 | | | | 0.93*** |
| 7 | Total Crime 2012 | | | | |

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed). ***. Correlation is significant at the 0.001 level (2-tailed).

### 3.3.9.    Regions:

In order to control for regional effects, the respondent cities were divided into four regions, Midwest, Northeast, South, and West, based on the states the cities belonged to. The list of states along with their regions is provided below.

Table 24: Regions.

| Midwest | Northeast | South | West |
|---|---|---|---|
| Illinois | Connecticut | Arkansas | Arizona |
| Indiana | Maine | Florida | California |
| Iowa | Massachusetts | Georgia | Colorado |
| Kansas | New Hampshire | Kentucky | Idaho |
| Michigan | New Jersey | Louisiana | Nevada |
| Missouri | New York | Maryland | Oregon |
| Nebraska | Pennsylvania | Mississippi | Utah |
| Ohio | Vermont | North Carolina | Washington |
| South Dakota | | Oklahoma | |
| Wisconsin | | South Carolina | |
| North Dakota | | Tennessee | |
| | | Texas | |
| | | Virginia | |
| | | West Virginia | |

The following table shows the number of respondents (police agencies) in each of the four regions. We can see that all the four regions are represented, with the smallest number of respondents coming from the Northeast, while the most respondents belonged to the South region.

Table 25: Number of respondents per region.

| | Frequency | Percent |
|---|---|---|
| Midwest | 108 | 26 |
| Northeast | 39 | 10 |

| | | |
|---|---|---|
| South | 162 | 39 |
| West | 103 | 25 |
| Total | 412 | 100 |

### *3.3.10. Past Performance:*

Past performance is the principal component of the Meier and O'Toole model (1999, 2001). Past performance not only explains a large part of the current performance in public sector organizations, but also serves as a surrogate for the various organizational and environmental variables for organizations such as leadership quality, employee motivation, job satisfaction, teamwork, communication, fairness, organizational structure, managerial competence, and rewards. Although some of the policy and control variables used in the analysis partially explain aspects such as leadership and communication, there are still many other aspects which are ignored, underlining the importance of using past performance to explain all of these unexplained aspects. Past performance is regularly used in studies in the public sector to find out the size of randomness and to reduce the distortion caused by a multitude of control variables while studying the impact of the management strategy or effort of the outcome measures (Heinrich & Marschke, 2010; see Harris & Sass, 2006; Koedel & Betts, 2008; Rothstein, 2008; Roderick, Jacob, & Bryk, 2004). Hence, I expect past police crime rates to not only serve a as proxy for management structural variables but also for the multitude of factors which might impact crime rates independent of police strategy.

Past performance has been used as a control variable in studies using Meier and O'Toole's model, such as Andrews et al. (2009), Nicholson-Crotty and O'Toole (2004), Meier and O'Toole (2009), and Hicklin et al. (2008). We can find a three- to four-year

difference between past and current performance in similar studies such as Andrews et al.

(2009) and Poister, Pasha, and Edwards (2013).

# CHAPTER 4: RESULTS AND ANALYSIS

## 4.1. Policy and Control Variables from Survey Items

Wherever possible, I used exploratory factor analysis (EFA) using SPSS 20.0 to combine the survey items into their respective variables, while dropping the items with poor loadings. Table 26 below describes the items that make up each of the policy variables and two control (strategic planning and logical incrementalism) policy variables, along with each variable's Cronbach's alpha value. The proposed items to define officer discretion and quality control, however, did not load and hence I used only one item to define them.

Table 26: Survey items used to construct policy and control variables using EFA.

| Variables | Survey Item | Cronbach's Alpha |
|---|---|---|
| Specific Targets | Our departmental performance targets are specific and quantified (for example, reduce violent crime by X% over the next year). | 0.632 |
| | If we set multiple performance targets for the department, we formally specified which are more important and which are least (prioritized the targets). | |
| Alignment with Strategy | We ensured that our departmental targets and performance measures are based on our strategic goals. | 0.623 |
| | We tied the performance targets of our operating units on the overall objectives of the agency. | |
| Communication of Targets | We have regularly communicated departmental performance targets to our officers through a variety of means (written communications, informal communications, meetings and workshops). | 0.806 |
| | We have regularly communicated individual performance targets to our officers through a variety of means (for example, roll calls and performance reviews). | |
| Consultation With Officers | We have regularly consulted with police officers within the ranks before specifying performance targets for our department and units. | 0.830 |
| | We have regularly consulted with officers within the ranks before specifying performance targets for individual officers or teams. | |
| | We have actively sought suggestions and advice from officers within the ranks to improve our performance management system (target selection, performance indicator selection, and analysis and reporting methods used). | |
| Consultation with Citizens | We have actively consulted with citizen groups before setting our goals, objectives, and performance targets. | 0.735 |
| | We have actively sought suggestions and advice from the citizens to improve our performance management system (target selection, performance indicator selection, and analysis and reporting methods used). | |
| Performance Feedback | We have regularly published our unit and department performance reports to the citizens. | 0.689 |
| | We have made our performance reports available on our website (Please provide the URL for the latest report, if applicable). | |
| Leadership Support | As the chief of the department, I have actively supported our department's performance management system. | 0.862 |

| | | |
|---|---|---|
| | Our Mayor or city manager has actively supported the department's performance management system. | |
| | Our city/town council has actively supported the department's performance management system. | |
| Performance Information Use | We have regularly compared the performance of our officers, teams, and units based on their results on performance measures against standards or targets. | 0.891 |
| | We have regularly compared our performance against that of other similar police agencies in our state and/or across the nation to get a clearer idea of our own strengths and weaknesses. | |
| | We have regularly analyzed trends in our performance over time on a weekly, monthly, quarterly, or annual basis. | |
| | We have regularly utilized performance information to develop strategic plans or help inform strategy more generally. | |
| | We regularly utilized performance information to assess and strengthen the performance of individual officers and staff members in our organization. | |
| | We have regularly utilized performance information to develop budgets and allocate resources. | |
| | We have regularly utilized performance information to revise our officer deployment plans. | |
| Strategic Planning | Our agency developed strategy through a systematic planning process after analyzing the needs, interests, challenges, opportunities, and expectations of various external stakeholders. | 0.705 |
| | We conducted a situational analysis examining the strengths, weaknesses, opportunities, and threats to identify the strategic issues facing our agency. | |
| | We have established strategic goals and used them to drive decisions and actions throughout the agency. | |
| Logical Incrementalism | We have frequently reassessed our performance in light of changing circumstances and adjusted strategy accordingly. | 0.715 |
| | We have tried to maintain flexibility for future options and made changes in strategy when suggested by newly emerging information. | |

The Cronbach's Alpha values are fairly high for most factor scores, suggesting the items loaded well on the factors. While most of the items have a Cronbach's alpha of over 0.70 (which is considered good), only three items (target clarity, alignment with strategy, and performance feedback) have a Cronbach's alpha between 0.60 and 0.70, which is considered to be acceptable.

Other independent policy variables where factor scores are not used are presented in the following table:

Table 27: Survey items used to represent some policy variables.

| Variables | Survey Item | Description |
|---|---|---|
| Diversity of Targets | We set performance targets for (select all that apply): <br> • *Reducing criminal victimization (crime prevention).* <br> • *Increasing safety in public places.* | Sum of the number of performance |

| | | |
|---|---|---|
| | • *Improving citizen perceptions of crime decrease/safety.*<br>• *Demonstrating fair and effective use of force.*<br>• *Holding offenders accountable (investigation and prosecution).*<br>• *Providing quality service to the public.*<br>• *Efficiently using financial resources.* | targets used (1 to 7) |
| Officer Discretion | We have given our officers considerable discretion and autonomy in making operation-level decisions to achieve performance targets. | Likert scale of 1-5 |
| Quality Control | We have periodically conducted quality checks on our performance management system and make appropriate changes. | Likert scale of 1-5 |

## 4.2. Data Testing for Policy Variables

### 4.2.1. Test for Normality:

To enhance the analysis further before showing the results, I present the skewness and kurtosis statistics for all variables. These statistics test the normality of the variables. Skewness is the measure of lack of symmetry on the normal distribution. Kurtosis measures whether the data is peaked or flat compared to the Gaussian distribution graph.

The skewness and kurtosis measures for policy variables show that their distribution is close to a Gaussian distribution. Only the variables of alignment with strategy, communication of targets, officer discretion, and performance information use have values slightly over 1. Similarly, the kurtosis values are also not too far away from 0.

Table 28: Skewness and Kurtosis of policy variables.

| | N | Skewness | | Kurtosis | |
|---|---|---|---|---|---|
| | | Statistic | Standard Error | Statistic | Standard Error |
| Specific Targets | 365 | -0.42 | 0.13 | 0.06 | 0.25 |
| Alignment with Strategy | 366 | -1.02 | 0.13 | 2.45 | 0.25 |
| Diversity of Targets | 412 | -0.31 | 0.13 | -1.03 | 0.26 |
| Communication of Targets | 358 | -1.06 | 0.13 | 2.79 | 0.26 |
| Consultation with Officers | 358 | -0.88 | 0.13 | 1.48 | 0.26 |
| Officer Discretion | 354 | -1.08 | 0.13 | 2.55 | 0.26 |
| Leadership Support | 345 | -0.27 | 0.13 | 0.35 | 0.26 |
| Performance Feedback | 349 | 0.17 | 0.13 | -0.52 | 0.26 |
| Performance Information Use | 351 | -1.04 | 0.13 | 2.61 | 0.26 |
| Consultation with Citizens | 349 | -0.24 | 0.13 | -0.57 | 0.26 |
| Quality Control | 351 | -0.88 | 0.13 | 0.21 | 0.26 |

### 4.2.2. *Multicollinearity Analysis:*

To explore collinearity issues between the policy variables, I ran tolerance and variance inflation factor (VIF) statistics. The results do not show high multicollinearity, as shown in the table below. Most variables show VIF values below 5 and hence low multicollinearity. Only the variables for strategy formulation such as strategic planning and logical incrementalism have high VIF statistics, and that too is mainly due to the interaction term between the two variables which is included in the analysis.

Table 29: Multicollinearity statistics for independent variables.

|  | Collinearity Statistics | |
| --- | --- | --- |
|  | Tolerance | VIF |
| Specific Targets | 0.56 | 1.79 |
| Alignment with Strategy | 0.53 | 1.88 |
| Diversity of Targets | 0.83 | 1.21 |
| Communication of Targets | 0.62 | 1.61 |
| Consultation with Officers | 0.67 | 1.48 |
| Officer Discretion | 0.86 | 1.16 |
| Leadership Support | 0.60 | 1.67 |
| Performance Feedback | 0.75 | 1.34 |
| Performance Information Use | 0.39 | 2.59 |
| Consultation with Citizens | 0.75 | 1.34 |
| Quality Control | 0.63 | 1.60 |

However, regressing the variable for performance information use on other policy variables reveals a high collinearity between the variables. This suggests that the regression models based on these policy variables will be affected by multicollinearity issues.

Table 30: Regression analysis with performance information use as dependent variable.

|                              | b        | Std. Error |
|------------------------------|----------|------------|
| Specific Targets             | 0.10*    | 0.27       |
| Alignment with Strategy      | 0.16***  | 0.05       |
| Diversity of Targets         | 0.04*    | 0.05       |
| Communication of Targets     | 0.13**   | 0.02       |
| Communication with Officers  | 0.10*    | 0.05       |
| Officer Discretion           | -0.10*   | 0.04       |
| Leadership Support           | 0.15***  | 0.38       |
| Performance Feedback         | 0.04     | 0.37       |
| Consultation with Citizens   | 0.09*    | 0.05       |
| Quality Control              | 0.31***  | 0.42       |
| R-Square                     | 0.628    |            |

*. Correlation is significant at the 0.05 level.
**. Correlation is significant at the 0.01 level.
***. Correlation is significant at the 0.001 level.

In order to further test for multicollinearity, I conducted Confirmatory Factor Analysis (CFA) using Lisrel 8.80. I obtained good overall model fit indices (RMSEA=0.058, CFI=0.98, SRMR=0.061) and all factor loadings above 0.49. However, I found 8 out of 126 correlations to be significant at the 0.7 level or higher. This suggests that the model fits only when Lisrel allows for a high correlation among the police variables.

### 4.2.3.   T-tests to Measure Non-Response Bias:

Realizing that response bias might be at play, as police agencies with particular characteristics might be more inclined to respond to the survey than others, I ran *t*-tests on the data comparing the respondents to non-respondents on their populations, population densities, violent crime rates, property crime rates, and total crime rates. The following two tables represent the group statistics and independent samples test of the sample data:

Table 31: Group Statistics between responders and non-responders.

| | Responded | N | Mean |
|---|---|---|---|
| Population | Yes | 406 | 45097.96 |
| | No | 594 | 46018.33 |
| Population Density | Yes | 406 | 2579.06 |
| | No | 594 | 2983.20 |
| Violent Crimes | Yes | 406 | 337.15 |
| | No | 594 | 353.81 |
| Property Crime | Yes | 406 | 3357.33 |
| | No | 594 | 3257.99 |
| Total Crimes | Yes | 406 | 3694.48 |
| | No | 594 | 3611.80 |

Table 32: Independent Samples Test between responders and non-responders.

| | F | Sig. | t |
|---|---|---|---|
| Population | 0.96 | 0.33 | -0.27 |
| Population Density | 4.21 | 0.04 | -2.68* |
| Violent Crimes | 0.03 | 0.95 | -0.85 |
| Property Crimes | 0.64 | 0.43 | 0.85 |
| Total Crimes | 0.71 | 0.40 | 0.63 |

The t-test failed to show any bias in most of the agency characteristics, as population, violent crimes, property crimes, and total crime rates are all not significant. Population density, however, is statistically significant between the respondents and the non-respondents. The group statistics show that the mean population density for the non-respondents is higher than that of the respondents. Since the difference in the means of the population densities is inconsequential, and there is no statistically significant difference in means between the other four characteristics, the bias should not cause serious problems for the analyses.

### 4.2.4. Descriptive Statistics and Correlation:

The descriptive statistics for the policy variables are presented in the table below. There is a wide difference between the minimum and the maximum values of the

variables, while the means are above the neutral values but not too high. These results are not surprising, as the adoption and implementation of performance management systems in police agencies is not very advanced in small- and medium-sized agencies. Poister and Streib (1999) found only 77% of police agencies to be using performance management systems as far back as the late 1990s, while only 58% of police agencies were found to be using CompStat, a specific form of performance management system (DeLorenzi et al., 2006).

