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LOCAL GOVERNMENT LAW ENFORCEMENT SERVICES: RELATIONSHIPS BETWEEN PERFORMANCE AND COST IN COLLECTIVE AND NON-COLLECTIVE BARGAINING WORKFORCES

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LOCAL GOVERNMENT LAW ENFORCEMENT SERVICES: RELATIONSHIPS BETWEEN PERFORMANCE AND COST IN COLLECTIVE AND NON-COLLECTIVE BARGAINING WORKFORCES

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at the Wilder School, Virginia Commonwealth University

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Abstract

LOCAL GOVERNMENT LAW ENFORCEMENT SERVICES: RELATIONSHIPS BETWEEN PERFORMANCE AND COST IN COLLECTIVE AND NON-COLLECTIVE BARGAINING WORKFORCES

By Joseph P. Casey

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at the Wilder School, Virginia Commonwealth University

Virginia Commonwealth University, November 2013

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High performance organizations desire to provide services in an effective and efficient manner with positive outcomes; therefore measures of performance and cost can be utilized to gauge such success. Through comparative research and analysis of local governments that have and do not have collective bargaining for law enforcement, findings and results can determine if there is any correlation between employee workforce classification (in collective or non-collective bargaining workplaces), high performance traits, costs and high performance return on costs (HPRC) for law enforcement. A HPRC composite measure was developed and utilized to compare and
contrast all of the local governments to determine relationships between performance and costs. Based upon the research, the following findings were discovered for the null hypothesis which compared two forms of collective bargaining - arbitration and mediation - separately to non-collective bargaining localities: 1) Correlation between workforce classification and high performance attributes – mediation (negative – perform at a lower performance level); 2) Correlation between workforce classification and law enforcement costs - arbitration (negative – costs are at a lower level); and 3) No correlation between workforce classification and HPRC. In the preceding three areas, only the model on high performance attributes had a high r square and low variance with adjusted r square; both indicators of a parsimonious model. While correlations arose, further research in this area is warranted in developing a more enhanced and publicly accepted comparable metric of performance, costs and HPRC for law enforcement. In addition, certain control variables illustrated a correlation with the dependent variables as follows: 1) Performance - High median household incomes, density, age, survey quality of life, and city; 2) Law Enforcement Costs per Capita - Non-right-to-work state and county; and 3) HPRC - Median household income and county. A rational choice theory was utilized as the lens of framework in assessing an employee’s motivational behavior in a collective and non-collective bargaining work environment that could contribute to differentials in performance.

Keywords: collective bargaining, high performance organization, law enforcement, police, union, rational choice theory, local government, return on investment, city, county, town, crime rate, survey, accreditation, mediation, arbitration, expenditures, budget
CHAPTER 1
INTRODUCTION

Problem Statement

As local governments continue to seek pathways towards high performance, variances amongst them can be analyzed to determine which traits may yield a more favorable and higher performing organization. The inherent pursuit of any business or public sector organization towards a high performance organization (HPO) should be a fundamental and common goal shared by all; employer, employee and customer. Therefore, the understanding of the key variables and the degree of differentiation that exists between HPOs and those with lower performance outputs and outcomes can enable focused strategies on how to maximize the more results-based variables for HPO success.

There are many services provided by local government; each of which may be governed by national, state and local regulations and standards. Law enforcement services are one of the more common services provided amongst local governments. Because of its broad scope and the vested interest of citizens, businesses and politicians in ensuring that such service is performed well in providing for a safe and secure community, this service has been researched in many facets. The scope of law enforcement is the individuals and organizations responsible for enforcing laws and
maintaining public order and public safety through the prevention, detection, and investigation of crime and the apprehension and detention of individuals suspected of law violation (Bureau of Justice, 2012).

One variance between organizations is the ability of employees to access and use collective bargaining in negotiated contracts for salaries, benefits and workplace conditions. These employees are generally represented by an empowered union to act on behalf of the employees. The International Labour Organization defines collective bargaining as a process whereby trade unions, representing workers, and employers, through their representatives, reach a collective agreement with provisions reflecting terms and conditions of employment of the workers, and conferring to them their rights, privileges and responsibilities (International Labour Organization, 2012). Because of the inherent emotion of assigning or not assigning rights to workers in defining their relationship with management, advocacies for and against collective bargaining may arise. These similar advocacies may also be segmented into whether or not such rights should be assigned to just private sector workers in their competition with one another of private goods and services or also to include public sector workers with their more natural monopolistic public services. An example of these emotional debates was noted in 2011 newspaper story about Nevada public sector unions that summarized the debates conclusion with “in the end, only acrimony prevailed” (Doughman, 2011, p. 1).

Local governments are governed through their respective state laws to either avail or not avail collective bargaining rights to certain classes of workers amongst its local government workforce; including law enforcement employees (Salerno, 1981). For
those local government law enforcement workers with collective bargaining rights, there may be variation in the scope and leverage through which the employees or their union representatives can negotiate favorable outcomes from the employee’s perspective. Nevertheless the rights afforded to these workers, regardless of their ability to maximize such rights, are still greater rights and influences than those employees without such rights.

As there are many variables that can exist between local governments, the focus herein is on the correlation, if any, between collective bargaining and the HPO for a specific local government service – law enforcement. In formulating the problem statement, there appears to be prior, but separate, research on HPOs, law enforcement organizations, cost of services and collective bargaining. There appears to be little research conducted on linking these four variables together. In focusing on the independent variable of collective bargaining amongst law enforcement operations across the United States, dependent variable correlations can possibly be derived in HPO relationships.

Because of dependent variable variances that may exist in a local government’s investment in law enforcement or the control variable of demographic (including socio-economic) factors of the locality, the ability to equalize for service costs and demographics can possibly better focus the results on more comparative collective bargaining and HPO traits. This would better attempt to remove non-comparable HPO result outcomes that may be influenced by higher (or lower) investment in a service or favorable (or unfavorable) demographic traits rather than on determining the ability of
the employee’s performance or aggregate law enforcement organization workforce’s performance.

As the problem statement is the first step in the research process, it is also critical that the problem to be investigated is defined appropriately and accurately. In attempting to formulate a problem statement for this research, efforts were made to initially review and assess the environment for a topic that is suitable, yet unique, for research. In addition, the ability to derive a hypothesis from the problem statement, utilize a theoretical framework to help give perspective and basis for analysis, and develop analytical methods were also considered. Based upon these factors, the following problem statement has been formulated:

- Local government law enforcement collective bargaining practices appear to create advocacy groups in support and against such practices; however, these emotional debates seem to focus on just salary and benefit costs and not on any high performance law enforcement organization factors; especially when total law enforcement costs and demographic factors are considered in determining high performance return on costs.

Importance of this Issue and Purpose of this Study

The importance of this issue and purpose of this study will be addressed through: research question; general problem to be addressed; major dimensions or variables of the problem; specific aspect of the problem being addressed; and answering the question “why is this a problem in public policy and administration?.”
Research Question

As the problem statement illustrates the basis for which further research should be conducted on this topic, the next step to help best frame the research to be conducted is formulating a research question. Understanding what, if any, relationship exists between collective bargaining and HPO can help address the problem. The research can be designed to remove the emotional and advocacy-related elements that are often associated with collective bargaining with emphasis on theoretical inspired data analysis. In order to not be too broad, the focused local government service subject to this question is law enforcement. Accounting for the costs amongst the various local government law enforcement organizations is important to the research question’s focus on the relationship between collective bargaining and HPO. Based upon these research goals, the following research question is formulated:

- Is there a relationship between a local government law enforcement collective bargaining or non-collective bargaining workforce and a high performance law enforcement organization when cost and demographic factors are considered in determining high performance return on costs?

General Problem Being Addressed

There is a long history of employee versus employer in the working environment (Salerno, 1981). This history has segments of certain industries focused upon more and advocated on behalf of or against more than others. This history is also highlighted by advocacy groups with scenes of oppressed workers in unsafe working environments
making little wages being reduced to indentured servants with little ability for the worker or their succeeding generations from ever emerging to higher prosperity. Opposing advocacy groups have shown the ramifications of union strikes that hinder goods and services to be provided to customers and workers who leverage employers with threat of strikes in return for guarantees of above market compensated and benefited jobs; regardless of whether the employer is making a profit or loss. In addition, this history and related advocacies can also be segmented between public and private sector workers. To further illustrate variances between initially like-minded advocacy groups, some of these advocacies groups are in favor of private collective bargaining subject to market competitiveness for eventual success, but do not advocate on behalf of public sector collective bargaining with far less market driven factors. As an example and discussed further in Chapter 2 – Review of the Literature is the private sector union of American Federation of Labor’s (AFL) reaction to the 1919 Boston Police social club strikes which were not supported by the AFL in the chaos that ensued after the strikes.

The right of employees for collective bargaining (and through empowered unions) is one variance that exists amongst local governments. Collective bargaining’s history is rooted in enabling defined and protected rights of salaries and benefits to certain workers. In addition, it is through collective bargaining that workplace environment conditions can be defined and provide pathways for any employee grievances to be resolved. Workforce and workplace advocacy organizations often lobby on behalf of collective bargaining whereas opposing viewpoints often arise from employer perspectives.
The importance of this issue is justified from the perspective that public sector collective bargaining is a topic that continues to be raised as to what the return on taxpayer investment (performance) accrues for the benefits bestowed on protected employees. As local governments are becoming further scrutinized by taxpayers to have an appropriate array of high performing services in both effective and efficient manners, collective bargaining can be isolated as an independent variable to determine if it has any impacts or effect upon high performing results. In addition, while effectiveness measures (output, outcome) of performance are one attribute of correlation to performance, the comparison and contrast to the relative cost (efficiency measures) is another key attribute of performance. Together these effectiveness and efficiency measures need to both excel for a HPO.

If there is a way in which law enforcement employees are best motivated to perform quality services at the lowest cost needed to meet quality objectives, then continued efforts would need to focus on whether collective bargaining is a trait that helps local governments attain and then maintain HPO status. Conversely, if it appears that collective bargaining constrains a local government's ability in becoming a HPO or challenges its sustainability as a HPO, then further analysis may warrant actions to reduce collective bargaining opportunities. It is this proper manner of organizational design which contributes to HPO as this design is a "series of activities aimed at aligning all the elements" which can result in a HPO (Stanford, 2007, p. 19).