Police agencies have been refining performance management systems to make them more effective in helping them achieve their objectives (Behn, 2008). This learning curve has allowed them to identify and introduce more recommended practices in designing and implementing performance management systems (Serpas, 2004; Serpas & Morley, 2008; Bratton & Malinowski, 2008). The use of recommended practices in implementing performance management systems in police agencies is not as high as might have been expected given the evolution that performance management systems have gone through over the last couple of decades.

Table 33: Descriptive statistics for factor scores of policy variables.

|  | N | Minimum | Maximum | Mean | Std. Deviation | Variance |
|---|---|---|---|---|---|---|
| Specific Targets | 365 | -2.94 | 2.14 | 0.00 | 1.00 | 1.00 |
| Alignment with Strategy | 366 | -4.12 | 1.83 | 0.00 | 1.00 | 1.00 |
| Diversity of Targets | 349 | 1.0 | 7.0 | 4.88 | 1.83 | 3.34 |
| Communication of Targets | 358 | -4.41 | 1.74 | 0.00 | 1.00 | 1.00 |
| Consultation with officers | 358 | -3.81 | 1.96 | 0.00 | 1.00 | 1.00 |
| Officer Discretion | 354 | 1.00 | 5.00 | 3.88 | 0.68 | 0.47 |
| Leadership Support | 345 | -3.72 | 1.71 | 0.00 | 1.00 | 1.00 |
| Performance Feedback | 349 | -2.29 | 1.88 | 0.00 | 1.00 | 1.00 |
| Performance Information Use | 351 | -4.15 | 2.35 | 0.00 | 1.00 | 1.00 |
| Consultation with Citizens | 349 | -2.98 | 2.36 | 0.00 | 1.00 | 1.00 |
| Quality Control | 351 | 1.00 | 5.00 | 3.51 | 0.83 | 0.69 |

To further analyze the policy variables, please find below the descriptive statistics of aggregate scores instead of factor scores to determine true frequency, mean, and range. The variation in the N is due to non-responses of the surveyed police chiefs on certain questions. Only a moderate use of these practices can be observed.

Table 34: Descriptive statistics for policy variables.

|  | N | Minimum | Maximum | Mean | Std. Deviation | Variance |
|---|---|---|---|---|---|---|
| Specific Targets | 365 | 2.00 | 10.00 | 6.62 | 1.58 | 2.51 |
| Alignment with Strategy | 366 | 2.00 | 10.00 | 7.54 | 1.35 | 1.81 |
| Diversity of Targets | 349 | 1.00 | 7.00 | 4.88 | 1.83 | 3.34 |
| Communication of Targets | 358 | 2.00 | 10.00 | 7.73 | 1.30 | 1.69 |
| Consultation with officers | 358 | 3.00 | 15.00 | 10.94 | 2.07 | 4.29 |
| Officer Discretion | 354 | 1.00 | 5.00 | 3.88 | 0.68 | 0.47 |
| Leadership Support | 345 | 4.00 | 15.00 | 11.54 | 2.03 | 4.10 |
| Performance Feedback | 349 | 4.00 | 15.00 | 10.42 | 2.23 | 4.95 |
| Performance Information Use | 351 | 8.00 | 35.00 | 25.25 | 4.10 | 16.78 |
| Consultation with Citizens | 349 | 2.00 | 10.00 | 6.46 | 1.50 | 2.24 |
| Quality Control | 351 | 1.00 | 5.00 | 3.51 | 0.83 | 0.69 |

The table below represents the correlations of the independent variables. We can see low but significant correlations between these variables. However, some higher correlations stand out in the table. Specific Targets is found to be highly correlated (above 0.50) with Alignment with Strategy and Performance Information Use. Alignment with Strategy is also found to be highly correlated with Performance Information Use. Hence, Specific Targets, Alignment with Strategy, and Performance Information Use are found to be highly correlated with each other. Understandably enough, Communication of Targets was also found to be correlated with Consultation with Officers. Both these variables are also found to be correlated with Performance Information Use.

Table 35: Correlation for policy and other management variables.

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Specific Targets | | 0.59** | 0.26** | 0.47** | 0.33** | -0.03 | 0.46** | 0.28** | 0.56** | 0.26** | 0.37** | 0.43** | 0.18** |
| 2 | Alignment with Strategy | | | 0.29** | 0.53** | 0.38** | 0.12* | 0.47** | 0.30** | 0.64** | 0.31** | 0.43** | 0.52** | 0.29** |
| 3 | Diversity of Targets | | | | 0.31** | 0.18** | 0.07 | 0.28** | 0.18** | 0.36** | 0.19** | 0.25** | 0.28** | 0.24** |
| 4 | Communication of Targets | | | | | 0.53** | 0.17** | 0.43** | 0.26** | 0.63** | 0.27** | 0.45** | 0.47** | 0.37** |
| 5 | Consultation with Officers | | | | | | 0.26** | 0.37** | 0.21** | 0.51** | 0.29** | 0.35** | 0.39** | 0.26** |
| 6 | Officer Discretion | | | | | | | 0.16** | 0.15** | 0.14* | 0.19** | 0.22** | 0.18** | 0.13* |
| 7 | Leadership Support | | | | | | | | 0.37** | 0.57** | 0.34** | 0.41** | 0.40** | 0.25** |
| 8 | Performance Feedback | | | | | | | | | 0.37** | 0.31** | 0.33** | 0.26** | 0.16** |
| 9 | Performance Information Use | | | | | | | | | | 0.40** | 0.60** | 0.60** | 0.36** |
| 10 | Consultation with Citizens | | | | | | | | | | | 0.27** | 0.36** | 0.18** |
| 11 | Quality Control | | | | | | | | | | | | 0.44** | 0.24** |
| 12 | Strategic Planning | | | | | | | | | | | | | 0.50** |
| 13 | Logical Incrementalism | | | | | | | | | | | | | |

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

## 4.3. OLS Regression Analysis

Following the Meier and O'Toole (1999, 2000) model, I have used OLS Regression to conduct the analysis. Although some multicollinearity issues persist, the data is fairly normal. The OLS regression results are provided below. The annual reported crime rates for 2012 in seven categories and total crime rates for towns and cities in the sample serve as the dependent variables. For an improved analysis, I am showing regression results for the sample including, as well as excluding, the outliers.

I have included eleven policy variables which measure the recommended best practices, each related to a particular hypothesis. The variables measure the degree to which each police organization reported that it provided specific targets, aligned performance measures with organizational strategy, had a wide variety of targets, communicated targets to the officers, provided discretion to the officers, consulted with

citizens, provided feedback to public, leadership supported performance management systems, engaged in regular quality control, and used performance information to make organizational decisions. Nine out of eleven of these recommended practices come under the ambits of goal-setting theory, while the other two are popular in the police performance management literature.

Furthermore, I have included control variables such as income per capita, percent minority, population density, officer-to-population ratio, and regions of the location of the agency, as these variables have been shown to influence crime rates in previous research. Following the recommendations of the Meier and O'Toole model (1999, 2001), past performance in terms of reported crime rates in 2009 is included as the supercontrol variable, which serves as a surrogate for the various organizational and environmental variables which might have an impact on organizational performance.

Below, I present the OLS regression results for the reported crime rates in eight categories including as well as excluding the outliers. In the discussion section, I will talk about the implication of these results on the hypotheses, and I will end with a conclusion where I will discuss the theoretical and practical implications, along with the weaknesses of this study and suggestion for future research.

### 4.3.1.    *Murder and manslaughter:*

The impact of recommended practices on the rate of murder and manslaughter (reported crime per 100,000 population) is minimal, as only the recommended practice of making use of the performance information generated through the performance measurement system to analyze the results and make decisions is suggested to be

significantly impacting murder rates. The table further suggests that formulating

strategies through either strategic planning or logical incrementalism helps police

agencies perform better in terms of decreasing murder rates, while formulating strategies

through a blended approach of the two methods is counterproductive. These findings are

contrary to other findings (e.g., Poister, Edwards, Pasha, & Edwards, 2013) which

suggest that a blended approach for strategy formulation supports better performance in

organizations. Other findings suggest that murder rates are higher in areas with higher

income per capita, percentage of minorities, population, and more police employees per

capita. Murder rates in the cities and towns in the Northeast region seem to be lower than

those in the West region.

Table 36: OLS Regression models for murder and manslaughter crime rates for 2012.

|  | Including Outliers | | Excluding Outliers | |
|---|---|---|---|---|
|  | b | Std. Error | b | Std. Error |
| Specific Targets | 0.23 | 0.25 | 0.23 | 0.25 |
| Alignment with Strategy | 0.12 | 0.28 | 0.12 | 0.28 |
| Diversity of Targets | 0.16 | 0.11 | 0.16 | 0.11 |
| Communication of Targets | 0.34 | 0.25 | 0.34 | 0.25 |
| Consultation with Officers | 0.17 | 0.24 | 0.17 | 0.24 |
| Officer Discretion | 0.10 | 0.29 | 0.10 | 0.29 |
| Leadership Support | -0.01 | 0.23 | -0.01 | 0.23 |
| Performance Feedback | -0.10 | 0.20 | -0.10 | 0.20 |
| Performance Information Use | -0.96*** | 0.32 | -0.96** | 0.32 |
| Consultation with Citizens | 0.15 | 0.20 | 0.15 | 0.20 |
| Quality Control | 0.01 | 0.27 | 0.01 | 0.27 |
| Strategic Planning | -1.90* | 1.03 | -1.90* | 1.03 |
| Logical Incrementalism | -2.23* | 1.07 | -2.23* | 1.07 |
| Strategic Planning*Logical Incrementalism | 0.38* | 0.20 | 0.38* | 0.20 |
| Income Per Capita | 0.00003* | 0.00 | 0.00003*** | 0.00 |
| Percent Minority | 0.04* | 0.01 | 0.04** | 0.01 |
| Population Density | 0.00 | 0.00 | 0.00 | 0.00 |
| Population | 0.00001* | 0.00 | 0.00001*** | 0.00 |
| Employee Ratio | 984.40*** | 231.34 | 984.40*** | 231.34 |
| Northeast | -1.22* | 0.72 | -1.22* | 0.72 |
| Midwest | 0.31 | 0.53 | 0.31 | 0.53 |
| South | -0.11 | 0.52 | -0.11 | 0.52 |
| Murder Rates for 2009 | 0.13*** | 0.04 | 0.13*** | 0.04 |
| R-Square | 0.35 | | 0.35 | |
| N | 269 | | 269 | |
| Significance *p=0.05. **p=0.01. ***p=0.001. | | | | |

### 4.3.2. Forcible Rape:

The results suggest that consultation with officers in designing and implementing performance management systems helps decrease the per capita rates of forcible rapes, only when we included the outliers. No impact of any of the recommended practices is found to be significant for this category of crime. An overwhelming majority of the regressions results mirror these results. Similar to murder and manslaughter, having more police employees per capita is related to an increase in the crime rates in this category. A larger number of minorities and higher income per capita, however, is suggested to be decreasing forcible rapes.

Table 37: OLS Regression modes for forcible rape crime rates for 2012.

|  | Including Outliers | | Excluding Outliers | |
|---|---|---|---|---|
|  | b | Std. Error | b | Std. Error |
| Specific Targets | -1.24 | 1.65 | 0.11 | 1.37 |
| Alignment with Strategy | -0.87 | 1.83 | -0.18 | 1.50 |
| Diversity of Targets | -0.25 | 0.69 | -0.75 | .57 |
| Communication of Targets | 0.92 | 1.62 | 1.45 | 1.34 |
| Consultation with Officers | -2.81* | 1.55 | -1.62 | 1.33 |
| Officer Discretion | 1.69 | 1.88 | 0.90 | 1.55 |
| Leadership Support | 0.45 | 1.47 | -0.30 | 1.21 |
| Performance Feedback | -0.84 | 1.29 | 0.13 | 1.06 |
| Performance Information Use | 0.49 | 2.06 | -0.84 | 1.70 |
| Consultation with Citizens | 1.04 | 1.32 | 0.88 | 1.09 |
| Quality Control | 0.33 | 1.75 | -0.34 | 1.44 |
| Strategic Planning | 4.60 | 6.73 | 6.93 | 5.51 |
| Logical Incrementalism | -0.13 | 7.02 | 4.06 | 5.77 |
| Strategic Planning*Logical Incrementalism | -0.33 | 1.32 | -1.00 | 1.08 |
| Income Per Capita | -0.001*** | 0.00 | -0.001*** | 0.00 |
| Percent Minority | -0.28** | 0.09 | -0.22*** | 0.08 |
| Population Density | 0.001 | 0.001 | 0.001 | 0.001 |
| Population | 0.00 | 0.00 | 0.00002* | 0.00 |
| Employee Ratio | 3523.16* | 1522.36 | 2472.51* | 1254.85 |
| Northeast | -0.91 | 4.68 | 1.59 | 3.85 |
| Midwest | 2.91 | 3.47 | 3.55 | 2.88 |
| South | 1.01 | 3.42 | 1.39 | 2.81 |
| Forcible Rape Rates for 2009 | 0.51*** | 0.05 | 0.48*** | 0.05 |
| R-Square | 0.45 | | 0.50 | |
| N | 269 | | 262 | |
| Significance *p=0.05. **p=0.01. ***p=0.001. | | | | |

### 4.3.3. Aggravated Assaults:

The results suggest that none of the recommended practices to design and implement performance measures systems have an impact on aggravated assault rates. The results further suggest that aggravated assaults are less likely to occur in areas with higher income per capita.

Table 38: OLS Regression modls for aggravated assault crime rates for 2012.

|  | Including Outliers | | Excluding Outliers | |
|---|---|---|---|---|
|  | b | Std. Error | b | Std. Error |
| Specific Targets | -3.23 | 8.43 | -3.19 | 8.44 |
| Alignment with Strategy | -12.30 | 9.33 | -13.09 | 9.38 |
| Diversity of Targets | 4.84 | 3.57 | 4.80 | 3.57 |
| Communication of Targets | .312 | 8.30 | -0.10 | 8.32 |
| Consultation with Officers | 5.02 | 7.94 | 5.32 | 7.95 |
| Officer Discretion | -9.37 | 9.73 | -10.12 | 9.77 |
| Leadership Support | 1.72 | 7.51 | 1.69 | 7.51 |
| Performance Feedback | -1.10 | 6.62 | -0.98 | 6.62 |
| Performance Information Use | 5.21 | 10.61 | 5.59 | 10.63 |
| Consultation with Citizens | 5.46 | 6.78 | 5.03 | 6.80 |
| Quality Control | -9.06 | 8.92 | -8.35 | 8.97 |
| Strategic Planning | -10.53 | 34.40 | -10.24 | 34.42 |
| Logical Incrementalism | -17.74 | 35.70 | -17.26 | 35.73 |
| Strategic Planning*Logical Incrementalism | 3.11 | 6.73 | 3.08 | 6.73 |
| Income Per Capita | -0.002* | 0.001 | -0.002* | 0.001 |
| Percent Minority | 0.27 | 0.49 | 0.32 | 0.50 |
| Population Density | -0.003 | 0.003 | -0.003 | 0.003 |
| Population | 0.00 | 0.00 | 0.00 | 0.000 |
| Employee Ratio | 1273.92 | 7933.18 | 172.75 | 8043.24 |
| Northeast | 0.26 | 23.83 | 1.01 | 23.86 |
| Midwest | -3.50 | 17.77 | -2.86 | 17.80 |
| South | 5.35 | 17.58 | 5.65 | 17.59 |
| Aggravated Assault Rates for 2009 | 0.64*** | 0.04 | 0.65*** | 0.04 |
| R-Square | 0.71 | | 0.69 | |
| N | 269 | | 268 | |
| Significance *p=0.05. **p=0.01. ***p=0.001. | | | | |

*4.3.4. Robbery:*

Only the recommended practice of providing discretion to officers is suggested to help decrease reported robbery crime rates in US cities/towns. An increase in income per capita, however, is found to increase the number of robbery incidents.

Table 39: OLS Regression models for robbery crime rates for 2012

|  | Including Outliers | | Excluding Outliers | |
|---|---|---|---|---|
|  | b | Std. Error | b | Std. Error |
| Specific Targets | -1.35 | 2.44 | -1.61 | 2.36 |
| Alignment with Strategy | -2.24 | 2.69 | -2.07 | 2.61 |
| Diversity of Targets | 1.27 | 1.03 | 1.03 | 1.00 |
| Communication of Targets | -0.12 | 2.43 | 0.50 | 2.35 |
| Consultation with Officers | 2.18 | 2.29 | 2.81 | 2.22 |
| Officer Discretion | -9.02*** | 2.78 | -8.65*** | 2.68 |
| Leadership Support | -0.53 | 2.17 | -1.10 | 2.10 |
| Performance Feedback | 2.44 | 1.91 | 1.78 | 1.86 |
| Performance Information Use | -2.97 | 3.06 | -2.34 | 2.97 |
| Consultation with Citizens | 1.36 | 1.99 | 1.66 | 1.94 |
| Quality Control | 0.36 | 2.58 | -0.04 | 2.51 |
| Strategic Planning | 0.81 | 9.94 | 1.12 | 9.59 |
| Logical Incrementalism | -2.39 | 10.33 | -2.13 | 9.95 |
| Strategic Planning*Logical Incrementalism | 0.20 | 1.95 | 0.05 | 1.88 |
| Income Per Capita | 0.00002*** | 0.00 | 0.00002* | 0.00 |
| Percent Minority | -0.15 | 0.16 | -0.18 | 0.16 |
| Population Density | 0.00 | 0.001 | 0.00 | 0.001 |
| Population | 0.00 | 0.00 | 0.00 | 0.00 |
| Employee Ratio | -3049.54 | 2398.40 | -1020.49 | 2365.71 |
| Northeast | 2.75 | 6.92 | 0.95 | 6.68 |
| Midwest | 6.33 | 5.21 | 5.39 | 5.04 |
| South | 6.66 | 5.06 | 4.17 | 4.92 |
| Robbery Rates for 2009 | 0.75*** | 0.03 | 0.74*** | 0.03 |
| R-Square | 0.87 | | | 0.84 |
| N | 269 | | | 265 |
| Significance *p=0.05. **p=0.01. ***p=0.001. | | | | |

*4.3.5.    Burglary:*

Contrary to the hypothesis, the recommended practice of having performance targets for a wide variety of police objectives is suggested to increase burglary rates only in the model including the outliers. Providing more discretion to the officer is also found to be counterproductive, and the OLS results in both models suggest that this practice helps increase burglary incidents. Cities and towns with a higher income per capita and percentage of minorities also show higher burglary rates in the model including outliers, while these are not significant for the model without the outliers. The Midwest and South regions report fewer burglaries compared to the West region.

Table 40: OLS Regression models for burglary crime rates for 2012.

|  | Including Outliers | | Excluding Outliers | |
| --- | --- | --- | --- | --- |
|  | b | Std. Error | b | Std. Error |
| Specific Targets | -11.27 | 17.79 | -8.90 | 16.62 |
| Alignment with Strategy | -14.74 | 19.62 | -8.05 | 18.36 |
| Diversity of Targets | 14.38* | 7.46 | 10.71 | 6.99 |
| Communication of Targets | 15.01 | 17.56 | 14.70 | 16.40 |
| Consultation with Officers | 2.33 | 16.69 | 2.11 | 15.58 |
| Officer Discretion | 40.90* | 20.39 | 31.65** | 19.10 |
| Leadership Support | 18.65 | 15.83 | 17.88 | 14.78 |
| Performance Feedback | -10.38 | 13.93 | -17.48 | 13.06 |
| Performance Information Use | -7.31 | 22.30 | -2.72 | 20.84 |
| Consultation with Citizens | -8.96 | 14.35 | -2.98 | 13.43 |
| Quality Control | -21.32 | 18.78 | -24.41 | 17.54 |
| Strategic Planning | 33.90 | 72.47 | 27.56 | 67.69 |
| Logical Incrementalism | 37.40 | 75.23 | 32.81 | 70.26 |
| Strategic Planning*Logical Incrementalism | -6.32 | 14.18 | -5.64 | 13.24 |
| Income Per Capita | 0.000004* | 0.002 | 0.00 | 0.002 |
| Percent Minority | 0.21* | 1.10 | -0.18 | 1.03 |
| Population Density | -0.004 | 1.01 | -0.001 | 0.01 |
| Population | 0.00 | 0.00 | 0.00 | 0.00 |
| Employee Ratio | -7634.59 | 16802.05 | -9483.88 | 15693.36 |
| Northeast | -15.82 | 50.52 | -21.58 | 47.18 |
| Midwest | -33.82* | 37.55 | -37.50 | 35.07 |
| South | -52.70* | 36.69 | -57.22* | 34.27 |
| Burglary Rates for 2009 | 0.87*** | 0.04 | 0.86*** | 0.04 |
| R-Square | 0.79 | | 0.81 | |
| N | 269 | | 268 | |
| Significance *p=0.05. **p=0.01. ***p=0.001. | | | | |

### 4.3.6.  Larceny/Theft:

Alignment of performance measures with the overall organizational strategy and goals is found to be effective in reducing larceny and theft rates, but only in the model including the outliers. An increase in income per capita and the number of minorities also suggests a decrease in the rates of larceny and thefts in the model excluding the outliers. Interestingly enough, we can also observe that formulating strategy based only on strategic planning and logical incrementalism has a negative impact on police performance, which goes against the findings for murder rates, where these methods showed a positive impact.

Table 41: OLS Regression models for larceny/theft crime rates for 2012.

|  | Including Outliers | | Excluding Outliers | |
|---|---|---|---|---|
|  | b | Std. Error | b | Std. Error |
| Specific Targets | 7.12 | 45.46 | 1.91 | 45.45 |
| Alignment with Strategy | -83.40* | 49.90 | -78.36 | 50.51 |
| Diversity of Targets | 3.67 | 19.06 | 7.12 | 19.05 |
| Communication of Targets | -59.24 | 45.21 | -60.05 | 45.13 |
| Consultation with Officers | 50.77 | 42.48 | 46.56 | 42.36 |
| Officer Discretion | -75.45 | 51.88 | -64.28 | 52.63 |
| Leadership Support | -16.27 | 40.37 | -15.59 | 40.25 |
| Performance Feedback | -10.19 | 35.40 | -3.65 | 35.40 |
| Performance Information Use | 88.84 | 57.13 | 80.91 | 57.06 |
| Consultation with Citizens | 26.50 | 36.73 | 24.77 | 36.66 |
| Quality Control | -52.25 | 47.98 | -47.03 | 48.08 |
| Strategic Planning | 306.61* | 184.96 | 268.37 | 185.72 |
| Logical Incrementalism | 340.31* | 191.99 | 311.10 | 191.87 |
| Strategic Planning*Logical Incrementalism | -57.32 | 36.18 | -50.69 | 36.22 |
| Income Per Capita | -0.01 | 0.01 | -0.01* | 0.01 |
| Percent Minority | -5.54 | 2.55 | -5.99* | 2.55 |
| Population Density | 0.02 | 0.02 | 0.02 | 0.02 |
| Population | 0.00 | 0.001 | 0.00 | 0.001 |
| Employee Ratio | 61164.17 | 46165.04 | 63491.14 | 47099.96 |
| Northeast | -180.04 | 130.73 | -188.60 | 130.38 |
| Midwest | -162.87 | 95.53 | -174.87* | 95.53 |
| South | -228.13 | 93.59 | -229.84* | 93.44 |
| Larceny/Theft Rates for 2009 | 0.85*** | 0.03 | 0.83*** | 0.04 |
| R-Square | 0.83 | | 0.81 | |
| N | 269 | | 266 | |
| Significance *p=0.05. **p=0.01. ***p=0.001. | | | | |

### 4.3.7. Motor Vehicle Theft:

None of the recommended practices to design and implement performance management are found to have a significant impact on the rate of reported motor vehicle theft. The population density in found to increase motor vehicle thefts in both models, while an increase in employee ratio is suggested to increase such crime in the OLS model excluding the outliers. The Northeast and South regions are also found to have fewer reported motor vehicle theft rates than the West region.

Table 42: OLS Regression models for motor vehicle theft crime rates for 2012.

|  | Including Outliers | | Excluding Outliers | |
|---|---|---|---|---|
|  | b | Std. Error | b | Std. Error |
| Specific Targets | -0.43 | 7.50 | -1.25 | 4.95 |
| Alignment with Strategy | 3.69 | 8.26 | -5.62 | 5.42 |
| Diversity of Targets | -4.68 | 3.16 | -1.49 | 2.08 |
| Communication of Targets | -7.92 | 7.39 | 0.01 | 4.95 |
| Consultation with Officers | 9.68 | 7.03 | 7.14 | 4.62 |
| Officer Discretion | 0.92 | 8.53 | 4.85 | 5.66 |
| Leadership Support | 0.05 | 6.68 | -2.98 | 4.50 |
| Performance Feedback | -6.01 | 5.87 | 0.56 | 3.88 |
| Performance Information Use | 3.37 | 9.39 | -0.40 | 6.30 |
| Consultation with Citizens | 4.75 | 6.05 | 1.78 | 3.98 |
| Quality Control | 4.19 | 7.93 | -5.07 | 5.30 |
| Strategic Planning | -23.38 | 30.53 | 13.91 | 20.13 |
| Logical Incrementalism | -6.69 | 31.75 | 24.58 | 20.93 |
| Strategic Planning*Logical Incrementalism | 2.39 | 5.98 | -4.28 | 3.96 |
| Income Per Capita | -0.001 | 0.001 | -0.001 | 0.001 |
| Percent Minority | 0.21 | 0.47 | -0.31 | 0.342 |
| Population Density | 0.01* | 0.003 | 0.004* | 0.002 |
| Population | 0.00 | 0.00 | 0.00 | 0.00 |
| Employee Ratio | 9520.58 | 7010.19 | 11176.95* | 4923.71 |
| Northeast | -34.55 | 21.70 | -38.35* | 14.31 |
| Midwest | -21.79 | 16.01 | -13.83 | 10.40 |
| South | -35.01* | 15.87 | -28.05* | 10.46 |
| Motor Vehicle Rates for 2009 | 0.78*** | 0.04 | 0.68*** | 0.03 |
| R-Square | 0.76 | | 0.75 | |
| N | 269 | | 249 | |
| Significance *p=0.05. **p=0.01. ***p=0.001. | | | | |

*4.3.8. Total Crime:*

None of the recommended practices is found to have a significant impact on police performance. An increase in minority percentage is suggested to decrease the total reported crime rates, while the Midwest and South regions are found to have lower crime rates than the West region.