However, it is prudent that the scope of this research be further qualified from the employer and customer's perspective as employee perspectives are not fully
represented. The research question scope does not address what merits exist or don’t exist from an employee’s perspective (e.g., salary, benefits, qualitative factors) via employee survey in assessing whether the law enforcement employee is getting their rightful or fair wage, benefit and recognition. This also does not address how the employee feels about their job or co-workers in what may contribute to them in performing at a higher (or lower) level. Nor are the employer’s or customer’s viewpoints gauged via survey on their beliefs and perceptions of the merits of collective bargaining beyond the statistical data subjected to the analysis. If there exists employee and customer consensus for wages and benefits via collective bargaining, then collective bargaining may be a higher priority goal; regardless of its impacts on HPO goals.

**Major Dimensions or Variables of the Problem**

The dimensions and variables of this problem have been narrowed with the focus limited to local government law enforcement services. If this research was on all of local government services, then the variables between the arrays of local government services would have made this research topic too broad. The initial independent variable of whether a local government law enforcement organization has collective bargaining abilities is relatively easily determined. However, there are two primary manners in which collective bargaining practices are leveraged within certain states for resolution when impasse in negotiations exists: 1) Mediation; or 2) Mandatory arbitration. These traits are further detailed in Chapter 2 – Review of the Literature.

The determination of HPO traits of a local government law enforcement
organization is a major dimension that was further refined to determine the best representative traits that are most aligned with the ability of the law enforcement employee’s performance and related outcome of such performance. Factors that influence outcomes of law enforcement services that are not as highly correlated to an employee’s performance need to be carefully reviewed and identified via control variables, if possible, as part of any data analysis. However, non-employee control variables (e.g., locality’s demographic and socio-economic factors) can be helpful in capturing similarly positioned law enforcement organizations for comparative purposes.

This research is just limited to analysis of data as it pertains to demographics, performance and cost. Other factors, some of them grounded with the impetus that created collective bargaining, were not subject to this analysis. This included workplace environment (workplace safety) and determination of a fair compensation and benefits package to better ensure that the employee is not oppressed or otherwise treated unfairly. However, further research would need to also measure, most likely through employee surveys, the employee satisfaction with employer and related employee’s quality of life and workplace attributes. If such surveys resulted in no discernible difference between collective bargaining employees and non-collective bargaining employees, then the analytical results of this research of performance and costs would be further validated.
Specific Aspect of the Problem Being Addressed

The specific aspect of the problem being addressed is the influence of collective bargaining on performance. For most organizations, including local government law enforcement, the highest cost is labor (Putchinisky, 2007). Therefore, the performance attributes of the labor force translate into the foundation from which HPOs can best succeed. The present study is not focused upon unions as a whole and their relevance or merit in the 21st century, but rather specifically focusing on local government law enforcement services. It is through this focus that comparable and contrasting information will be accumulated. Upon completion of data analysis, the research attempts to determine what differentiations foster a HPO workplace that is better positioned to achieve their outcomes – with or without collective bargaining; or no absolute differentiation based upon the collective bargaining independent variable.

Why is this a Problem in Public Policy and Administration?

The public policy and administration field and research attempt to understand the manner in which the public sector can best perform in meeting citizen needs and issues, while being a proper steward of leveraging finite resources for the greatest outcome and HPO goals. Large components of such resources are workforce costs. Therefore, it is through further discussion, research and knowledge that policies and strategies can be developed about how the workforce can best be recruited, retained and rewarded with such workforce costs leveraged best to perform in a manner that enables the public
sector unit to achieve its goals towards HPO.

The importance of this issue from a citizen’s perspective is that the more safe and secure their community is, the higher their quality of life in relation to a variety of factors (CNBC, 2012). For example, higher crime areas may adversely affect property values as evidenced by a decrease in home property values of 10% for areas with a higher crime rate of one standard deviation (Gibbons, 2004). This is where HPOs in the public sector distinguish themselves from the private sector. For the private sector, the HPO may garner a more secure customer base and yield greater profits; however, for the public sector entity, the HPO factors translate into positive quality of life attributes for citizens and productive environment for businesses; all with a reasonable tax burden that maximizes the potential of return on investment of such tax burden.

Justification of the Importance of the Issue

Generally-Accepted Knowledge about the Problem

As with much research, there are some things known about this problem and other things that are not known. It would be suffice to say that if everything were known about this problem and what is the definitive best HPO manner to provide for a safe and secure community, and if collective bargaining was a determining factor in achieving this or not achieving this goal, then there would be a definitive migration towards a collective bargaining or non-collective bargaining type of organizational environmental structure with HPO results evident.
This research will attempt to address the bigger issue that has been arising in many parts of the country over recent years – determining if there is a benefit to the public sector workplace with unionized workers compared to non-unionized workers. It has inherently become part of the American culture to form strong opinions on what the costs and benefits are in relation to unionized and non-unionized workplaces. There can even be escalated opinions on this topic for certain public sector workers as evidenced in a recent Nevada meeting where proposed state bills were labeled as “insulting” and state representatives wanted apologies for “derogatory comments” (Doughman, 2011, p. 1). Everyone can generally agree that the necessity for unions arose from substandard work environments (e.g., poor safety practices), suppressed market wages and little or no benefits (e.g., retirement, health insurance, grievance process). The formation of unions enabled workers’ rights to be negotiated through collective bargaining and empowered unions to further protect workers via legislative changes at federal, state and local levels for initially private sector workers, then public sector workers. Eventually many federal and state laws were passed to protect all workers (e.g., workplace safety).

Private sector employees and their unions in the United States were formally recognized and empowered with the passage of the 1935 National Labor Relations Act (also known as the Wagner Act; after New York Senator Robert Wagner) and the implementation and oversight provided by the National Labor Relations Board (NLRB); an independent federal agency (LaborUnionReport.com, 2012). The following NLRB
policy excerpt from the Code of Federal Regulations (1935) is an example of the pro-employee position of the NLRB in 1935:

“It is declared to be the policy of the United States to eliminate the causes of certain substantial obstructions to the free flow of commerce and to mitigate and eliminate these obstructions when they have occurred by encouraging the practice and procedure of collective bargaining and by protecting the exercise by workers of full freedom of association, self-organization and designation of representatives of their own choosing, for the purpose of negotiating the terms and conditions of their employment or other mutual aid or protection”

The impetus for the 1935 Wagner Act was focused on the private sector as public sector applicability was not envisioned (Code of Federal Regulations, 1935). President Franklin Roosevelt, a private-sector union advocate, cautioned that collective bargaining was not meant to be transplanted to the public sector (DiSalvo, 2010). As the unions became more empowered and utilized strikes in many facets to shut down production, the Congress of Industrial Organization (CIO) union’s sit-down strike of General Motors and Republican Steel in 1937 motivated Congress in 1938 to pass the Fair Labor Standards Act (FLSA). A key provision related to workers was the “elimination of labor conditions detrimental to the maintenance of the minimum standards of living necessary for health, efficiency and well-being of workers” (US History, 2012, p. 1).

As the Wagner Act and FLSA provided empowerment to the unions and many protections to the employees (including general protections for all workers), employers successfully lobbied Congress to enhance employer empowerment for a better balance between employee and employer. In 1947, the Taft-Hartley Act’s employer protections
included employees needing to vote on establishing a union which replaced prior practices of a “closed shop” – unions established without employee votes, unions making political contributions and little employer protections and due process prior to the initiation of a union strike (Taft-Hartley Act, 1947). In addition, the Taft-Hartley Act enabled states to enact “right-to-work” laws that protected employees who did not join a union from being terminated. The Taft-Hartley Act was silent as to the rights of public sector workers.

It was not until 1958, when New York City Mayor Robert Wagner, son of the United States Senator Robert Wagner who sponsored the 1935 National Labor Relations Act, issued an executive order enabling certain local public workers the ability to unionize. Soon thereafter, many other states, starting with Wisconsin in 1959 (LaborUnionReport.com, 2012), and local governments provided such access for defined segments of their workforce. In 1962, President John Kennedy enabled certain federal workers the right to unionize for the first time through Executive Order 10988 (American Presidency Project, 2012). This executive order was reinforced by Title VII of the Civil Service Reform Act of 1978 (Dilts and Walsh, 1988).

The correlation of public sector unions and performance were initially referenced in President Kennedy’s Executive Order 10988 resolution. HPO attribute references included: 1) “Participation of employees in the formulation and implementation of personnel policies affecting them contributes to effective conduct of public business”; and 2) “Efficient administration of the government and the well-being of employees
require that orderly and constructive relationships be maintained between employee organizations and management officials” (American Presidency Project, 2012, p.1).

Although some states preceded the federal government in enabling collective bargaining for local government employees, the federal government’s action in 1962 was an impetus for many states to further enable and define state and local government collective bargaining. However, variances exist amongst the states as each state has developed its own laws at different times and under different political circumstances which results in a variety of “scope, coverage and impasse procedures” (Dilts and Walsh, 1988, p. 176).

In more recent times, local government public sector unions have received much attention as certain states debate changes to their collective bargaining laws. This attention is fueled by recessionary conditions; declining investment return rate impacts upon public sector defined benefit pension plans that create material unfunded pension liabilities; and collective bargaining agreements that stipulate defined salary increases and employer payments towards health insurance during employees’ tenure and retirement. All of these factors constrained local government budgets and resulted in some combination of tax rate increases or service reductions; both of which are generally opposed by the citizens.

In 2011, Wisconsin received much attention as Governor Scott Walker proposed major revisions to Wisconsin state law in restricting collective bargaining rights of public
sector workers located in Wisconsin. As an example of the ensuing rhetoric that followed, the following quote is from a local Pittsburgh, Pennsylvania newspaper's perspective: “The fight in Wisconsin has focused the nation's attention on collective bargaining and its role in a democratic society. Other states facing fiscal crises are watching the battle there. Unfortunately, because of the highly partisan nature of the fight in Wisconsin, the debate has shed more heat than light” (Clark, 2011, p. 1).

Because of similar political structures in Indiana's General Assembly and governor’s office, Indiana is also actively debating this issue. Ironically, Indiana enacted a right-to-work law in 1957, but repealed it in 1965. Other states with similar political potential to debate this issue further include Michigan, Pennsylvania, Maine, Florida, Tennessee, Nebraska, Kansas, Idaho, North Dakota and South Dakota (Barro, 2011).

Problem’s Treatment in Professional Reports and Writings

The issue of collective bargaining has been researched often amongst many employee classes in both public and private sector. As advocacies on either side of this issue are passionate, it is important to ensure that professional research is not influenced by these advocacies. Any references from advocacy-based groups should be prefaced accordingly, with information used in illustrating a point or providing further enlightenment on a topic further vetted for accuracy. The following studies highlighted in the remainder of this section reflect samples of the professional research conducted in
this area. A more representative and complete research compilation is included in Chapter 2 – Review of the Literature.

It appears that the most researched public sector profession with collective bargaining inferences is school teachers. From research of Richard Freeman and Casey Ichinowski (1988, p. 305), state comparisons with greater and lesser unionization were performed with the result that “collective bargaining coverage is associated with higher salaries for public school teachers and generally, though not uniformly, higher educational performance as measured by student test scores and high graduation rates.” In addition, “fixed-effects analysis of the effects of unionism on teacher wages and student performance yield greatly reduced estimated effects of unionism on wages, but continue to show substantial teacher union impacts on student performance” (Freeman and Ichinowski, 1988, p. 306). Eberts and Stone (1986) used test scores on 14,000 fourth graders in selected school districts to evaluate the impact of unionization on performance and find that when other socio-economic factors are controlled for, scores are 7% higher in union districts.

There is also a great deal of professional reports on collective bargaining and the private sector. As an example, in a study that reviewed collective bargaining of private sector call centers, workplace-level collective bargaining arrangements were associated with significantly higher measures of job quality (Doellgast, Holtgewe and Deery, 2009). There also is research that compares the influence of collective bargaining between adjoining geographic areas. As an example, Thomas Holmes (1998) compared counties
close to the border between states with and without right-to-work laws (thereby holding constant an array of factors related to geography and climate). Results indicated that the cumulative growth of employment in manufacturing in the right-to-work states was 26% greater than that in the non-right-to-work states (Holmes, 1998).

There have also been many HPO-related research studies in this field. As an example of law enforcement research, Hua Xu’s (2008) study of organizational performance (as measured through crime clearance rates) and variables (e.g., spending), the outcomes of human resource strategy and application of technology did not have a strong correlation (Xu, 2008). However, this study also recognized challenges in the variability in how information was compiled between comparative localities. From Laurence Putchinisky’s (2007) research, “very few studies have researched the actual extent of union influence on the budget decision process and none of these studies examined to what extent that influence affects local government decisions regarding operating expenses” (Putchinisky, 2007, p. 2).

As these preceding examples and further research studies cited in Chapter 2 – Review of the Literature illustrate, there are many different manners in which the variables can be defined and target workforces further examined. These collective research results will help frame the variables to be subject to the data analysis in Chapter 3 – Research Design and Methodology.
Importance of this Research in Relationship to the Problem

Through this research, a correlation between collective bargaining and local government law enforcement’s HPO traits can be determined to exist or not exist. The importance in knowing if such a relationship exists can help better address the problem statement and reduce the emotional rhetoric that is often associated with this issue. Because this problem is focused solely on law enforcement, findings are also focused on law enforcement. This focus should contribute to a more accurate portrayal of law enforcement, HPO and collective bargaining without being influenced by other facets of collective bargaining, other public sector professions, public sector budgets and HPO correlations.

If additional costs can yield higher performance, then it would be appropriate to best gauge the high performance return on costs of such additional cost and the incremental marginal utility rewards. From an economic perspective, there will be a point at which such marginal utility is diminished to the point that such additional cost investment does not provide a return on such investment (Hicks, 1935); or in this case a higher performance return on costs. From a public sector perspective, this point may be debated as there can be subjective determinants as to what is defined as “return” as there may exist more qualitative factors in the public sector than private sector. However, if agreed-upon objective measures of performance can be assembled together with a consistent cost basis by which such services are performed, then
correlations of costs to higher performance can possibly be calculated, analyzed and further discussed.

Making the Problem More Understandable

The correlations of cost, performance and collective bargaining can regress into hard to understand relations of these variables. As an example, knowing the marginal utility point of diminishing returns is complex. An illustrative, yet simplistic example is public school education. As further investment in the classroom may result in lower student-teacher ratios, there may be improved performance on the part of the student, but this improvement, while still an improvement, may diminish in its relevance at some point. At its most extreme, a ratio of 1:1 may yield the best performance of the student, but is cost prohibitive. Therefore, finding that appropriate threshold is a constant challenge as advocacies will always exist in helping a child achieve their full potential via low teacher ratios while other advocacies will note that performance can still be achieved, at a much lower cost, with higher teacher ratios if high performing teachers and school districts existed. A local government can invest in resources to lower the student-teacher ratio regardless if it’s a collective bargaining entity or not. However, the variable of unions on performance related to schools was studied and the variables underlying why there was improved school performance in an union environment (Freeman and Ichinowski, 1988).
Identification of Theoretical Basis

Theoretical Framework – Rational Choice Theory (RCT)

Applying an appropriate theory enables position the research question to better be answered. The theoretical basis utilized to best help answer the research question for this dissertation was Rational Choice Theory (RCT). Rational Choice Theory is a subset of the neo-classical theories (employee marginal utility and employer profit maximization) whereby individuals through “explanation and prediction” enable a rational choice process to ensue even with the likelihood of “high uncertainty and imperfect information” (Harmon and Mayer, 1986, p. 404). The underlying primary value of Rational Choice Theory is its efficiency in rational goal attainment (Harmon and Mayer, 1986). As the research question is based upon HPO attributes which are dependent upon employee performance, Rational Choice Theory’s approach to employee motivation is a critical factor to high performance.

The degree of organizational reality attempts to gauge the ability of the manager to “optimize instead of maximize on the quality of their decision” based upon the changing environment around them (Steers, 1984, p71). It is through rational choice process of optimization that viable alternatives emerge and that the selected alternative is appropriate to meet environmental demands (Steers, 1984). In addition, this theory provides a framework to better understand and analyze social and economic behavior (Blume and Easley, 2008); which are key attributes in individual and aggregate employee performance. Rational Choice Theory uses a specific and narrower definition of rationality simply to mean that an individual acts as if balancing costs against benefits
to arrive at an action that maximizes personal advantage (Friedman, 1953). Because of the relative success of economics at understanding markets, Rational Choice Theory has also become increasingly employed in social sciences other than economics (e.g., sociology and political science) (Scott, 2011).

Elements of four other theories helped support the research and the operationalization of Rational Choice Theory. It is through the compilation of these other theories that better efforts were made in considering the variables subject to the data analysis. Chapter 2 - Review of the Literature contains brief summaries of the following four theories: 1) Conflict Theory; 2) Self-Determinant Theory; 3) Self-Regulation Theory; and 4) Expectancy Theory.

How Theoretical Framework will be Operationalized for Research

Rational Choice Theory is the primary background context from which variables will be selected, compiled and utilized in data analysis. This theoretical framework will also be operationalized in this research via descriptions of independent and dependent variables; important definitions and assumptions; the type of logic employed; and other standards of proof that may be required. The independent variable will be whether or not there is collective bargaining for local government law enforcement services further segmented into two tiers of collective bargaining.
**Proposed Methodology**

The proposed methodology, further specified in Chapter 3 - Research Design and Methodology, will seek to gather a representative and comparative sample group of local governments across the United States. As noted previously, the independent variable of collective bargaining will try to segment the sample population into two strata initially – those with and without collective bargaining. The sample population is derived by using all participants in the National Citizen Survey (NCS). The NCS organization is a nationally recognized survey group that performs professionally stratified samples of citizens for over 250 local governments. In order to ensure that comparable localities can emerge, an assortment of demographic and socio-economic information about each of the localities will also be accumulated. Traditional data sources for this information will rely on federal databases (e.g., Census) and other data sources illustrating commonly-accepted and relevant traits and characteristics of a local government (e.g., bond ratings). These data sources, all secondary data sources, upon compilation can provide a perspective of the local government and enable similar local governments to be grouped together; hopefully with enough representative collective bargaining and non-collective bargaining local governments in each strata segment.

The importance of developing appropriate strata segments is fundamental to ensuring empirical research can be conducted. It would not be appropriate to measure HPOs that have higher socio-economic or differing demographics that are heavily weighted with a “yes” type of independent variable (e.g., collective bargaining) against lower socio-economic localities with a “no” type of independent variable (e.g., non-
collective bargaining). Fiscal information of the locality and its funding investment in law enforcement will enable the data analysis to account for the ability of the local government’s impact to operations. This will also help illustrate any similarities or discrepancies of the influence that collective bargaining has on the operational cost of law enforcement.

In determining HPO traits that may or may not exist for a local government’s law enforcement, three primary data sources will be utilized: 1) Citizen surveys; and 2) Crime statistics; and 3) National accreditation. Sections of the NCS standardized survey have questions about law enforcement services and perceptions about citizen safety and quality of life. The Federal Bureau of Investigation (FBI) has a uniform crime report process by which all local governments submit information to the FBI. These reports capture information on the volume and types of crimes. Finally, there is a national accreditation agency for law enforcement called Commission on Accreditation for Law Enforcement Agencies (CALEA). The standards for accreditation emulate many best practices for law enforcement and while not an absolute connection to HPO results, the intent of a law enforcement office to pursue and receive such accreditation can be deemed as a trait of a HPO.

All of data and strata categories would be entered into statistical software (e.g., Statistical Package for Social Services (SPSS)). The traditional statistical results will be further compiled and analyzed in Chapter 4 - Findings for any significant variations that may emerge.
Definition of Terms

The definition of terms includes the following key words and their acronyms, as applicable, that are used throughout this research:

- Collective Bargaining: Process by which empowered employee unions and employer managements negotiate and administer labor agreements. There are generally two tiers to resolution of impasse in collective bargaining negotiations for law enforcement organizations: 1) Mediation; and 2) Arbitration.
- High Performance Organization (HPO): Ability of an organization to outperform its peers through superior customer service, efficient utilization of resources and effective outcomes in meeting defined strategic goals.
- High Performance Return on Costs (HPRC) Composite Measure: A calculation derived from a weighted average of the high performance attributes compared to costs for services derived from same concepts that return on investment (ROI) ratios are used in private sector analysis.
- Rational Choice Theory: An individual’s behavior in seeking the most cost effective means in attaining a specific goal (“ends”) whereby the “ends” justify the “means.”