Table 43: OLS Regression models for total crime rates for 2012.

| | Including Outliers | | Excluding Outliers | |
|---|---|---|---|---|
| | b | Std. Error | b | Std. Error |
| Specific Targets | -5.01 | 59.47 | -4.77 | 59.68 |
| Alignment with Strategy | -100.00 | 65.34 | -99.69 | 65.62 |
| Diversity of Targets | 21.16 | 24.91 | 21.08 | 24.98 |
| Communication of Targets | -60.96 | 59.16 | -61.20 | 59.37 |
| Consultation with Officers | 59.02 | 55.64 | 59.07 | 55.76 |
| Officer Discretion | -34.79 | 68.07 | -34.65 | 68.24 |
| Leadership Support | 4.79 | 52.78 | 4.73 | 52.90 |
| Performance Feedback | -29.89 | 46.31 | -30.05 | 46.45 |
| Performance Information Use | 100.70 | 74.84 | 100.91 | 75.06 |
| Consultation with Citizens | 20.62 | 48.20 | 20.61 | 48.30 |
| Quality Control | -75.38 | 62.71 | -75.22 | 62.88 |
| Strategic Planning | 292.59 | 241.91 | 292.60 | 242.40 |
| Logical Incrementalism | 352.48 | 250.96 | 352.77 | 251.51 |
| Strategic Planning*Logical Incrementalism | -56.47 | 47.31 | -56.52 | 47.41 |
| Income Per Capita | -0.01 | 0.01 | -0.01 | 0.01 |
| Percent Minority | -6.90* | 3.43 | -6.90* | 3.43 |
| Population Density | 0.02 | 0.02 | 0.02 | 0.02 |
| Population | 0.00 | 0.001 | 0.00 | 0.001 |
| Employee Ratio | 31799.24 | 60810.07 | 31414.63 | 61172.21 |
| Northeast | -203.37 | 170.76 | -202.72 | 171.35 |
| Midwest | -220.92* | 124.95 | -221.00* | 125.21 |
| South | -312.02* | 122.34 | -311.90 | 122.60 |
| Total Crime Rates for 2009 | 0.87*** | 0.03 | 0.87*** | 0.03 |
| R-Square | 0.86 | | 0.86 | |
| N | 269 | | 268 | |
| Significance *p=0.05. **p=0.01. ***p=0.001. | | | | |

4.4. <u>Discussion</u>

The table below summarizes the OLS regression results presented in the above section. The rows represent the dependent variables and the columns represent the recommended practices. The recommended practices that came out to be statistically significant in helping reduce crime rates at least at a *p*-value of 0.05 on a one-tailed test are marked in green color with an arrow pointing downwards. The results which were contradictory to the hypotheses and suggested an increase in per capita crime rates with an increased use of recommended practices in designing and implementing performance management systems are marked in red with an arrow pointing upwards.  The following table shows the results of the OLS regressions including the outliers:

Table 44: Summary of results – crime rates in 2012 v/s recommended practices including outliers.

| | Spec. Targets | Align. w/ Strategy | Div. of Targets | Comm. of Targets | Cons. w/ Officers | Officer Discretion | Lead. Support | F/back to Officers | Perf. Info. Use | Cons. w/ Citizens | Quality Control |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Murder and Mans. | | | | | | | | | ↓ | | |
| Forcible Rape | | | | | ↓ | | | | | | |
| Aggr. Assault | | | | | | | | | | | |
| Robbery | | | | | | ↓ | | | | | |
| Burglary | | | ↑ | | | ↑ | | | | | |
| Larceny/ Theft | | ↓ | | | | | | | | | |
| Motor Vehicle Theft | | | | | | | | | | | |
| Total crime | | | | | | | | | | | |

We can observe only four instances out of 88 where the results were found to be statistically supporting the hypothesis, while two instances suggest a harmful impact of the use of recommended practices on police performance.

The table below shows the results of the OLS regressions excluding the outliers:

Table 45: Summary of results – crime rates in 2012 v/s recommended practices excluding outliers.

| | Spec. Targets | Align. w/ Strategy | Div. of Targets | Comm. of Targets | Cons. w/ Officers | Officer Discretion | Lead. Support | F/back to Officers | Perf. Info. Use | Cons. w/ Citizens | Quality Control |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Murder and Mans. | | | | | | | | | ↓ | | |
| Forcible Rape | | | | | | | | | | | |
| Aggr. Assault | | | | | | | | | | | |
| Robbery | | | | | | ↓ | | | | | |
| Burglary | | | | | | ↑ | | | | | |
| Larceny/ Theft | | | | | | | | | | | |
| Motor Vehicle Theft | | | | | | | | | | | |
| Total crime | | | | | | | | | | | |

A look at the above table also reveals only a weak link between the recommended practices to design and implement performance management systems and police performance in terms of the reported crime rates. Only two (officer discretion and performance information use) of the eleven recommended practices were found to be supporting the hypotheses for murder and robbery crimes respectively. Officer discretion, however, is found to increase burglary crime rates, which is against the hypothetical expectations of the study.

The following table links these results back to the components of goal-setting theory, which forms the theoretical framework of this study:

Table 46: Recommended practices and goal-setting theory, including results.

| Conditions | Recommended Practices | Support for Hypotheses |
|---|---|---|
| Clarity | Specific Targets (H1) | 0 of 8 |

| | Alignment with Strategy (H2) | 0 of 8 |
|---|---|---|
| | Diversity of Targets (H3) | 0 of 8 |
| | Communication of Targets (H4) | 0 of 8 |
| Commitment | Communication of Targets (H4) | 0 of 8 |
| | Consultation with Officers (H5a) | 0 of 8 |
| | Officer Discretion (H5b) | 1 of 8 |
| | Leadership Support (H6) | 0 of 8 |
| | Performance Information Use (H8) | 1 of 8 |
| Feedback | Performance Feedback (H7) | 0 of 8 |
| | Performance Information Use (H8) | 1 of 8 |
| Challenging | ??? | |
| Miscellaneous | Consultation with Citizens (H9) | 0 of 8 |
| | Quality Control (H10) | 0 of 8 |

As reported earlier, only officer discretion and performance information were found to support the hypothesis only in a single iteration out of eight. It is curious that the commitment and feedback components of goal-setting theory are found to have a positive impact on performance, while the clarity component showed no such impact. The two recommended practices which could not be linked to any of the four components of goal-setting theory also did not show any significant results.

I suspect that these results appear significant by chance only. If we adopt the rule of thumb to consider the results to be significant at least 5% of the time based on chance, it can be noted that three instances (two supporting and one opposing results) where the results came out to be significant can be attributed to chance. I would, hence, prefer to err toward being cautious and would not consider these three results to be meaningful. These results, hence, do not show any significant impact on police performance.

### 4.4.1. Specific Targets (Hypothesis 1):

Goal clarity is one of the essential assumptions of goal-setting theory and is considered to be an important aspect of designing performance management systems for

police agencies (Hagar & Hobson, 2001; Moore & Braga, 2003; Shane, 2000). It is argued that clear and specific goals help direct the energies of the employees and the agencies toward the desired activities and in specific amounts, rather than being scattered and diffused among the necessary and unnecessary activities (Carroll & Tosi, 1973; Boyne, 2006). The OLS regression results, however, do not support this notion as the variable for target clarity does not come out to be significant for any of the seven measures of crimes or for total crimes.

These findings do not support the expectations of police scholars and practitioners such as Shane (2000) or Moore and Braga (2003). Other police scholars such as Roberts (2006) and practitioners such as Bratton (1998) strongly supported that the targets for police agencies should be specific and quantifiable. Bratton's assertions are especially important as, being the police chief of New York in the 1990s, he was one of the designers and implementers of the first CompStat system. The null findings on this measure provide support to other police scholars who do not have a favorable view of defining clear and quantifiable targets for crimes, as crime reduction is considered to be a complex affair and is dependent upon holistic socio-economic dynamics (Weisburd et al., 2003).

While it cannot be ascertained whether it is the case in this study or not, these findings may concur with those of Seijts and Latham (2001), who proposed that clear and specific goals yield lower performance when employees lack the required knowledge to do the job or when goals are not challenging (Miner, 2006). Although crimes under the category of murder and manslaughter are the most valid crime rates available in the UCR, they are largely unpredictable, complicated, and not under the direct control of police

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agencies for multiple reasons (Sherman, 1992). Setting clear and specific targets might

encourage police agencies to focus resources on attaining their goals instead of engaging

in learning behavior, which is needed to find ways to improve understanding regarding

complex social problems such as murder and manslaughter (Kanfer & Ackerman, 1989;

Latham & Locke, 2007).

There might be other weaknesses with the study which might have contributed to

the null findings. Being a cross-sectional study, this dissertation ignored the length of

time since the police agencies might have been providing clear targets along with setting

priorities for them. Recommended practices are considered to be more effective when

they are in place for a longer time as the organizations become accustomed to them and

learn to benefit from them. Since the surveys were directed toward police chiefs, they

might have biased opinions on how much specificity exists in the goals and targets they

set. Police chiefs might have a high opinion of their own ability to set specific goals, or

be satisfied with the way they set these targets. In relatively larger police agencies, it

might not even be the police chief who sets these targets, as the captains might be

responsible for setting targets for their teams. Hence, the chief would have limited

knowledge of how specific these targets might be.

Furthermore, having specific targets is only one of many management practices,

while there are other more important factors (e.g., socio-political and socio-economic

environment) which might impact crime rate statistics. Hence, even if the effect of having

specific targets might be real, it might not be large enough to show significant impacts,

given the small sample size of the study. Although the VIF scores did not suggest so, I

suspected multicollinearity to be at play (based on the CFA analysis) in producing the

null findings for the impact of recommended practices on police performance. In order to check for this issue, I ran bivariate correlations between the policy variables and the dependent variables. I found only a couple of instances where specific targets might have been weakly correlated with any of the dependent variables. Hence, it can be argued that while multicollinearity might exist among the policy variables, it might not be the reason for producing these null findings.

### 4.4.2. Alignment with Strategy (Hypothesis 2):

Aligning performance measures and targets with broader organizational strategy was not found to increase performance of police agencies. Only one out of the 8 categories of crime (larceny/theft) was affected positively by the use of this practice, but these results did not remain significant when we conducted the analysis removing the outliers.

By aligning performance measures and targets with overall strategy, police agencies can assure that the activities that might have no or harmful impacts on attaining broader organizational goals are avoided (Tangen, 2004; Shane, 2000; Poister, 2003; Coleman, 2008). The null findings of the regression results do not provide support to the assertions of police scholars such as Coleman (2008) and Moore and Braga (2003), who recommended that police agencies base their performance indicators on overall agency goals and strategies. Performance measures based on short-term targets might not be useful in helping reduce crimes that require long-term behavioral, economic, and cultural change, such as reducing the number of forcible rapes and robberies (Latham & Locke, 1991; Kanfer & Grimm, 1978). The results supporting null hypotheses also strike a chord with studies in other contexts such as by Ittner et al. (2003), who found that aligning

performance measures to organizational strategy had no impact on the performance of private firms.

These results, however, might be caused by some of the weaknesses similar to the ones mentioned in the specific targets section. Aligning targets for a longer period of time produces more long-term clarity among the employees, and hence the employees in such an agency would have better performance than the ones belonging to an agency which recently aligned its performance measures to overall strategy and goals. Being high-up in the organization, the police chiefs are more aware of the broader organizational goals than the officers. While the link between the overall goals and performance measures might be more obvious for the chiefs, the officers might struggle to understand that link. The chiefs might also have biased opinions of their ability to link the measures to the goals. Although aligning performance measures to organizational strategy might be a good practice, it might not have enough of an impact to be detected with such a small sample. Similar to specific targets, I did not find alignment with strategy to be strongly correlated with policy variables, which reduces the chance of multicollinearity in influencing these results.

### 4.4.3. Diversity of Targets (Hypothesis 3):

The police literature supports the notion of having a wide variety of performance goals (Shane, 2000; Moore & Braga, 2003). However, like the previous results, the OLS regression results do not show any impact of having multiple targets on organizational performance. The categories of targets come from the suggestions of police scholars such as Moore and Braga (2003) and Shane (2000), who emphasized that police performance should be measured in terms of reduction in criminal victimization, holding offenders

accountable, increase in safety in public places, increase in a sense of personal security among the citizens, efficient usage of financial resources, and fair and effective use of force. The null and negative impact on performance for this measure leaves it open to police scholars to debate whether such a categorization is as useful as previously thought and whether measuring police performance over a wide variety of outcomes produces the desired results.

However, the study ignores the length of time since a diverse set of targets were available to the employees, which might convolute the results. Being so high up, the police chiefs might be unaware of the target categories available to the employees or even have a biased opinion on how many of the eight categories included in the questionnaire they consider important and have targets for.  The small sample size also does not help capture the real but small effects of this practice. Finally, I did not find significant bivariate correlations between target diversity and the dependent variables, reducing the chances of multicollinearity to influence the results.

### 4.4.4.    *Communication of Targets (Hypothesis 4):*

Goal-setting theory is essentially a theory of internalized or accepted goals (Miner, 2006). Communicating performance targets to the employees is essential to attain agreement and acceptance from them and to keep them motivated (Carroll & Tosi, 1973; Locke & Latham, 1991; Miner, 2006). Although the notion of communicating performance targets having a positive impact on police performance is supported by theory as well as by empirical studies (Butterfield et al., 2004; Shane, 2000; Bratton & Malinowski, 2008), none of the measures of crimes in the various categories were affected by communicating targets to the police officers. The null findings do not provide

support to the findings of Butterfield et al. (2004), who showed that communicating targets throughout the organization is an important practice in police departments in the UK which have adopted performance management systems, or the recommendations of Roberts (2006), who asserted that communication should be organization-wide in a police agency and made available to all the employees.

It is the goal of future research to ascertain whether these findings paint a true picture of the impact of communication on police crime rates. Good communication of performance targets is an established practice in the field, and it is highly likely almost all police agencies engage in good target communication, which decreases variation.

There might, however, be new communication regiments in place, and some police agencies might have been communicating more effectively than others over longer periods of time. Furthermore, the survey was directed toward police chiefs, who might have a more positive opinion of how well they communicate with their officers. Hence, false perceptions of self-performance might explain the null hypotheses regarding this recommended practice. While multicollinearity might not be reason for the null findings, given that the bivariate correlations were also not significant, the small but real effects of this practice on organizational outcomes might not be evident with such a small sample size.

### 4.4.5. *Consultation with Officers (Hypothesis 5a):*

Employee participation is reputed to increase agreement, understanding, commitment, and job satisfaction among employees (Carroll & Tosi, 1973; Vroom, 1965; Wright & Hassan, 2013), and goal-setting theory also attributes a positive impact of

employee participation in decision-making to organizational performance (Latham, Erez & Locke, 1988). The positive effects of participation and consultation are circumstantial, as they are found to work when employees have low intrinsic motivation and people are accustomed to participation (Miner, 2006). The findings from the OLS regression confirm the ambiguity in the literature, as consulting with police officers in specifying performance targets and seeking suggestions to improve performance management systems did not appear to impact any of the measures of crimes.

The police literature is widely supportive of officer consultation to be a necessary condition in order to design and implement performance management, with scholars such as Bratton and Malinowski (2008), Butterfield et al. (2004), Davis et al. (2008), Milligan et al. (2006), Roberts (2006), and Burnett (2007) behind this assertion. It is hence, surprising to see none of the seven measures of crimes being affected by officer consultation.

One of the reasons behind these results might be that only the perceptions of police chiefs were taken on the extent to which they involve their officers in decision-making processes, which might be biased as the police chiefs might have views which might not mirror reality. Also, what different police chiefs might consider to be "good consultation" is open for interpretation, while the nature and requirements of consultation might be different for larger agencies compared to smaller ones, owing to the differences in the number of officers. This study also ignores the length of time since the police agencies started consulting with their officers, while possible real but small effects might also be less likely to be captured with this small sample size. To check for multicollinearity, I ran bivariate correlations between the policy variables and dependent

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variables, where the correlation between officer consultation and the crime rates in different categories did not come out to be statistically significant.