Significance of the Study

A significant contribution of this study is that it seeks to not focus on just costs, but to put any costs in context with performance for local government law enforcement
services. The ability to know whether there is a result or not of collective bargaining as it pertains to a law enforcement HPO can help to include that variable in future discussions; and if there is no correlation, then it is appropriate to not include that variable in future discussions. The introduction of a new composite measure, high performance return on costs (HPRC), also adds to the significance of the study as such calculation can potentially correlate costs to performance and enable such calculations to be uniformly compiled, compared and contrasted.

As there were two federal legislation proposals in 2007 which would have redefined collective bargaining rights and those of law enforcement organizations across the United States in further empowering the unions, this research can perhaps better determine rationale of performance attribute change that may be associated for or against such proposals. These two proposals (Employee Free Choice Act and Public Safety Employer-Employee Cooperation Act) are further addressed in Chapter 2 – Review of the Literature.

**Limitations**

The limitations of this study are in the ability of collective bargaining being a key variable in differentiation amongst local governments and a factor in HPO attributes. As there are so many variables that comprise a local government’s law enforcement service and its ability to perform, isolating for any one variable is always a challenge. In addition, as this research is focused solely on the quantitative aspects of the law enforcement organization in performance, there are many qualitative aspects that are
also important which are not addressed. As examples, there are many manners in which law enforcement can contribute to a community and their citizens’ well-being; and the role that being part of a union contributes positively or negatively to an employee’s own quality of life and well-being.

**Overview of the Remaining Chapters**

The remaining chapters of the dissertation are organized in the following manner:

Chapter 2 – Review of the Literature: It is through this review of the literature that history and background is provided on collective bargaining and its role in the public sector; with emphasis on law enforcement. The theoretical frameworks of Rational Choice Theory and the other theories utilized are addressed in order to best position the analysis of this topic.

Chapter 3 - Research Design and Methodology: This chapter will formulate the hypotheses to be tested and outline in detail the steps and manner in which data will be selected and tested. Additional information will address the propriety of the data and the analysis that will result to ensure validity and reliability of the data; as well as the representativeness of the data to the population of all local law enforcement organizations.

Chapter 4 – Findings: Provides the findings from the data output results from the research process as outlined in Chapter 3 – Research Design and Methodology. The
findings will focus on correlations, not causations, between the independent and dependent variables.

Chapter 5 – Summary: Provides the summary amongst the preceding four chapters in bringing closure to this research project and positions future research in this area to further test and address similar or different variables in furthering the knowledge in this key issue.
CHAPTER 2
REVIEW OF THE LITERATURE

The literature review is meant to be a “useful but fallible source of ideas about what’s going on, and to attempt to see alternative ways of framing the issues” and not as an “authority” (Maxwell, 2005, p. 35). In addition, the theoretical framework is further illustrated, compared and contrasted to better help inform the research and its application to the problem statement. As first identified in Chapter 1 - Introduction, the following is the research question:

- **Is there a relationship between a local government law enforcement collective bargaining or non-collective bargaining workforce and a high performance law enforcement organization when cost and demographic factors are considered in determining higher performance return on costs?**

**Theoretical Framework – Research and Problem Statement Applications**

As part of this theoretical framework, Rational Choice Theory attributes will be raised in regards to their application to the problem statement and research question with focus on collective bargaining and HPO. As HPOs reliance upon the employee is critical, it is important to differentiate between an employee’s motivation and performance, as motivation is the “employee’s desire to perform” whereas performance is the “extent to which an individual can successfully accomplish a task or achieve a goal” (Steers, 1984, p. 179). In regards to the research question, if employees have just the desire through motivation to perform better, that is not enough, as the HPO attribute
would have them actually perform better. This research further explores the role, if any, that collective bargaining may have upon not just the individual’s desire to perform better, but if in fact, if they actually perform better because of a collective bargaining environment. There is much research that indicates HPO relies upon individuals to be working together and that “many of the failures of cooperation in collective action are traceable to the isolation of individuals from one another” (Frohock, 1987, p. 74). It is not determinable without further research if this isolation attribute exists at a higher or lower rate based upon the collective bargaining environment.

Rational Choice Theory - Historical Perspective

Rational Choice Theory can trace its origins to Aristotle in 350BC and his three observations: 1) “The same thing is deliberated and chosen”; 2) “Deliberate not about ends, but about means”; and 3) “Wish relates rather to the end, choice to the means” (Aristotle, 1980, p. 54). With little transformation to modern-day thought “rationality is seen as an instrument for achieving ends which are not themselves determined by reason” (Allingham, 1999, p. 1). Whether or not collective bargaining has an influence on the “means” by which HPOs can be developed and then maintained is the challenge being addressed in this research. The collective bargaining process in itself positions the worker and the employer for potentially a different “means” path, but perhaps there are more than one “means” path to the “ends” of being HPO.

Thomas Hobbes in 1651 helped further shape some of the early concepts of Rational Choice Theory in observing “all the voluntary actions of men tend to the benefit
of themselves; and those actions are most reasonable, that conduce most to their ends” (Hobbes, 1994, p. 4). However, even Hobbes recognized early that human behavior is constrained by morality. While there is nothing that is immoral with being part of a union or not being a part of a union, this flexibility affords the individual the opportunity to better achieve their “ends.” However, because many workplace environments do not easily permit for the voluntary inclusion or exclusion of being part of a union, an individual may feel the constraint of such involuntary action as an impedent in fully attaining their “ends.” However, if the environment of collective bargaining has positioned similar workers with similar “ends,” then it may be a more efficient “means” process by which one entity (the union) positions the workforce to a common “ends” and the employer can therefore negotiate with one representative body rather than the challenges of individual processes to best motivate the worker.

Another manner in which to approach Rational Choice Theory is recognizing how human behavior is influenced by passion and choice. The differentiation between passion and choice is also a topic that has been discussed for many years. In 1740, David Hume tried to explain the differentiation by denoting that reason is a “slave of the passions” with passions neither reasonable nor unreasonable, but reason is the agent when passions are manifested by “choice into action” (Hume, 1740, p. 415). Therefore, whether or not collective bargaining may or may not yield greater “passion,” it will not be the passion-fueled practices contributing to a HPO, but rather the employee “choice” factors in maximizing utility that yields the more productive worker and highly associated trait of HPO.
An often referenced story illustrating human behavior, Rational Choice Theory and the challenges of individual versus group decisions-making is “the prisoner's dilemma.” This story portrays a common situation that has the individual doing what is rational for them, but the result is not rational for the group. In this story framed by Itzhak Gilboa (2010), two people commit a crime and are arrested by law enforcement, but the law enforcement officers cannot prove the criminals are guilty unless at least one of them confesses. The prisoners are placed in separate holding cells as the law enforcement officers prepare for integration. Each prisoner reflects on whether they should confess or not with the outcomes being one of three situations: 1) If one confesses, then that one will be set free (and possibly rewarded) in order to convict the other, who doesn’t confess, to a harsher sentence; 2) If both confess, then they will get a reduced sentence; or 3) If neither confesses, they will be set free for lack of evidence. The rationality of what’s best for the individual should lead them into confessing for the possible rewards, rather than be found guilty from their accomplices confession or the lessor of the consequences that may result if both confess. Therefore, in this case, doing a rational individual choice does not provide the best option that a rational group choice would have yielded – both not confessing and being set free. “The outcome, of both getting a reduced sentence, is Pareto-dominated by the alternative of both being set free” (Gilboa, 2010, p. 92).

The prisoner’s dilemma is based upon the individual being selfish and ignores the impact of positive traits that may produce more rational choices for a group. These traits can include loyalty, altruism and other traits that a HPO related organization can
instill upon its workforce. These traits start with the professional efforts put forth in recruiting the law enforcement officer, training them properly prior to deployment and rewarding them for not just individual acts of high performance, but also rewarding the team, division or unit that may have also contributed to a successful outcome. This sense of organizational or at least team, division or unit loyalty and altruism should position the individual to make rational choices for positive group outcomes; which may also serve as a byproduct result in positive individual outcomes.

Rational Choice Theory – Maximizing Utility

It is recognized that an individual’s self-interest goal is to maximize utility; which is correlated to the concept of “ends” previously addressed and positions the individual to make choices to best serve the individual. “Choosing rationality becomes equivalent to maximizing utility” which seeks the “greatest fulfillment of pre-existing passions” (Allingham, 1999, p. 1). When referring to the individual, it should be noted that an individual’s self-interest may be for their family as well; therefore when referencing “individual” or “employee” in this research, it is implied that their motivation may also be that of their family. This may lead the individual to make choices that may not expressly benefit themselves as an individual, but rather benefit the family if the “ends” and “maximized utility” of the family unit is deemed the primary individual motivation. If maximizing the utility and its associated outcomes occurs, then it is through rational choice; anything less may be considered “reasonable” (Allingham, 1999, p. 2).
Rational Choice Theory also “maximizes the satisfaction of preferences” by “individual actors” (Hindess, 1988, p. 1). “Narrow rationality” is where individual actions are motivated by “self-interest”; however, that does not necessarily translate to the actions of a group as acting rationally (Hardin, 1982, p. 9). From this perspective, non-collective bargaining traits appear to be more self-interest targeted for narrow rationality to excel. Perhaps a key connection to narrow rationality’s success in law enforcement is whether such employees perform better in a self-interest capacity than in larger groups most traditionally associated with law enforcement unions. It is a “mistake to suppose that rational individuals sharing an interest in a collective outcome can normally be expected to act so as to produce that outcome” (Hindess, 1988, p.12) as “rational self-interested individuals will not act to achieve their common or group interests” (Olson, 1965, p. 2). The effects of groups and the effects of their negatively portrayed “groupthink” outcomes would appear to be a performance issue for collective bargaining employees to overcome. However, such potential challenges could be overcome by the individual collective bargaining employee when given an environment to perform. They are motivated by their self-interests and associate the group-interest process of collective bargaining as either a separate exercise apart from performance or rationalize their self-interest motivation as part of such exercise.

Peter Abell (1991) describes the framework for rational choice in trying to explain a specified outcome: 1) Actors responsible for generating the outcome to be rationally self-interested given their objective resources and preferences; 2) Model the structure of actors interdependencies in the sense that the outcome depends jointly on what others
do (each actor thinks about what others will do, are likely to do or have done in the past); 3) Determine courses of action each actor will rationally pursue; 4) Predict the outcome(s); and 5) If this simple model approach fails, then adjust variables that may have influenced the outcome (e.g., self-interest higher or lower). As law enforcement is a defined and technical profession for which certain individuals have similar traits and desires in pursuing a career in law enforcement, there is a possibility that because of such similarities that rational choice processes may not yield much variance. In addition, the interdependency of a law enforcement officer upon another law enforcement officer may result in “life or death” situations which may also create an environment for an individual’s self-interest in outcome goals to also be that of the collective group’s outcome goal.

It is through this individual’s awareness of their collective group that contributes to their behavior in “responding to the reality of the world around them and making decisions – the legal, approved and even encouraged decisions – that maximize their quality of life” (Murray, 1984, p. 162). It was this “reality of the world” concept that may have first motivated the laborer worker (and subsequently law enforcement officers) to pursue decision-making and advocacies to maximize their quality of life. The rise of the worker to organize and advocate for benefits is an example of the “development of the underclass” which could have been “predicted from the changes that social policy made in the rewards and penalties, carrots and sticks, that govern human behavior” in becoming “rational responses to changes in the rules of the game of surviving and getting ahead” (Murray, 1984, p. 154). It is perhaps from these rational responses that
an environment was created for private sector unions to initially materialize from an idea to a legal standing via the Wagner Act to having the public sector employee also interpret such societal benefits and higher quality of life for themselves in their advocacy of creating organized public sector unions. Until the ability to form unions existed, individuals may not have had any defined pathway towards coordination. An “absence of assurance and coordination among individuals can make second-best choices rational to all” because a “joint outcome of such choices is a rationally inferior product from the point of view of the participating individuals” (Frohock, 1987, p. 131).

Archer and Tritter (2002) identified three assumptions in their critique of Rational Choice Theory: 1) Rationality; 2) Individualism; and 3) Temporality. For rationality, what people care most about involves emotionality and normativity; however these traits and the related norms are challenged in being constrained into the Rational Choice Theory model of the average person seeking to maximize utility; even if the apparent purpose is mysterious (Archer and Tritter, 2002). In this case the “people” are the employees and how the effects of collective bargaining influence the employee in their perception and feelings of how things should be from a normative state and how congruent those perceptions and feelings are with the employer. Even if perceptions are congruent, the next question would be if the means to achieve are aligned with HPO traits of law enforcement. This is a challenge in many workplaces that may have benefited from being associated with other HPOs, but their achievement was not from any employer-driven process, but simply from the collective individual actions of employee’s emotions and normative desires. Conversely, the employer may think they have developed the
plan and provided the environment for HPO to succeed, but may fall short in also ensuring that employees also aspire to the same “means” path to defined HPO success.

For individualism, the structure and culture of society influence personal goal-formulation, which may challenge the individual’s current state of self-interest; not by simply changing their self-interest to a more altruistic contributing member of society, but rather influence the individual’s environment enough for them to modify their previously defined self-interests. An “extended sense of individuals may contribute to a solution generalizable to several different types of rational breakdowns between individual and collective” (Frohock, 1987, p. 75). The societal influences and the situations presented to the individual cannot be simply treated as aggregates, but rather influential traits that impact decision-making (Archer and Twitter, 2002). The effect of a changing environment is a challenge that any HPO operating in a continuum state of high performance overcomes. These environmental changes are often subjective in nature and how an employee reacts to these changes is also subjective, but generally within their self-interest. This challenge faced by employers is something shared by collective and non-collective bargaining employers. In addition, the representative unions are also faced with their self-interest as a collective group and also may change strategies and goals over time acting in their group’s self-interest while challenged with the ability to properly reflect their individual members also being influenced by similar or different societal changes.

In addressing Archer and Titter’s (2002) third assumption - temporality, the individual’s rational choice process is not a consistently structured process that evolves
to the same decisions through maximizing utility as an individual’s values, creativity and environment changes over time so would the values they assign variables in defining utility maximization. It is through these individual experiences that reflection of past experiences will occur in the future, learning traits are further developed and their inherent creativity make it challenging to predict what will be the preferences in the future as current experiences continue to influence the individual (Archer and Titter, 2000). This variability and subjective nature in which they arise should focus the employer on developing proper educational training to mitigate adverse changes from employee’s evolving of different utility maximization variables. Longer tenured employees for which past experiences have been positive, may also be able to continue on a less volatile utility maximization path or at least on a path congruent with that of the HPO or aspiring HPO. The effect of past experiences and environmental changes also may either challenge a union or further strengthen it in a manner similar to that of a HPO.

**Rational Choice Theory – An Individual’s Means to an End**

A fundamental assumption of Rational Choice Theory is the individual’s means to the end as the influential manner in which their behavior motivates them to make decisions amongst alternatives for which their preferences in selecting the actual decision are in their self-interest. An individual is considered a “simple unit of classical rationality” when they rank preferences on “sets of knowledgeable values, settling on means to get these preferences” (means produced by rational, constrained by moral,
rules) and acting consistently in a “means-ends” system (Frohock, 1987, p. 131). However, when the outcomes from these means-ends approach fall short of individual’s rational criteria, the dilemma that arises may be from conflicts that also arise between an individual’s own social structure, the rules used to combine values and the actions of others (McClennen, 1983). These actions of others in the workplace may be co-worker to co-worker, subordinate to supervisor or upper management to workforce. For those conflicts that arise from hierarchal issues, the greater impetus exists for an environment of fellow co-workers advocating for a similar “means-ends” system. The formality of this advocacy is a differential between unions and their collective bargaining ability and non-union workplaces. Regardless of the mechanism to address, the individual will continue to seek their “means-end” system; the challenge for the employer is trying to align such system towards a HPO environment.

Rational Choice Theory analysis involves an “explicit methodological individualism and a distinctive model of the individual actor” (Hindess, 1988, p. 93). However, an alternative to “methodological individualism” may occur as individuals are “acting out of social norms rather than individual rationality” (Elster, 1986, p. 23). These social norms should not be governing forces, but rather, can be viewed as interfering when collective thoughts of individuals have no clear choice. In addition, these social norms, even if they are laws, can change and therefore should not be the primary basis by which rational choice of individuals is formulated. It would appear that when no clear choices are evident, that social norms over the long-term can either be positioned to make a clear choice more apparent or make it permissible as a society to have multiple,
but finite choices from which to choose. This perhaps sets the possibility that there is neither an absolute social norm that may exist for collective bargaining or non-collective bargaining as these choices, while clear and distinct, may each have a rational basis from an individual’s perspective that is reinforced if that individual is surrounded by similar collective thoughts of other individuals. This also appears to not constrain a HPO (or existing organization seeking HPO status) in developing multiple, but finite courses of action to best position the employee, customer and organization for continuum of HPO success. The result for law enforcement officers is that they will be “happier in their work and more productive when the decisions they are allowed to make for themselves are maximized and the decisions others make for them are minimized” (Maddox, 1975, p. 25).

In attempting to illustrate in another manner the individual’s motivation and environment for decision-making in the “means to an ends” system, Hanna Nurmi (1998) developed the setting of decision theory as depicted in Figure 2.1: Single Decision-Maker. This table illustrates a single decision-maker faced with a choice problem in an essentially passive or disinterested environment. Depending upon how much they know about the environment, the decision-maker is operating under “decision modalities of certainty, risk or uncertainty” (Nurmi, 1998, p. 5). If there is certainty, then the decision-maker should know everything about the environment and the outcomes (and consequences) of any choice. For these situations, the decision-maker is actually choosing between consequences and would therefore make a clear selection in maximizing their utility towards the “ends” of their goal.
If there is risk amongst the choices, then the decision-maker is assessing the probabilities, outcomes and consequences based upon such risks. If uncertainty, the decision-maker does not know the probability of the outcomes and consequences as the relative newness of such situation does not afford the decision-maker any knowledge to assess probability. For risk or uncertainty choices, the individual still pursues the path towards the “ends,” but because the environment for making such decision is not absolute, there may be environmental or other factors that could change the individual’s choice and it is the HPO that best educates and positions its employees to make choices to further position the HPO for success.

In any of these three situations (certainty, risk or uncertainty), rationality will seek utility maximization based upon behavioral assumptions. These behavior assumptions follow preferences in having the decision-maker choose between preferred alternatives in their goal to make “optimal choices in specified environments” (Nurmi, 1998, p. 15). A high performing law enforcement officer relies upon their environment and its actors in assessing, often in split-second decisions, what actions they as an officer will take and the related outcomes and consequences of such actions. Because of the numerous instances in which law enforcement officers may be in such situations, the rationality of utility maximization is possibly more correlated to this profession than other professions.
A model that represents the various paths to social outcomes in rational choice explanation was developed by Debra Friedman and Michael Hechter (1988) and is illustrated in Figure 2.2: Various Paths to Social Outcomes. The actors and the information available to them (whether intuitive information or information sought by the actor) enable them to begin a rational choice process. Variations in outcomes are attributed to variations in an individual’s preference, opportunity costs of foregoing the next most attractive course of action and institutional constraints (e.g., laws, family, religion, employer). While the process presented represents the individual as the actor through the social outcome of that individual’s rational choice process, many social outcomes are actually a compilation of many separate individual actions aggregated to produce the actual social outcome. For the HPO employer, having an employee (“actor”) possess the proper information and creating an environment whereby work
productivity is very high on the hierarchy of preferences (for which opportunity costs and institutional constraints are best managed), should produce the desired social outcome to further contribute towards a HPO. In relation to law enforcement organizations, structured training helps positions all the officers to attain information and it is the employer’s hope that through such training that productive decisions and utilization of their time while assigned will be the result.

**Figure 2.2: Various Paths to Social Outcomes**

![Figure 2.2: Various Paths to Social Outcomes](image)

**Rational Choice Theory – From Individual to Group**

While most discussion has focused upon an individual and their Rational Choice Theory process, collective groups can also seek utility maximizing behavior strategies. Understanding collective groups can help better frame differences that may or may not exist between union and non-union environments as well as differences that may or may not exist between HPOs and non-HPOs. Because of this “universal maximizing
behavior,” other groups could include “firms, families, social movements, political parties, governments, racial and ethnic groups, churches or scientists, as they all are assumed to optimize their utility functions” (Zafirovski, 1999, p. 48). However, collective groups may not always be the conduit by which an individual perceives to achieve their goals as rational choice can also lead an individual to act in a predictable manner under a defined set of circumstances, even if that decision is to not join the collective action of others. Therefore, there are circumstances in which the individual and not the collective group may be positioned to perform better given the defined set of circumstances and environment in which to perform.