### 4.4.6. Officer Discretion (Hypothesis 5b):

Delegating power to lower-level employees leads to increased organizational performance (Locke, 1996). Providing maximum possible discretion to the employees and holding them accountable only for final performance is considered to yield the best performance from them (Gilmour & Lewis, 2006b; Hatry, 2006). This recommended practice, however, does not live up to expectations as it is found to be significantly and positively impacting only one measure of crime, robbery rates. On the contrary, we see a negative impact on the use of officer discretion on burglary rates, another measure of crime performance. These results are consistent in both the OLS regression models including as well as excluding the outliers. The police literature, on the other hand, is very supportive of providing discretion to the on-the-ground police officers and empowering them to make decisions in order to increase their performance (Shane, 2000; Loveday, 2005b, 2006; Caulkin, 2009; Davis, Cordner, et al., 2008; Milligan et al., 2006; Roberts, 2006).

Since the police officers on the ground have the most current and comprehensive knowledge about criminals, their hideouts, their links, and their activities, empowering them to take an operational role helps reduce red-tape and time to take decisions. Furthermore, discretion helps police officers be more innovative in their techniques. Given so much support in the police as well as the goal-setting literature, it is, hence, surprising to see that the measure for officer discretion has a positive impact on only one of the seven crime categories, and has a harmful impact on another measure of crime.

The increase in burglary crimes due to providing more discretion to officers can, however, be a case of reverse causality where police agencies that are affected by higher crime rates might provide more discretion to their officers in order to deal with them. The harmful impacts can also be attributed to multicollinearity issues, as the bivariate correlation between officer discretion and burglary rates did not come out to be significant.

Furthermore, the study ignores the length of time a particular agency was providing discretion to its officers, and the chiefs of police might have a biased opinion of how much discretion they allow to their officers. As far as other null findings are concerned, it is always difficult to capture the (possible real but) small effects with such a small sample size.

### 4.4.7. *Leadership Support (Hypothesis 6):*

Leadership support is considered to be an essential ingredient in improving organizational performance in the goal-setting theory literature (Miner, 2006; Rodgers & Hunter, 1991). Leaders help increase the use and effectiveness of performance management systems by imparting explicit and credible support and committing time and resources, which is likely to increase importance and commitment among the employees (Latham & Locke, 1991; Moynihan, Pandey, & Wright, 2012; Poister, 2003). The police literature has also emphasized the importance of leadership in implementing effective performance management systems (Shane, 2000; Bratton & Malinowski, 2008; Roberts, 2006). Especially the literature surrounding CompStat is full of emphasis on William Bratton's leadership and support in designing the performance management system for the NYPD. It is hence surprising that the OLS regression results do not show leadership

support having any significant impact on the performance of police agencies for any of the 7 measures of crime representing police performance.

This discrepancy in the results and theoretical expectations can lie in the survey method. As the surveys were directed toward police chiefs, they might be biased in terms of how much they support their respective performance management systems. The survey questions to explore leadership support also included support from political leadership such as the mayor and the city council, which might not be as consequential to the effectiveness of performance management systems as the support from police management leadership. The study also ignores the length of time since leaders started supporting the performance management system. The sample is also too small to be able to capture the possible real but small effects. Multicollinearity, however, might not be an issue here as the bivariate correlations between leadership support and the crime rates in different categories were not found to be significant.

### 4.4.8.    *Performance Feedback (Hypothesis 7):*

Providing performance feedback to the employees on how successful they have been in terms of reducing crimes is another recommended practice which was not found to have no impact on any of the 8 categories of crime, although findings from the police literature such as by Burnett (2007) and Moore & Braga, (2003) strongly support providing performance feedbacks. Choosing Gardena Police Department, California as an exemplary model for performance management system, Burnett (2007) found that the department makes effort for timely dispersion of performance reports through e-mails, printing, and posting on bulletin boards. Moore & Braga (2003) noted that user-friendly reports play an important part in an effective performance management system through their study of the

NYPD. Scholars and practitioners pertaining to the police literature have also found utility in the regular and accessible publication of performance reports in order to reap higher benefits from performance management systems in police departments (Shane, 2000; Butterfield et al., 2004; Moore & Braga, 2003). Feedback is considered to be a necessary condition for goal setting to help improve organizational performance in the goal-setting literature (Miner, 2006; Ivancevich & McMahon, 1982).

Given its support from police as well as the goal-setting literature, it is open to question why feedback did not show any impact on the measures of crimes. While feedback helps employees better understand their strategies and what is expected of them (Carroll & Tosi, 1973), if provided in a disagreeable manner, it might create resentment and hostility among employees, which might be counterproductive to performance (Carroll & Tosi, 1973). Feedback can be ineffective if it is too convoluted for the recipient to extract the right message out of it (Locke & Latham, 1990a). Furthermore, the impact of feedback on performance might only be contextual. For example, providing regular feedback to police officers belonging to agencies with lower crime rates might help increase their morale and motivation. On the other hand, providing regular feedback to officers belonging to poorly performing agencies might lead to a decrease in their sense of self-worth and motivation, especially when the reasons of poor performance are not under their control.

Another possible reason behind these results might lie in the fact that the survey was conducted with police chiefs, who might have biased perceptions of their own competence in terms of their ability to provide feedback to their employees. The study also did not include the length of time since the feedback was provided to the officers. The possible real but small effects of providing feedback to officers might also not have been

noted, given the small sample size. As previously described, I did not find significant bivariate correlations between leadership support and the dependent variables.

### 4.4.9. *Performance Information Use (Hypothesis 8):*

Finally, the entire exercise of measuring performance remains futile unless decisions are made and actions are taken based on the information generated by these systems (Moyniham & Ingraham, 2004; Van Dooren, 2008). Although using performance information is universally recommended in the performance management literature, the goal-setting theory literature does not address this aspect. The police literature, especially pertaining to the implementation of CompStat by NYPD Chief William Bratton emphasized the use of performance information generated from the system to be used to make decisions (Bratton, 1998).

The OLS regression results partially confirm the assertions of the police as well as the performance management literature, as performance information use is by far the most successful of all the recommended practices analyzed in this study. It is the only practice out of the eleven which positively and significantly impacts police performance, as using performance information to make decisions is suggested to reduce murder crime rates in both models, including and excluding the outliers. This positive impact, however, can be attributed to multicollinearity, as the bivariate correlation between performance information use and murder crime rates was not found to be significant.

The null findings for the remaining six categories of crime and total crimes may be explained by the fact that the police chiefs were asked whether they analyzed the information generated through performance measurement systems, and more importantly,

whether they took decisions based on this information and analysis. Police chiefs might have a biased opinion on how well they utilize performance information to run their departments. As in other cases, being a cross-sectional study, this dissertation ignores the impact of utilizing performance information over time. The small but real effects might also be difficult to capture given the small sample size of this study.

### 4.4.10. Consultation with Citizens (Hypothesis 9):

Although citizen participation and involvement in designing and implementing performance management systems for public agencies is considered to be an important practice in improving police performance (Moore & Braga, 2003; Bratton & Malinowski, 2008), it is not given much attention in the goal-setting theory literature. Bratton and Malinowski (2008) saw a positive role of citizen surveys as part of the performance management system in helping them improve police services in New York and Los Angeles. Moore and Braga (2003) also support the use of citizen surveys as part of performance management systems in order to improve police performance.

The results from the OLS regressions do not support the assertions of police literature, as none of the seven measures of crimes were found to be impacted by this practice. While consulting with citizens in other contexts might help police agencies reach other important goals such as improving perceptions about the police and increasing support of their activities (Lawrence & Rick, 2001; Edelenbos & Klijn, 2006), citizen consultation in designing performance management systems does not show any positive results. One reason for these results might be that selecting performance targets and designing performance management systems is a specialized process and requires more expertise than what citizens might offer.

The effects of consulting with citizens over time, as well as the length of time this practice was in use, cannot be determined owing to the cross-sectional nature of this study. Police chiefs might also have a biased opinion of how much they interact with the citizen; moreover, consulting with citizens could mean different things for police chiefs. While smaller police agencies might include informal discussions with citizens as consultation, larger police agencies might regard more formal contacts through meetings as a measure of consultation. The possible real but small effects of this practice might also not be picked up due to the small sample size of this study. There are, however, relatively low chances of multicollinearity causing the null findings as the bivariate correlations between citizen consultation and police performance were not found to be significant.

### 4.4.11. Quality Control (Hypothesis 10):

Performance management systems work in a dynamic environment, and all aspects of performance management systems need to be updated to keep the system relevant and running (Kennerley & Neely, 2002; Mannion & Goddard, 2000). Although regular revisions and upgrade of performance management systems is considered to be an important aspect of performance management systems design and implementation (Tangen, 2004), goal-setting theory is silent on the effectiveness of this measure.

The police literature is also not as vocal on the effectiveness of this practice to help performance management systems reach police outcomes, although police scholars such as Burnett (2007) and Roberts (2006) do recognize it as an important aspect of police management.  Thus, it is not very surprising to observe that this measure failed to significantly affect any of the measures of crimes in the eight categories through the OLS

regressions in both models, including as well as excluding the outliers. The survey addressed the recommended overview of performance management systems by asking two questions, one related to periodic quality checks, and the other asking whether the police agencies used external help in conducting these checks. These two questions, however, did not load on a single factor score. I used only the earlier question to define this measure, which might not give a complete picture of how well agencies conduct quality checks, and more importantly, whether they take decisions based on the recommendations that come out of such checks.

Unlike all of the other recommended practices, police chiefs might be the best people to inquire about this practice, as they would know better than anyone else whether their department conducts quality checks on performance management systems or not. A biased interpretation of what "regular" might mean to the different chiefs, however, might still be at issue. The study also ignores the length of time since the agencies were conducting these quality checks. Furthermore, the possible impacts of quality checks on performance would be too small to be identified, given the small sample size of this study. Bivariate analysis looking at the correlation between conducting quality checks and the various categories of crime also did not show significant results.

# CHAPTER 5: CONCLUSION

## 5.1. Implications for Theory

Although the findings do not suggest a link between the recommended practices and police performance, I have indeed found them related to goal-setting theory. Hence, even with these results, we can find a justification for the use of these practices in goal-setting theory. Goal-setting theory is a well-established theory, and there is a plethora of evidence supporting the various assumptions of goal-setting theory in numerous contexts. Owing to their relation with goal-setting theory, we cannot entirely write off their use.

The null findings might also point toward the incomplete test of goal-setting theory. As we have seen, I could find the recommended practices to be related to only three out of the four components of goal-setting theory. While most of these practices were related to the clarity, commitment, and feedback components of goal-setting theory, I could not link any of the available practices to the challenging component of this theory.

Employees will not exert as much effort to reach goals that are not challenging, as they strive to achieve goals so that they may achieve self-satisfaction as well as recognition from their peers and superiors. Employees are more likely to feel good about their own performance as well as attract praise for their work if the targets are not too easy, and their peers and superiors consider that they have put in effort and skills to achieve these tasks. On the hand, employees are discouraged to exert their effort and skills when the goals are set to be too difficult, as they are not optimistic about reaching them. Hence, it is argued that police literature should include more recommended practices which could be linked back to the challenging component of goal-setting

theory, as setting difficult but doable goals is an essential condition for the success of setting goals.

Furthermore, the results might be a reflection of a weakness in goal-setting theory, where setting clear and specific goals has been recommended to improve performance for rudimentary tasks, but is not found to be as useful to achieve objectives which require innovation, creativity, and learning (Latham and Seijts, 1999; Seijts & Latham, 2001).

### 5.2. Implications for Practice

The purpose of this dissertation was to provide theoretical foundations for the available recommended practices in police literature and test their effectiveness, so we that we might be able to provide clear guidelines to police managers, as well as public managers in general, on how to better design and implement their performance management systems. Unfortunately, these results do not provide us the opportunity to make any such claims. Out of the selected practices, only performance information use and providing discretion to officers were found to be supporting the hypotheses in one instance each. Given that we tested the hypotheses in 88 instances, I suspect these two significant results to be a result of chance alone. These results, hence, raise questions about the efficacy of recommended practices. The results from this study suggest that the most popular recommended practices available in the police literature might not be as effective as they are thought to be. While these practices might be good ways to design and implement performance management systems, their impact is may be too little to be effective in improving organizational performance. Police scholars should look in other directions to find better and more effective ways to design and implement performance management systems.

Furthermore, the effect and need of recommended practices might be contextual. While some recommended practices might be useful in certain situations, they might have a neutral or even negative impact on police performance in other situations. For example, providing performance feedback to officers in areas with lower crime rates would boost their morale and motivate them to work harder. On the other hand, officers might lose their sense of pride and self-worth when they receive consistently negative feedback of their performance in a troubled area of a city, a situation over which they might not even have any control.

5.3. <u>Weaknesses</u>

The study uses cross-sectional analysis and hence neglects the progress in police performance over time, as well as a comparison of pre- versus post-implementation of the recommended practice. The study also ignores the length of time each recommended practice was in place. An extended use of recommended practices has more impact on performance, as not only do these practices become embedded in the organizational culture, but the employees also become accustomed to them and gain experience dealing with them. Furthermore, any problems with the implementation of the practices might also be isolated.

Although I used past performance as the supra control variable for all unknown effects, it is still an incomplete measure to entirely control for the plethora of socio-economic, socio-political, and agency-specific characteristics. To name a few examples, crime rates in any city or town might depend on available job opportunities for the youth, the extent of political discontent among the minority, or whether the police officers are competent to conduct their duties.

The dissertation studies only one aspect of police performance. Although crime rates are important indicators of police performance, they are only a part of a bigger picture of policing success. A reduction in crime rates may or may not have an impact on the perceptions of crime rates among the citizens or sense of safety and security among the citizens. Furthermore, going too far in trying to reduce crimes might result in a brutal use of force and excessive measures by police officers. The adoption of a performance management system by the NYPD is one such example, where increased reports of police abuse and human rights violations were received during the period police adopted a strict implementation of CompStat.

Furthermore, the crime rates used in this study are only the *reported* crimes, which may or may not be a true representation of the *actual* crimes committed in the respective jurisdictions. While some marginal communities might be shy to contact the police due to negative perceptions of the police force, police officers might also be discouraged to look for crimes and avoid dealing with them in order to keep their numbers clean (e.g., see Eterno & Silverman, 2010). Reported crime rates in categories such as motor vehicle thefts are more reliable measures of the actual crime situation compared to forcible rapes, where less than half of cases are reported to the police.