As unions are a group, they can be treated as social systems and as relational systems consisting of group members; “their relevant interrelations and dependencies, as well as some artifacts” (Peter and Schmid, 2007, p. 236). “Social groups are formed by agents who have similar goals or interests (concerning some topic) and who are mutually believed to be members of the group” with their topic of concern considered to be the group’s “ethos” (Peter and Schmid, 2007, p. 236). For workplaces, employees have an “ethos” that can be through informal associations, or for collective bargaining workplaces, the “ethos” structure is more formal. It is from this “ethos” that the group share “constitutive goals, standards and norms” that are collectively accepted by the individual group members that enables “coherence and unity” traits to emerge in the group and cooperation is “more likely to emerge” in these “ethos-related topics because the agents’ preferences are likely to be positively correlated” (Peter and Schmid, 2007, p. 236). The challenge for the law enforcement organization is to leverage such “ethos”
towards a HPO environment and, at a minimum, not position such “ethos” to be adverse to the law enforcement organization’s outcome goals.

For the law enforcement employee, they may be continually challenged in having to reinforce the group’s “ethos” with the risk that issues, perhaps many, may arise in which their own personal belief system is challenged or compromised by that of the group. This challenge is reiterated every time an individual acts in group dynamic for “when a group member acts as a group member” they must respect the “ethos of the group” and reinforce the commitment collectively agreed-upon (Peter and Schmid, 2007, p. 236). If the individual believes that they do not possess the ability to influence or change group “ethos” to their own personal belief system of utility maximization and means-end concepts previously addressed, then stress may be incurred by the individual with the byproduct being a lower performing worker and a lesser HPO. Therefore, in order for the group ethos to succeed, it can be assumed that an individual needs to possibly compromise their own individual self-interest for the betterment of the collective group.

However, “some of the greatest mistakes in human history had to do with assumptions that people will be kinder, gentler and more altruistic than they ended up being” (Gilboa, 2010, p. 98). In presenting a scenario where the assumption of the individual’s self-interest is subordinate to that of the group’s, Gilboa (2010) uses communism as a case study. Communism may have sounded better than it actually turned out to be, because a flawed assumption was that the people would provide for the well-being of others. However, because of selfishness and other variables, secret
law enforcement officers and other overzealous governing institutions were often created and survival of the individual (or family) and not of the group became a more paramount motivator; which in effect negated any of the initial perceived benefits of communism. This is not to intend any correlation to collective bargaining or other workplace collective group roles to communism, but rather to recognize inherent challenges exist when an individual with their self-interest is constrained daily to sacrifice their self-interest for that of a larger group. This group in some cases may be people who do not share the individual’s value or judgment system, are influenced by different environmental factors or who otherwise may not simply work as hard for the collective action for which the individual may deem these other individuals a “free-rider” at the expense of their own hard working efforts.

The “free-rider” analogy is similar to national defense – once a country has a national defense to properly protect its citizens, both the taxpayer and the non-taxpayer receive the same benefit from national defense regardless of who may have invested more of their time, money (taxes) or sentiment towards the national defense program. A remedy for the “free-rider” problem is “social coercion” (Hindess, 1988, p. 13) whereby apparent and visible pressure is applied to individuals, perhaps in a mandatory or compulsory fashion, in order for all applicable individuals to “appear” vested in the situation. This does not differentiate whether voluntarily or involuntarily vested; hence the “appear” emphasis. As it pertains to collective bargaining, social coercion techniques leveraged many state laws and its employers to have employees pay compulsory dues and upon such mandatory payments, the “employees voted in much
more overwhelming margins for union-advocated topics” (Olson, 1982, p. 22). The compulsory nature of such union operations may be challenged if it is not in the self-interest of the employee to be compelled towards anything compulsory; however, if such compulsory items serve the individual's means-end and utility maximization desires, then such compulsory items may be tolerated by the employee.

Perhaps what provides unions their momentum and continuity of existence is that the employees that they represent may generally be the same types of employees for whom the needs for the unions were first advocated. The actions of the current day employee’s predecessors was for a purposeful change in the manner of how an employee should be treated by the employer; with a common-shared goal with the employer – to have the employer maintain its operation and thereby its workforce for employer profit and employee income. This initial grass-roots action of employees who may have felt disenfranchised may be a cornerstone to a “functioning society” as well as the “engine of social change could be grounded in the purposive actions of individuals, taken in particular institutional and structural settings that shaped the incentives and thus the action” (Coleman, 1986, p. 1309). It is groups of people, and perhaps unions themselves, that utilized their collective means to define their group's necessary compensation, benefits, grievance and workplace conditions and performed the necessary action steps to try and attain such goals.

The more similar a group’s underlying characteristics and traits are, the better the group is able to leverage the proper resources (e.g., time and money) needed to act on behalf of the larger group. “Group heterogeneity has a positive effect on the prospects
for collective action” as a smaller critical mass can provide “collective goods that can benefit others” (Oliver and Marwell, 1988, p. 4). In essence, the number of group members willing and able to give at any contribution level is always higher for a larger group. “Since collective goods with pure joint benefit of supply have a fixed cost that does not vary with the size of the group enjoying the good, the greater expected number of large contributors in a larger group means that, in general, fewer people will be needed to achieve a given total contribution size than in a small group” (Oliver and Marwell, 1988, p. 6). This may be a factor in how over time various unions have joined forces (e.g., American Federation of Labor and Congress of Industrial Organizations (AFL-CIO)) in uniting for a common good as the efficiency of one entity may not only be more successful in its advocacies, but that the resources needed to advocate may be easier to attain with such a large group. Even though the AFL-CIO is comprised of 56 underlying national and international unions with little direct influence over the collective bargaining processes that these individual unions may go through with their employers, it nevertheless serves as a common entity with resources to be shared amongst its member organizations in best positioning them to be a successful union (AFL-CIO, 2008).

While the preceding highlights the advantages and rewards of social groups acting on behalf the individual, there are also many disadvantages and challenges experienced. Many social groups are subject to collective sanctions, including both collective punishment (e.g., the military practice of punishing all recruits in a barracks for the violation of a single recruit) and collective rewards (e.g., bonuses for especially
productive work groups). These incentives sometimes “encourage group members to monitor and regulate one another’s behavior and, in doing so, create norms and enforce their compliance” to such norms (Heckathorn, 1988, p. 535). As the individual’s self-interest may not be aligned with any third party’s regulations and constraints over them, it is important for any employee representative group, union or non-union, and the employer to monitor its regulatory and constraining nature in reinforcing desired or targeted behavior. Simply changing its culture from removing collective disincentives to be replaced with collective incentives may not in itself change the constraining attribute of the employee and their self-interest. In reference to law enforcement organizations and unions, the nature of a law enforcement officer’s solitude in performing their job (e.g., patrolling alone), may often leave the officer without a sense of belonging. The law enforcement union can provide a “sense of belonging”; an accomplishment that they cannot get from a largely impersonal law enforcement organization (Salerno, 1981, p. 38).

However, if designed properly, collective incentives can have exactly the “opposite effect as a group threatened by collective punishment could react by not complying and attack the agent that issues the threat” (Heckathorn, 1988, p. 536). Douglas Heckathorn (1988, p. 378) studied collective reward and punishment incentives and determined that they can be highly effective at creating “exogenous compliance norms” or may have the “opposite effect and provoke passivity or even revolt.” According to the model, the effect of control depends upon both the attributes of the agent that controls collective incentives (e.g., agent’s monitoring capabilities,
vulnerability to revolt and the strength of the agent’s sanctions) and the attributes of the group (e.g., the group’s size, degree of intragroup control, proportion of potential violators, costliness of normative control and revolt). It would appear that a HPO challenge is to have a collective incentive system designed to create a culture of high performance norms without having adverse side-effects (e.g., passivity or revolt) arise. This challenge is also one shared by employee unions in representing their members. This constraining aspect is further reinforced for unions that require a majority of the workers in a “specific bargaining unit to vote for union representation” and the growing, and better managed “employer resistance” and labor laws benefiting employers (Verma and Kochan, 2004, p. 7).

Other Theories Utilized to Support the Research

Conflict Theory frames the perspective of the impoverished worker through which collective bargaining was a means to which improved working conditions and fair wages and benefits could be better realized. From a rational perspective, “systematic deduction of public policies from moral principles, with the welfare function one derives polices from quantitative (economic) analysis that calculates how general preferences around ends may most effectively be realized” (Harmon and Mayer, 1986, p. 268). Two concepts as it pertains to unions and Conflict Theory revolve around the ability of a union having a “voice” through constituent membership and how such “voice” impacts policies and decisions of an organization.
Chris Argyris (1960) tries to connect the individual's psychological contract with a “seminal dynamism” or future action of various forces as a manner in which organizational policy can be evolved and embraced. Albert Hirschman (1970) describes an “inceptive or beginning value” whereby the individual is part of an action or policy which affects both the individual and the organization. While Karl Marx focused on the way individual behavior is conditioned by social structure, Max Weber emphasized the importance of social action, the ability of individuals to affect their social relationships (Livesay, 2010). C. Wright Mills highlighted social structures created through conflict between people with differing interests and resources whereby individuals and resources, in turn, are influenced by these structures and by society’s unequal distribution of power and resources (Knapp, 1994). As it pertains to HPO, workplace environments may or may not be differentiated between unions and non-unionized; therefore Conflict Theory may or may not have the same propensity to motivate worker to perform better.

Self-Determinant Theory focuses on an organizational design and behavior perspective of intrinsic motivation (i.e., workers have passion to advocate on behalf of clients which in return enables the worker to be more enriched on the job and to personally and professionally grow as an individual). This theory was initially developed by Edward Deci and Richard Ryan (2002) and noted the importance of the employee to feel the need for competence, autonomy and relatedness. Another element that arose from this study was the satisfaction union members got in not just advocating in areas specifically associated with their area of expertise, but also in having a voice in the
community on other areas of community interest in helping give attention to such issues (e.g., social injustices). Finally, the correlation of current union members to their family's history of union involvement represents a “loyalty” measure that may motivate the worker to perform better.

The intrinsic motivation of workers to advocate on behalf of co-workers enables the worker to be more enriched on the job and to personally and professionally grow as an individual. The Self-Determinant Theory is focused upon employee’s motivation while mitigating external influences. Deci and Vansteenkiste (2004) claim that there are three essential elements of the theory: 1) Humans are inherently proactive with their potential and mastering their inner forces (e.g., drives and emotions); 2) Humans have inherent tendency toward growth development and integrated functioning; and 3) Optimal development and actions are inherent in humans, but they don’t happen automatically. While there may be extrinsic factors of motivation, the primary focus is on intrinsic factors. However, the influences of a union may represent an extrinsic factor in the rewards of compensation and benefits.

Self-Regulation Theory is also focused on an individual’s desire to control their environment; especially during stressful conditions. Illusions of control can arise when the environment may not be conducive or receptive in enabling the employee the opportunity for such control (Fenton-O’Creevy, Nicholson, Soane and Willman, 2003). The effect of collective bargaining may enable such control to be realized by the employee if the union and the individual’s control-related goals are the same and stress is mitigated. However, if such traits are not aligned between the individual and the
union, then an individual’s control desires may be more comprised than if they were not in a union. Karoly (1993) defines Self-Regulation Theory as those processes, internal and/or transactional, that enable an individual to guide their goal-directed activities over time and across changing circumstances. The processes of self-regulation are apparent when recurring activity is constrained by irrelevant goals, new challenges and the failure that can occur from repetitive actions without regard to thought. Self-Regulation Theory appears to be the stable element attempting to guide behavior along a specific path to a directed aim or goal (Karoly, 1993).

**Expectancy Theory** is the motivation an employee has based upon the desired outcomes which emphasizes the employer’s rewards should “relate directly to performance and to ensure that the rewards provided are those rewards deserved and wanted” by the employees (Montana and Charnov, 2008). As collective bargaining may be more associated with uniform rewards provided to the employees, then the employee’s motivation may be mitigated without employee rewards for employee performance. However, if the tasks are being performed require team traits and such rewards were better aligned with the team accomplishments, then perhaps such motivation may not be mitigated. The Expectancy Theory focuses on the three components: 1) Expectancy; 2) Instrumentality; and 3) Valence; with the “motivational force” being a factor of all three (Rao, 2000). It can be applied in two different formats according to Kim and Bae (2005).
Firstly: For the union organizations, it is the union’s motivation in participating in organizational change and innovation that will produce a desired outcome for which the union will benefit. The union also goes through the cognitive process acting as an agent for the employees in making the choice to participate. In essence, the employee has deferred such cognitive process to the union and is accepting of the union’s judgment, then is motivated to succeed and be rewarded in a collective manner by such outcome (individual reward not apparent).

Secondly: For the non-union organizations, the traditional Expectancy Theory process is experienced at the individual employee level; and it is the expectation of the individual that individual rewards will be granted to reinforce such motivation that enables them to make the choice of positively participating in change and innovation.

Workforce Classifications and Collective Bargaining

Historical Perspective

The United Nations recognized the ability of workers to organize unions as a fundamental human right (United Nations, 1948) and the Internal Labour Organization notes the "freedom of association and the effective recognition of the right to collective bargaining" as an essential right of workers (Internal Labour Organization, 1998). In contrast, collective bargaining has also been associated with increased costs of labor
and benefits, especially health insurance and retirement, which may overcompensate the employee and may provide an inability of the employer to be competitive and adapt to market changes. Over the past fifty years, private sector unions have declined in membership while public sector unions have grown or at least remained stable (Carrell and Heavrin, 2004). According to the U.S. Department of Labor, Bureau of Labor Statistics (2004), public sector employees represented by unions constituted over 40% of the total government employment in 2003; the highest amongst any private sector categories of employment is only 13%. Union organizing was primarily motivated by dissatisfaction with working conditions and the perspective that unions could improve these conditions; however, this motivational aspect of organizing is not as applicable in the 21st century (Verma and Kochan, 2004).

While this motivational aspect may be less in the 21st century, this fragmentation between employer and employee as it pertains to law enforcement was evident in the early actions of the Boston Police Social Club (called a “club” prior to formal law enforcement unions with no collective bargaining powers). When the Boston law enforcement chief in 1919 refused to recognize this social club as having union status, a majority of the law enforcement officers “walked off the job” for four days which resulted in “widespread looting, hundreds of injuries and seven deaths” with order restored only upon National Guard arrival (DeLord, Burpo, Shannon, and Spearing, 2008, p. 227). With the National Guard’s presence, all striking law enforcement officers were “terminated and related labor unions (e.g., American Federation of Labor (AFL)) concern about solidarity and strikebreakers did not have them further advocate or strike”

Even though political intervention did not arise in providing the opportunity for law enforcement officers to form unions and collective bargaining, that does not mean that such services were absent of any politics. During the first half of the 20th century, there was a high level of political interference in law enforcement organizations. “Patronage was rampant, and employment or promotion was often dependent on how well connected an individual was, rather than how capable he was to fill the position” (Salerno, 1981, p. 4). Perhaps because of such organizational structure, which appears to be completely devoid of any HPO characteristics, there was no incentive by many of the rank and file officers for forming unions as the politically-influenced employment and promotion aspects of the law enforcement organization began at the hiring stage of the entry level officer. Therefore, the entry level officer, already benefiting from some form of political patronage, may have been positioned to benefit over and over from the same patronage; even if the benefit was simply retaining their job with low productivity and performance.

It wasn’t until New York City started the law enforcement union movement in 1958 did law enforcement unions begin to gain momentum and prominence. However, public sentiment toward public sector collective bargaining, especially law enforcement was hostile (Ichinowski, Freeman and Lauer, 1989). President Kennedy’s 1962 Executive Order 10988 is largely credited with providing the momentum for public sector unions to gain momentum nationwide. While Kennedy’s Executive Order only pertained
to certain federal workers (i.e., armed forces have never been unionized), many state legislatures began to feel pressure to enact collective bargaining-friendly laws (Kearney, 2001). Between 1958 and 1968, various court cases and local government policies discouraged collective bargaining in the public sector. An example was a 1963 Michigan Supreme Court decision that upheld the "Muskegon Police Chief's policy that essentially prohibited law enforcement officers from becoming members of unions" (Morgan and Korstad, 1977, p. 3). However, in 1968, the 7th Circuit U.S. Court of Appeals in *McLaughlin v. Tilendis* ruled that an individuals’ right to form and join unions are protected by the First Amendment (398 F 2nd 287, 7th Cir., 1968).

The two national law enforcement unions that started out as employee organizations, not unions, are the Fraternal Order of Police (FOP) and the Police Benevolent Association (PBA). The FOP, with 310,000 members currently, formed in 1915 in Fort Pitt, Pennsylvania as law enforcement officers were unhappy with 12 hour working days and other poor working conditions (Fraternal Order of Police, 2004). The PBA (actually the “P” initially stood for “Patrolmen”) began in New York City in 1892 as a social institution and by 1914 became an effective political lobbying force in defeating New York legislation associated with mitigating a law enforcement officer's right to appeal dismissal (Colwell, 1994). Even though these and many other examples of poor working conditions for the law enforcement officer existed similar to that of other laborers, law enforcement unions did not initially experience the same expansion in unions or collective bargaining ability as other labor unions (private and public sector). One rationale behind such lagging unionization is that law enforcement officers have
been “historically opposed to true unionization, because of their generally conservative philosophies, the unsavory history of some trade unions and the fear that unionism is diametrically opposed to professionalism” (Salerno, 1981, p. 36).

Even though such law enforcement unions may not exert the same powers (e.g., no strikes permitted in 49 states and in the remaining state (Montana) there are many barriers to striking), law enforcement officers have large representation in unions. Law enforcement officers and firefighters have over 36% of their employees nationwide part of a union; which is second only to teachers for all occupational categories, private or public (U.S. Department of Labor, Bureau of Labor Statistics, 2004). This percentage increases substantially when it is just large law enforcement organizations; with over 70% of organizations with greater than 100 sworn officers engaging in collective bargaining (Zhao and Lovrich, 1997).

Ultimately, it has been a state’s right to determine whether or not to permit collective bargaining (and the related unions needed to represent the worker) for local government employees and law enforcement officers. The threshold of enabling a union first divides each state into “right-to-work” (twenty-three states) and “agency shops” (twenty-seven states) whereby two tiers exist for the right-to-work states: 1) The state, generally through its constitution (six states) or legislative code (seventeen states), defines whether or not a union can be established and if so, does it also enable public sector unions and if so, does it enable law enforcement unions; and 2) If it does enable unions, then the employees have the right to either join or not join such union. Indiana
was the most recent to change its status to right-to-work in 2012 with the previous state change to right-to-work being Oklahoma in 2001. What makes Indiana’s change to right-to-work unique is that it is now the only non-contiguous right-to-work state.

For the twenty-seven states that are not right-to-work, these states enable unions via “agency shops” to be formed through membership votes. Upon the formation of the union, the union acts as an agent for all employees in negotiating with the employer, whether or not they are formally part of the union membership. For those employees who choose to not become a member after a defined period of time after employment, these non-union employees still may be required to pay a portion of established union dues for the union’s actual efforts involved with collective bargaining on behalf of the non-unionized employee.

The Supreme Court, in *Communication Workers v. Beck*, 487 U.S. 735 (1988), ruled that “objecting nonmembers cannot be required to pay union dues. The most that nonmembers can be required to pay is an agency fee that equals their share of what the union can prove is its costs of collective bargaining, contract administration, and grievance adjustment with their employer” (National Right-to-work Legal Defense Foundation, 2012, p. 1). This situation creates a variance between those employees who are members of a union and the higher number of employees that are represented by a union.

It is through more formal employee organizations that arise from collective bargaining that a law enforcement officer can “improve not only their personal means”
(e.g., compensation and benefits), but also improve their “professional destinies” through having more formal opportunities of input (Maddox, 1975, p. 25). As Figure 2.3: Public Sector Union Membership and Representation illustrates, this divide has narrowed between 1983 and 1995 as it appears that a greater percentage of employees actually are members of the unions that represent them.