Response bias is another possible source of weakness in the study, as the agencies which use recommended practices in designing and implementing performance management systems might be more interested in responding to the survey, while the others might choose not to. The sample might have thus ignored the performance of agencies which do not use performance management systems.

Biased perceptions of the police chiefs concerning their own ability to design and implement performance management systems might not necessarily be a true reflection of how these systems were actually implemented. In some cases, police chiefs might not even be the right people to ask such questions. For example, police chiefs might have a high opinion of their own ability to set specific goals or provide feedback to the officers, which might not be how the employees on the ground could perceive these characteristics. Police chiefs sitting at the top might not even be aware of the on-the-ground situation, such as how much discretion the captains allow their officers.

The relatively small sample size of the study might prevent us to pick up possible real but small effects of recommended practices on police performance due to low statistical power. Crime rates are too wide a concept to be strongly impacted by a specific management function adopted by the police, while other complex socio-economic factors might be at play to determine the crime rates in a town or city. For example, while the adoption of performance management practices by the police is usually touted as the reasons behind the decrease in crime rates in New York in the late 1990s (Bratton & Malinowski, 2008), Levitt and Dubner (2005) propose in their book *Freakonomics* that the real reason behind this decrease was the legalization of abortion in the 1980s, which helped have fewer young men on the streets of New York.

Reverse causality might be another factor which might explain these weaknesses. As performance management systems are becoming an increasingly popular source to reduce crimes, the police agencies with more performance failures and higher crime rates might be the ones who are the most pressed to use these systems to help them reduce crimes. These agencies might also be more likely to adopt performance management

systems more seriously and following the recommended practices. For example, such police agencies might provide more discretion to their officer to go after criminals or consult with citizens to ensure their buy-in.

Nevertheless, given all its weaknesses, this study is a first step toward empirically verifying the utility of following the recommended practices in designing and implementing performance management systems and provides limited evidence of the effectiveness of following recommended practices.

5.4. Suggestions for Future Research

In order to strengthen future studies, I recommend that time series and panel data study designs be adopted in order to look at the impact of recommended practices on the performance of police agencies over time. Especially data allowing the analysis of police performance before and after the implementation of performance management systems and recommended practices would be extremely useful in determining the effectiveness of these practices.

One of the more important weaknesses in the study was related to the fact that the surveys were directed toward police chiefs, which increased the chances of bias and perception errors. In order to reduce this bias, more police officers from the rank and file should be included in the survey process. Police officers might have a better understanding of the actual situation in their department with respect to certain recommended practices. Asking police officers how well targets are communicated to them and how much discretion they enjoy might be a better determinant of these aspects rather than soliciting the opinions of police chiefs.

As reported earlier in the study, crime rate statistics only provide a partial picture of police performance. Future research should include other aspects of police performance such as citizen perceptions of safety and how well they perceive police to be doing their job in order to better ascertain police performance. Finally, police agencies work in restricted environments where they only have limited control of their outcomes. Police outcomes such as crime reduction, citizen safety perceptions, and holding offenders to account are strongly impacted by other environmental characteristics such as the economy, population pressure, judicial system, and culture. Hence, I propose that future studies examine the impacts of the adoption of performance management systems and recommended practices on police outputs such as arrest rates, patrol hours, and clearance rates. I also propose conducting similar studies in areas such as local transit and waste management, where public agencies might have more control over and impact on their performance outcomes.

# **Appendix:**

Appendix A: Alert letter sent to police chiefs on October 17, 2013.


Dear Chief [LastName],

The Department of Criminal Justice & Criminology at the Georgia State University and I are interested in learning about performance management practices in the US police agencies over the past few years. To this end, we are conducting a survey of over one thousand police chiefs or their delegates across the country. As the police chief of [XXX] police department, your contribution to the research effort will be highly appreciated.

Police agencies will benefit from this research as we will be able to ascertain the efficacy of performance management systems and identify ways to better design and implement performance management systems for police agencies. We are committed to send results of the study to all who participate by early 2014.

In a few days you will receive an e-mail from me with a link to the online survey, which should require no more than 10 minutes to complete online. Since we are particularly interested in the time period from 2009 to 2012, if you have been employed at the police agency for less than a year, please pass this request on to another individual close to you in rank, who was employed with the agency for at least five years. You can also forward this survey to a peer to complete. Please ask them to contact us via email at opasha1@gsu.edu so that we can send the online survey directly to them.

This survey will be used solely for research purposes. I want to assure you that your responses will be strictly confidential, and that only summary information across all respondents will be reported without identifying any responses by individuals or individual police agencies.

I would appreciate your timely response to the survey when you receive the email notification. A high response rate is helpful in assuring the validity of the data. In the meantime, if you have any questions, please contact me at 404-413-0134 or via email at opasha1@gsu.edu.

We will greatly appreciate your cooperation with this effort.


Thank you and best regards,

Obed Q. Pasha
PhD Candidate Public Policy/Administration
Department of Public Management & Policy
Georgia State University

Appendix B: Survey link sent to police chiefs on October 22, 2013.


Dear Chief [LastName],

Recently, you received an e-mail notifying you about our survey of [XXX] police department regarding performance management practices over the past few years. This research is carried out in collaboration with the Department of Criminal Justice & Criminology at Georgia State University and will help us ascertain the efficacy of performance management systems and identify ways to better designing and implementing performance management systems for police agencies.

Please follow the link to access the survey:
https://www.surveymonkey.com/s.aspx

We request that you complete the survey by Wednesday, November 6, 2013.

This survey will be used solely for research purposes. I want to assure you that your responses will be strictly confidential, and that only summary information across all respondents will be reported without identifying any responses by individuals or individual police agencies.

This survey is administered online and hosted by Survey Monkey, which permits you to exit and re-enter the survey at different times until you have completed the survey. Once you have completed the survey and are ready to submit your responses, click "Done." At that point your responses will be logged into the system, and you will not be allowed to re-enter the survey.

If you have any questions please do not hesitate to contact me at: opasha1@gsu.edu.

We greatly appreciate your time and participation in this survey. The results promise to be of real interest to police agencies and we are committed to send results of the surveys to all who participate once compiled and analyzed.

Thank you,

Obed Q. Pasha
PhD Candidate Public Policy/Administration
Andrew Young School of Policy Studies
Georgia State University


 If you do not wish to be a part of this survey, please click on the following link: https://www.surveymonkey.com/optout.aspx

Appendix C: First reminder for the survey sent to police chiefs on October 29, 2013.


Dear Chief [LastName],

Recently, you received an e-mail about our survey of [XXX] police department regarding performance management practices over the past few years.

Please follow the link to access the survey:
https://www.surveymonkey.com/s.aspx

We request that you complete the survey by Wednesday, November 6, 2013.

The results promise to be of real interest to police agencies and we are committed to send results of the surveys to all who participate once compiled and analyzed.

We greatly appreciate your time and participation in this survey.

If you have any questions please do not hesitate to contact me at: opasha1@gsu.edu.

Thank you,

Obed Q. Pasha
PhD Candidate Public Policy/Administration
Andrew Young School of Policy Studies
Georgia State University

If you do not wish to be a part of this survey, please click on the following link: https://www.surveymonkey.com/optout.aspx

## Appendix D: Second reminder for the survey sent to police chiefs on November 3, 2013.

Dear Chief [LastName]

As the Police Chief of [XXX] Police Department we request you to fill the following survey by Wednesday, November 6:

https://www.surveymonkey.com/s.aspx

This online survey should take no more than 10 minutes.

Conducted by the Department of Criminal Justice and Criminology at the Georgia State University, this survey promises to be of real value to police agencies by finding the most effective management practices adopted by the police agencies.

We greatly appreciate your help and support and are committed to share the results of the analysis with you by early next year.

Thank you and best regards

Obed Q. Pasha
PhD Public Policy Candidate
Georgia State University
opasha1@gsu.edu

If you do not wish to be a part of this survey, please click on the following link: https://www.surveymonkey.com/optout.aspx

## Appendix E: Third reminder for the survey sent to police chiefs on November 6, 2013.

Dear Chief [LastName]

Please don't forget to fill out the survey for [XXX] Police Department Today, Wednesday, November 6:

https://www.surveymonkey.com/s.aspx

This online survey should take no more than 10 minutes.

Conducted by the Department of Criminal Justice and Criminology at the Georgia State University, this survey promises to be of real value to police agencies by indicating the most effective management practices to achieve police outcomes such as crime reduction.

We greatly appreciate your help and support and are committed to share the results of the analysis with you by early next year.

Thank you and best regards

Obed Q. Pasha
PhD Public Policy Candidate
Georgia State University
opasha1@gsu.edu

If you do not wish to be a part of this survey, please click on the following link: https://www.surveymonkey.com/optout.aspx

## Appendix F: Last reminder and brief extension sent to police chiefs on November 7, 2013

Dear Chief [LastName]

We have more than 360 completed responses to our police management survey from your region. We are still hoping that the [XXX] Police Department can participate as well. So, we are extending our deadline until tomorrow and encourage you to complete it by 5 PM on Friday, November 8.  You can access this online survey at:

https://www.surveymonkey.com/s.aspx

The survey should take no more than 10 minutes.

Conducted by the Department of Criminal Justice and Criminology at the Georgia State University, this survey promises to be of real value to police agencies by indicating the most effective management practices to achieve police outcomes such as crime reduction.

We greatly appreciate your help and support and are committed to share the results of the analysis with you by early next year.

Thank you and best regards

Obed Q. Pasha
PhD Public Policy Candidate
Georgia State University
opasha1@gsu.edu

If you do not wish to be a part of this survey, please click on the following link: https://www.surveymonkey.com/optout.aspx

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Appendix G: Test for normality for dependent variables.

| | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Murder | .276 | 414 | .000 | .635 | 414 | .000 |
| Forcible Rape | .119 | 414 | .000 | .873 | 414 | .000 |
| Aggravated Assault | .155 | 414 | .000 | .842 | 414 | .000 |
| Robbery | .201 | 414 | .000 | .707 | 414 | .000 |
| Burglary | .115 | 414 | .000 | .862 | 414 | .000 |
| Larceny Theft | .103 | 414 | .000 | .875 | 414 | .000 |
| Motor Vehicle Theft | .204 | 414 | .000 | .711 | 414 | .000 |
| Total Crime | .102 | 414 | .000 | .882 | 414 | .000 |

Appendix H: Test for normality for control variables.

| | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Income per Capita | 0.13 | 414 | 0.00 | 0.81 | 414 | 0.00 |
| Percent Minority | 0.15 | 414 | 0.00 | 0.87 | 414 | 0.00 |
| Population Density | 0.20 | 414 | 0.00 | 0.68 | 414 | 0.00 |
| Employee Ratio | 0.11 | 414 | 0.00 | 0.91 | 414 | 0.00 |
| Population | 0.25 | 414 | 0.00 | 0.63 | 414 | 0.00 |
| Performance Management | 0.11 | 298 | 0.00 | 0.94 | 298 | 0.00 |
| Strategic Planning | 0.16 | 298.00 | 0.00 | 0.94 | 298 | 0.00 |
| Logical Incrementalism | 0.27 | 298.00 | 0.00 | 0.83 | 298 | 0.00 |

## Appendix I: Test for normality of policy variables

|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
|  | Statistic | df | Sig. | Statistic | df | Sig. |
| Target Setting | 0.14 | 365 | 0.00 | 0.95 | 365 | 0.00 |
| Alignment to Strategy | 0.30 | 298 | 0.00 | 0.83 | 298 | 0.00 |
| Diversity of Targets | 0.19 | 349 | 0.00 | 0.89 | 349 | 0.00 |
| Communication of Targets | 0.30 | 298 | 0.00 | 0.83 | 298 | 0.00 |
| Consultation with Officers | 0.21 | 298 | 0.00 | 0.90 | 298 | 0.00 |
| Officer Discretion | 0.40 | 298 | 0.00 | 0.71 | 298 | 0.00 |
| Consultation with Citizens | 0.16 | 298 | 0.00 | 0.92 | 298 | 0.00 |
| Feedback to Public | 0.14 | 298 | 0.00 | 0.95 | 298 | 0.00 |
| Leadership Support | 0.19 | 298 | 0.00 | 0.93 | 298 | 0.00 |
| Quality Control | 0.35 | 298 | 0.00 | 0.79 | 298 | 0.00 |

Appendix J: Box and Whisker plot for Murder Crime Rate for 2012
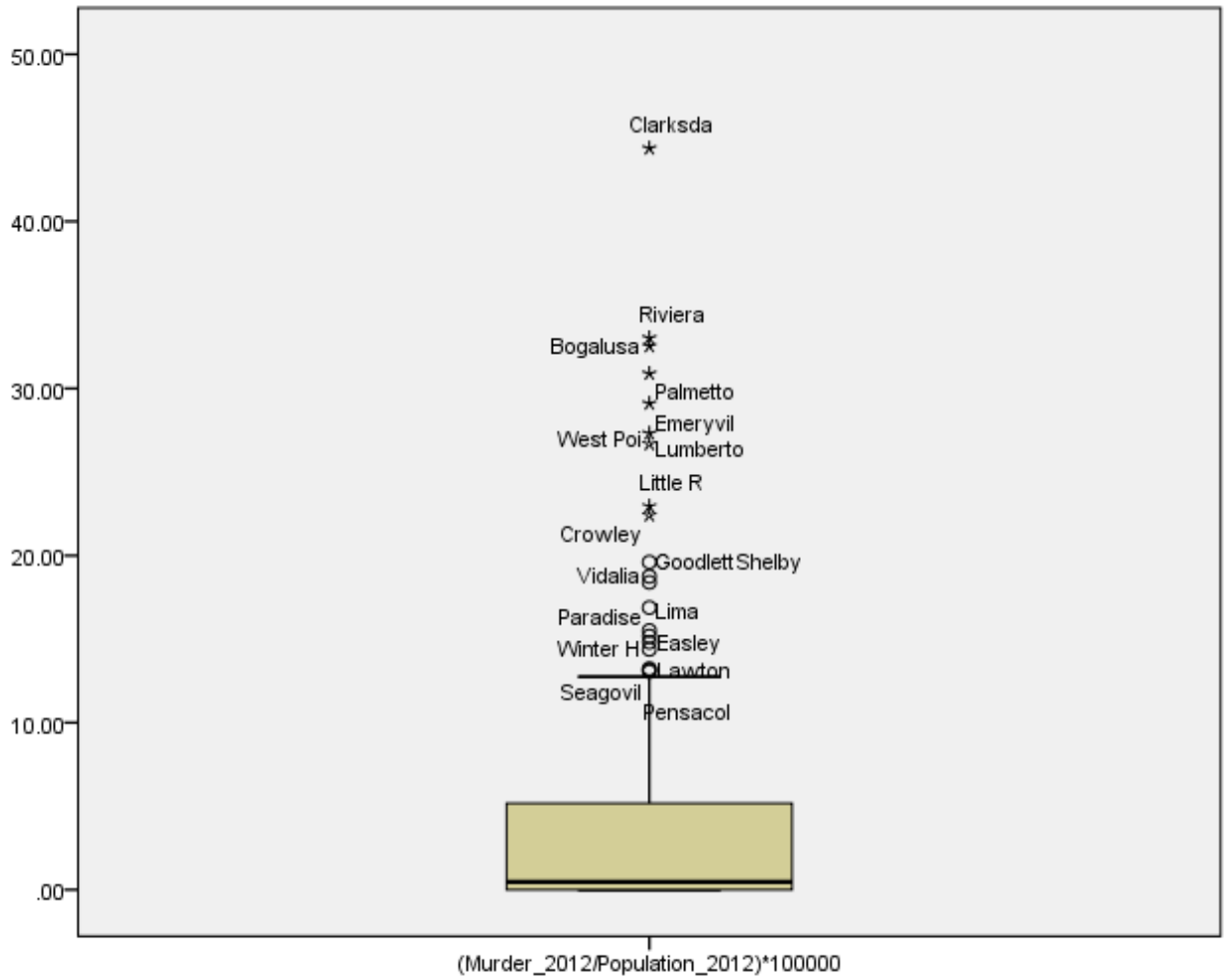
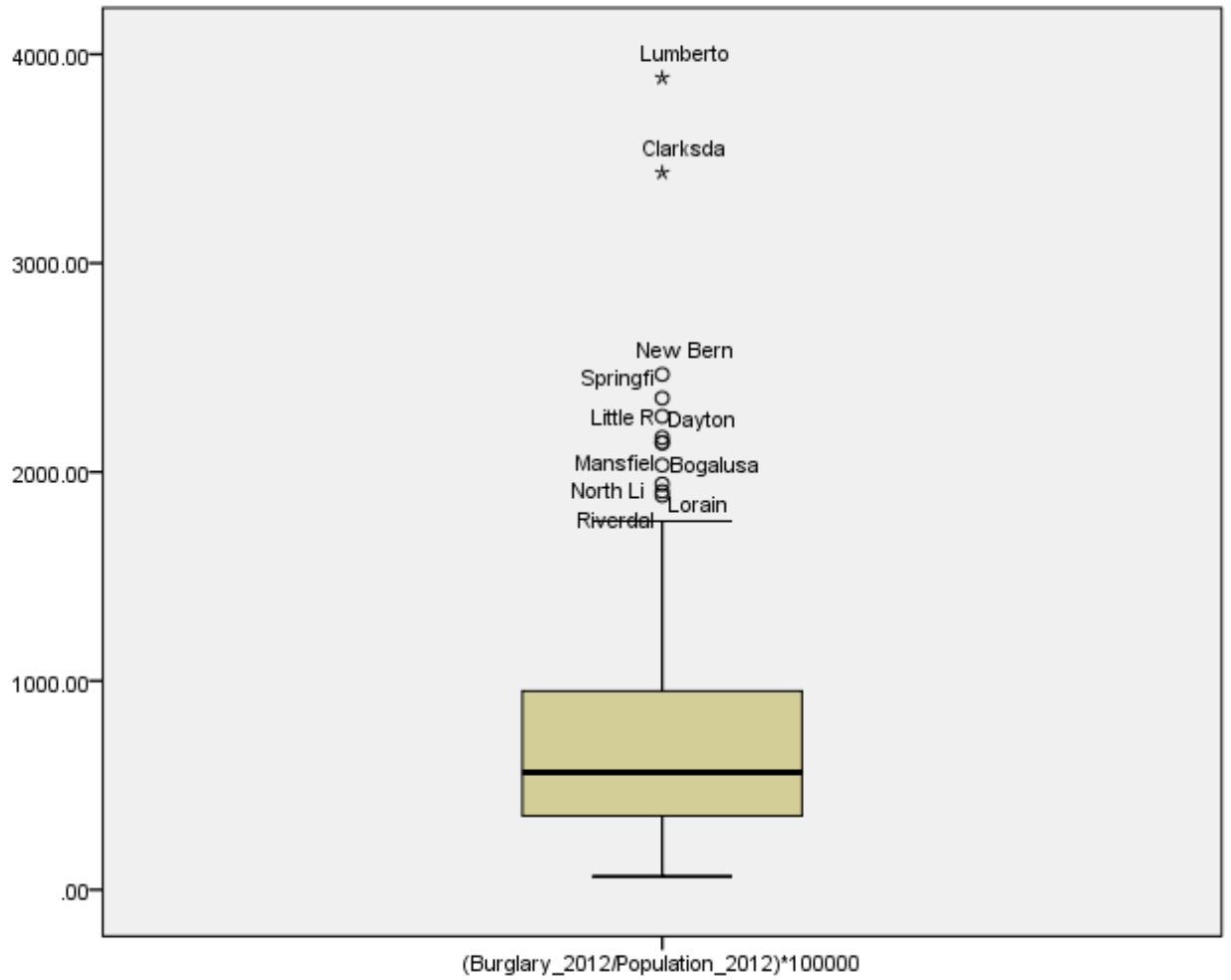Appendix K: Box and Whisker plot for Forcible Rape Crime Rate for 2012
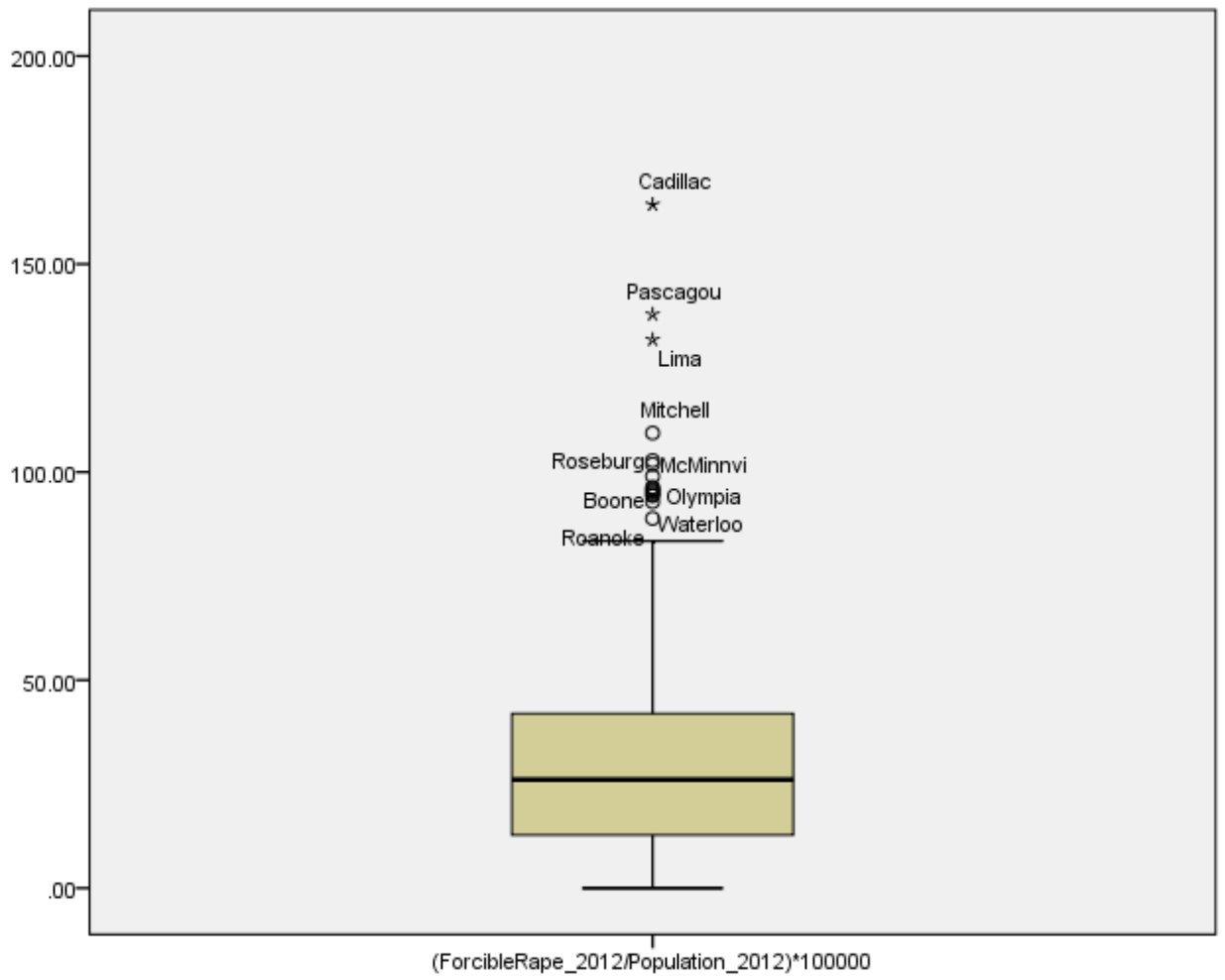
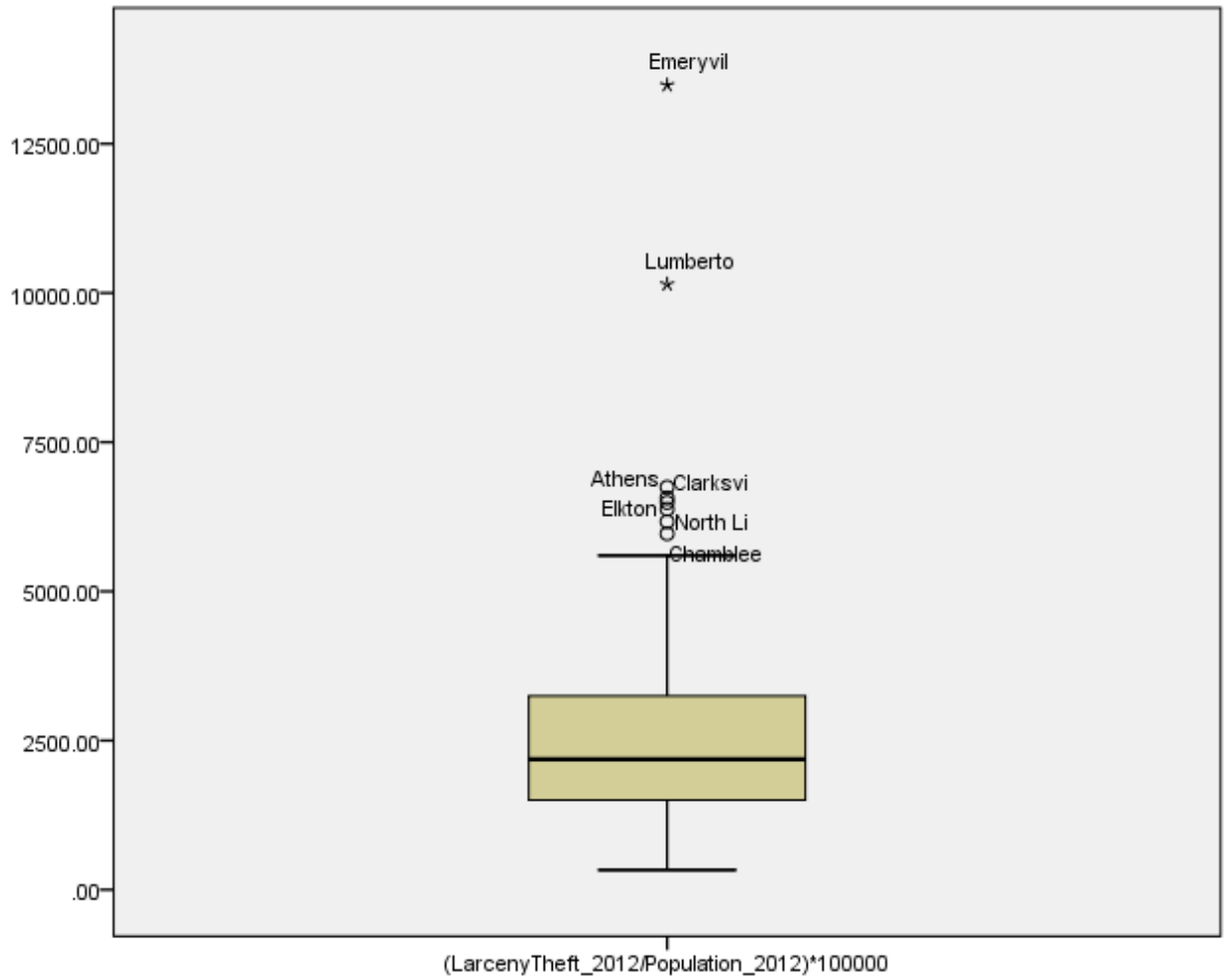Appendix L: Box and Whisker plot for Aggravated Assault Crime Rate for 2012
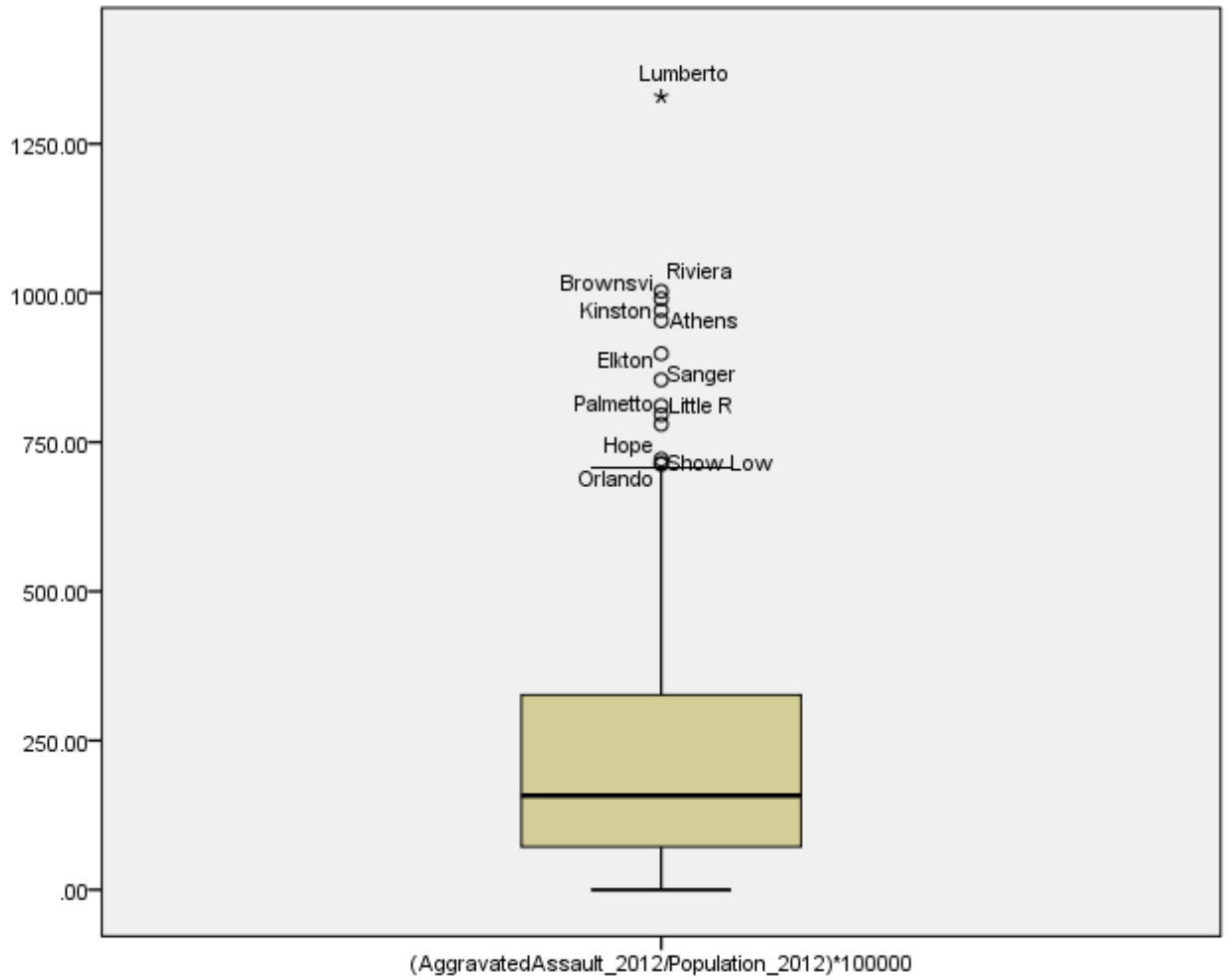
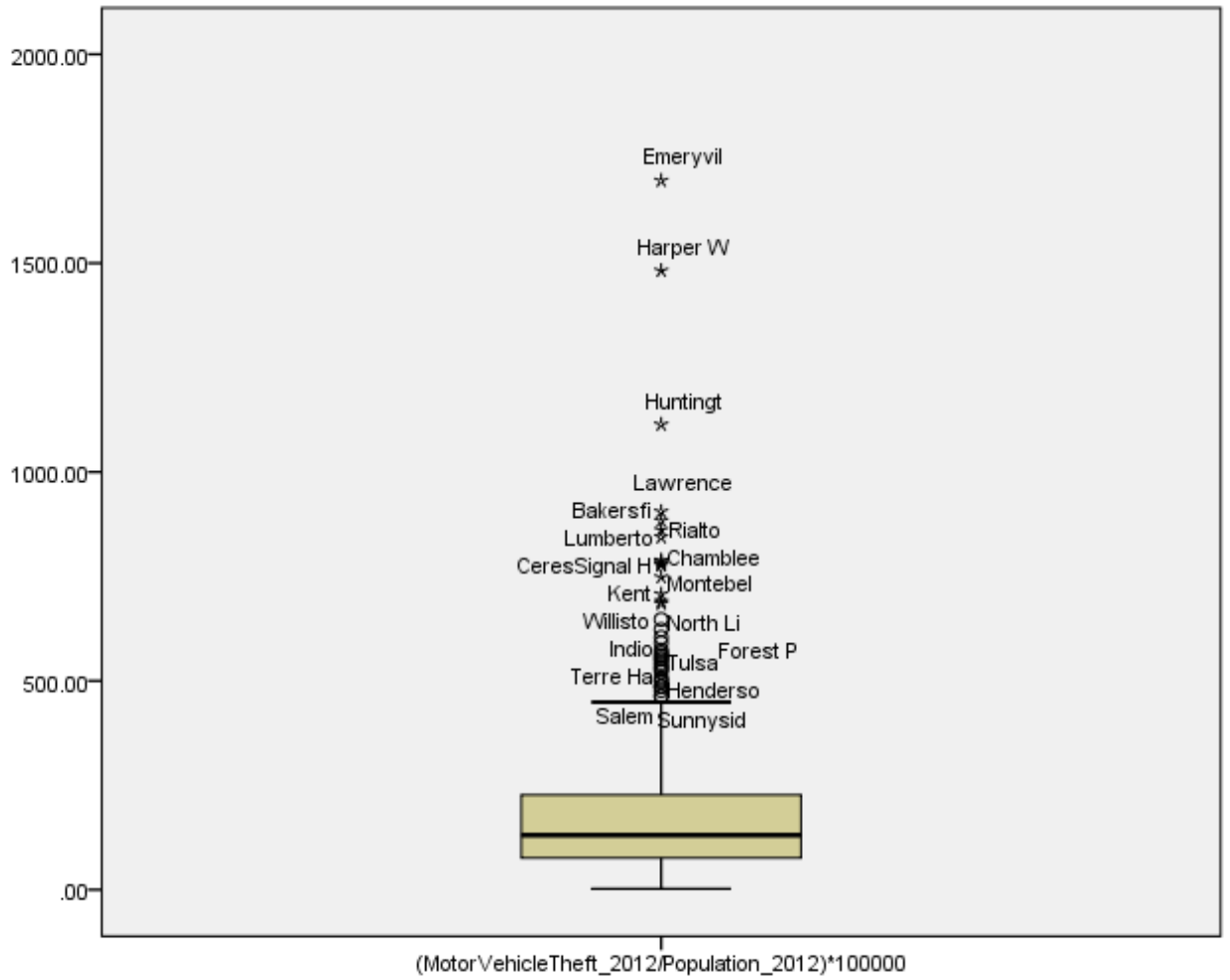Appendix M: Box and Whisker plot for Robbery Crime Rate for 2012
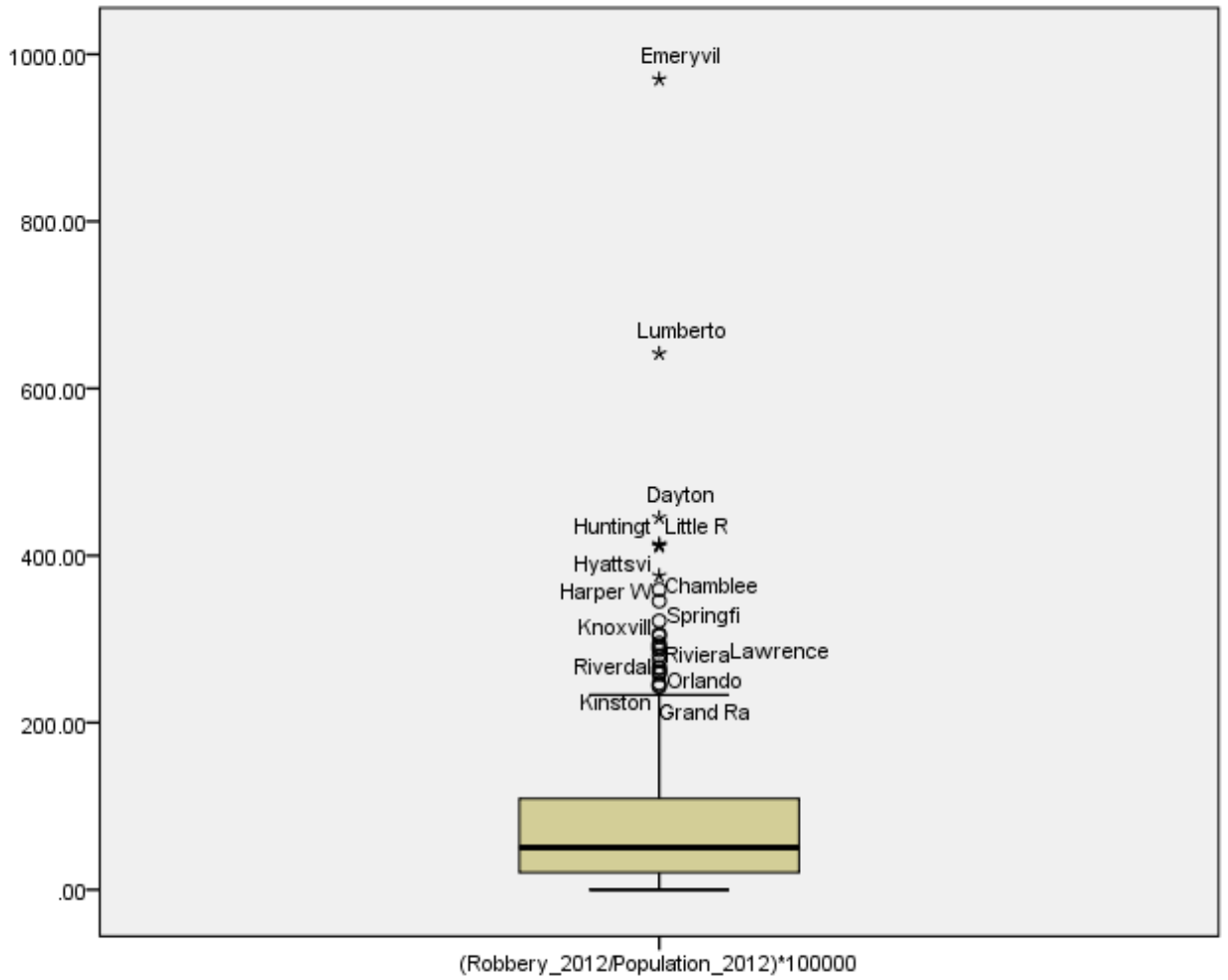
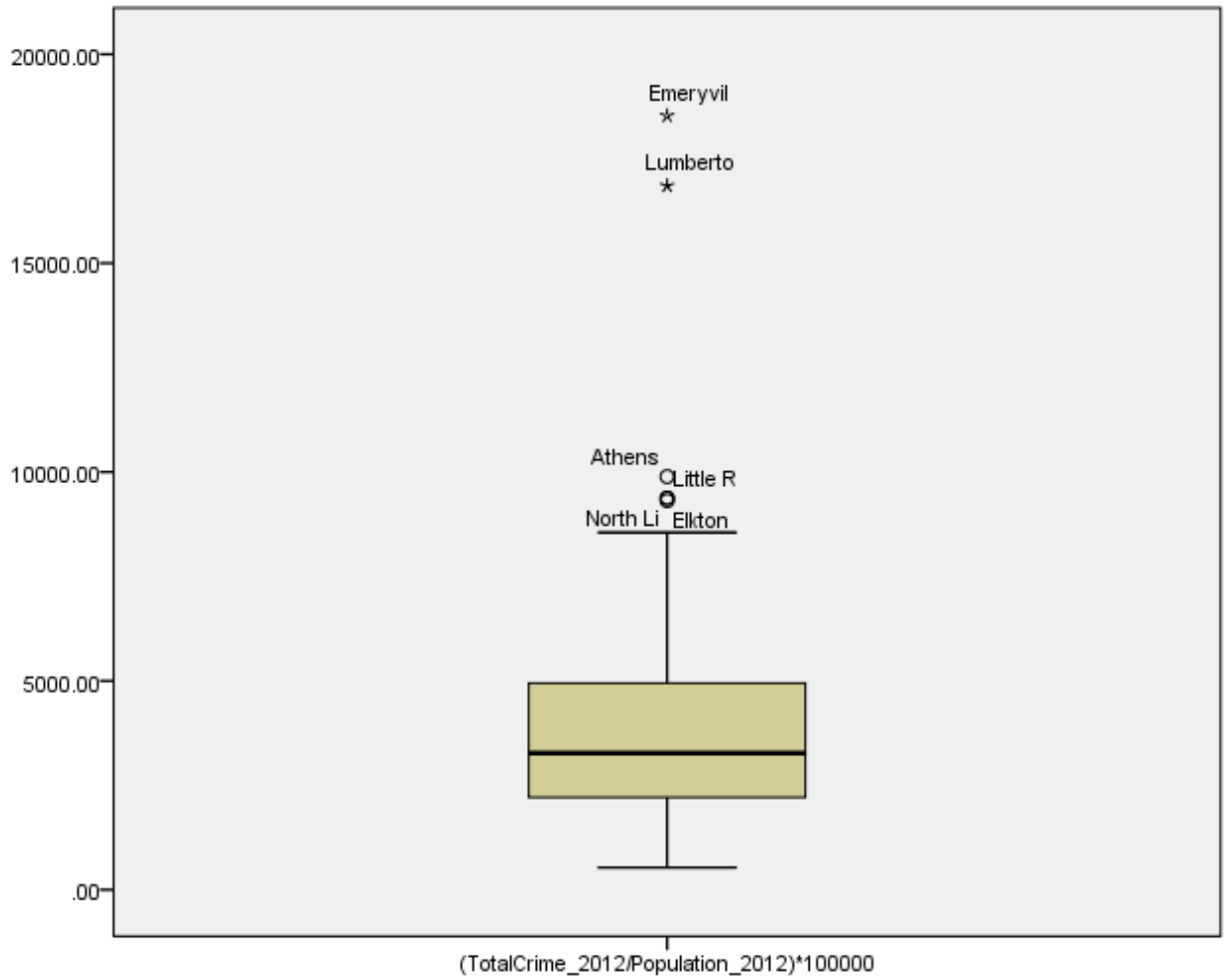Appendix N: Box and Whisker plot for Burglary Crime Rate for 2012

Appendix O: Box and Whisker plot for Larceny/Theft Crime Rate for 2012

Appendix P: Box and Whisker plot for Motor Vehicle Crimes Rate for 2012

Appendix Q: Box and Whisker plot for Total Crime Rate for 2012

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