Figure 2.3: Public Sector Union Membership and Representation

![Graph showing public sector union membership and representation from 1983 to 1995.](image)

Includes Federal, State and local government employees
Source: Bureau of Labor Statistics

Figure 2.4: Right-to-Work States Map is reproduced from the National Right-to-work Legal Defense Foundation and highlights the twenty-three states with “right-to-work” laws as evidenced by darker shaded areas (National Right-to-work Legal Defense Foundation, 2012). What can be confusing terminology to many is that even in right-to-work states there may be the enabling of unions to form, but it is not uniformly granted
that these unions have collective bargaining powers bestowed to them. Instead these unions, if permitted, may be a membership-based group that employees can join voluntarily; which generally impede its ability to attract and retain members as it is challenged to overcome the “free-rider” concept discussed previously. For these right-to-work states, the employee representative groups may act in capacity of presenting needs and requests to the employer, but the employer is under no contractual process to negotiate or bargain with such group. These unions may also not have rights to “work to the contract,” slow down their work or strike as many other collective bargaining empowered unions have those tools in non-right-to-work states (National Right-to-work Legal Defense Foundation, 2012, p. 1).

While the preceding sentence may not be as applicable for law enforcement unions (e.g., strikes, with many limitations, are only permitted in one of the non-right-to-work states for law enforcement unions), it does illustrate the variances that can arise between states. For example, Florida is considered a right-to-work state, but their state law permits unions to be organized; however, such membership in the union is not an expectation for the new employee. The Florida constitution outlines such provision as follows: “The right of persons to work shall not be denied or abridged on account of membership or non-membership in any labor union or labor organization. The right of employees, by and through a labor organization, to bargain collectively shall not be denied or abridged” (US History, 2012, p. 1).
As in Florida and other places in which the collective bargaining exercise must be performed, “there is no doubt that collective bargaining has taken or will continue to take some of a chief’s unilateral decision-making authority away from him” (Salerno, 1981, p. 43). The manner in which such time constraints and authoritative manners are suppressed and its correlation to performance is not readily apparent. However, from an efficiency perspective, any additional time of the employee or employer that is consumed on tasks (e.g., collective bargaining negotiating) that are not correlated to an increase in efficiencies that arise with agreed-upon labor contracts, may represent an inefficient use of time and its related cost incurred on such time-consuming activities. From a time management perspective, “collective bargaining as a concept is not...
incompatible with professionalism because it is no more than a device in which men sit across a table from one another for communication purposes” (Maddox, 1975, p. 130).

In illustrating the difference in organizations across the United States, a study of private sector employees determined that 20% of the private sector workforce was a member of a union in non-right-to-work states whereas only 8% of private sector employees were members of unions in right-to-work states (Davis and Huston, 1995, p. 223). This difference reflects that not only is there a difference in how the states view their private sector workforce’s ability to collective bargaining, but how such persona is also reflected in the politician (who makes the laws) in how private sector workers are also viewed. In addition, there is a “paradigm shift” occurring in labor unions in “where, how and by whom goods are produced” and four trends continue to support this shift: 1) Global completion and deregulation; 2) Workforce demographics (e.g., women and part-time workers), increase in number of illegal immigrants who fear retribution in organized structures and transition from manufacturing to service-based industries; 3) Federal laws (e.g., safe workplace conditions and family medical leave); and 4) General little interest from the new generation of workers (Wagner, 2008, p. 17).

All of these issues has challenged the HPO in determining where and the manner it should produce its goods, and when mobility issues are not over-constraining, then the employer may often move such production facilities to an environment that the employer believes can position it better to maintain or attain HPO status. A current example of this challenge is Boeing. As Boeing created a new product, the 787
Dreamliner, it decided that it would be better for the company to build it in South Carolina (a right-to-work state) instead of Washington with its unions that caused various Boeing plant shutdowns over the years during contractual negotiations. What has made this private sector decision more complicated and the subject of national attention is that the United States government has intervened and determined that Boeing’s move cannot occur if the primary reason is seeking a non-unionized workforce; a current legal challenge requiring a lengthy court process to resolve (Steinglass, 2011). While mobility issues in the production of goods is not applicable to the public sector (e.g., City ABC can’t move to another state), it does illustrate an inherent variance between public and private sector unions. The economic factors benefiting one locality and hindering another locality because of private sector relocations may impact the quality of life factors for general citizens’ at-large in the localities affected by such migrations.

Collective Bargaining – Benefits to Today’s Worker

With regard to collective bargaining, the benefits bestowed from the union to the employee will most likely occur whether the employee is active in helping the union or the collective bargaining negotiation process to succeed. Because of this inherent dilemma, there may not be a connection between the employee and the union. This dilemma causes the challenges that arise in voluntary union workplaces whereby the non-union members may receive the same benefits as the union members without the
contribution of union dues and the time needed for union activities. For these workplaces, additional incentives from the union may need to be provided so that union members feel the return on investment of such costs and time (Hindess, 1988). This would also avert the “free-rider” challenges previously addressed as the non-union “free-rider” employee receives the same contractual benefit as the dues-paying employee. This challenge is partially overcome in legal authority granted to unions to recover the pro-rata costs of collective bargaining negotiations from non-union members via a calculated fee. This fee may be far less than any union membership dues and does not grant the employee any other union membership privilege.

Today’s employee expresses a “strong interest in having a job environment that supports continued learning and development,” enables the worker flexibility in balancing work and family life; all without the stress commonly associated with “risks of strikes, employer retaliation and resistance” (Verma and Kochan, 2004, p. 7). These self-interest worker desires can be compatible with a HPO. The organizations that can meet these current day desires of the worker will be in higher demand for existing employees to remain and prospective employees to apply. It is when these workplace traits don’t exist that the employee would feel more compelled to leverage the abilities of a union to advocate for such traits or migrate to another employer that provides the environment of such traits; regardless if the new employer is an union or non-union workplace. Many of these organizational trait concepts illustrated for the self-interest of the worker may not be traits that traditional unions possess; which is also a challenge to continued or growing membership. In addition, there is “twice as many former union
members as there are current union members”; which makes recruiting for union membership increases even more challenging (Verma and Kochan, 2004, p. 8).

The premise that workers would be long-term employees of a single company helped position for a strong union with a continuum of members. However, an “independent workforce” has emerged that enables them to perform in a variety of manners and often “flexible models of work” (e.g., self-employed, independent contractors, temporary worker, contracted employees) (Wagner, 2008, p. 204). These growing populations of an independent workforce are more directly responsible for themselves in earning an income, getting access to affordable health insurance and plans for retirement savings. Because of the very nature in how the individual defines in their own self-interest the work environment and scope, moving from one employer to another or changing their scope for new challenges and rewards, negates their need to be part of a union whose foundation is built-upon continuity of same employer with increased benefits as a reward for tenure.

An additional challenge for the law enforcement officer union is the inherent conflicts between their law and order mantra with that of certain union strategies of creating disruption when impasse in negotiations occur. When the labor movement was in its infancy, it was the local law enforcement officers who were needed to restore order from protesting workers in the early stages of their union or during a strike; which created divides between the law enforcement officer and union worker – “a situation that has never been completely rectified” (Salerno, 1981, p. 4). In addition, because many
law enforcement unions negotiate locality by locality for their own union, there are challenges in having these segmented union contract processes seek the same benefits and desires; even with affiliation of national law enforcement union organizations.

There is a “fragmented local, state and national law enforcement labor movement” and the lack of a unified voice from law enforcement unions on issues pertaining to the “democratization and improvements of policing” (DeLord, Burpo, Shannon, and Spearing, 2008, p. 224). The effects of these fragmentations on the ability to attain HPO is not readily known, but it is through this type research that additional insight may be gained into determining correlations, if any, between collective bargaining and high performance. However, even with these uncertainties, an analysis of law enforcement union contracts between 1975 and 1981 determined that collective bargaining over time favors the local law enforcement union as it becomes more empowered and influential (Feuille, Delaney and Hendricks, 1985). Therefore, the longer standing unions and their collective bargaining strategies are a sustaining force; whether or not HPO correlations exist.

Johnson and Jarley (2004) approached this topic from another perspective. Through the application of mobilization, social exchange and organizational justice theories, union participants were surveyed to determine worker’s perceptions of workplace injustice and union justice in explaining an individual’s participation in unions. These measures were also benchmarked against more traditional measures of union participation (e.g., job satisfaction and union instrumentality perceptions), to determine
what factors correlated better for union participation. As workers often assign blame for their work-related problems to their employer, this research tried to distinguish such directed dissatisfaction. The Equity Theory is evident as it deals with workers’ perceptions of fairness and equity regarding how rewards, punishments and workloads are provided amongst the workforce (Johnson and Jarley, 2004). Rational Choice Theory is also noted in how workers weigh the costs ("means") and benefits (potential "ends") of union participation and its correlation to the actual member goals (actual "ends") that can be satisfied through union participation (Johnson and Jarley, 2004).

Public sector unions not only have “voice privileges” at the negotiating table with their employer similar to private sector unions, they also “exert voice at the policy making table with elected officials” (Freeman, 1986, p. 42). This influence can also be associated with public sector workers voting at a higher rate than private sector workers and with this higher turnout rate a “greater influence over political conditions within government” also occurs (Babcock, Engberg and Glazer, 1997). Therefore, the combination of higher voting participation of being in a union and also working in the public sector can represent a significant voting influence over elected officials. This influence can encompass local, state and federal politicians. It is the local politician who ultimately enacts the tax structure to balance budgets for agreed-upon union contracts. It is the state politician who can define laws regarding right-to-work status, abilities for law enforcement unions to exist and the manner in which impasse resolutions are resolved. It is the federal politician who can set national labor relation policies in defining agency shops, compensation, benefit and workplace environment laws. As recently as
In 2007, two federal legislative acts were proposed that were designed to remove the right-to-work state determination in favor of a national standard (Employee Free Choice Act) and favor a national standard for unionization of state and local public safety personnel (Public Safety Employer-Employee Cooperation Act). There does not appear to be any formal research conducted in the formulation of these bills in regards to HPO correlations associated with the passage of such bills. For the Employee Free Choice Act (HR800), its purpose was to “amend the National Labor Relations Act to establish an efficient system to enable employees to form, join, or assist labor unions, to provide for mandatory injunctions for unfair labor practices during organizing efforts, and for other purposes” (HR800, 2007, p. 1). For the Public Safety Employer-Employee Cooperation Act (HR980), its purpose was to enable public safety employees, including all employees of local government law enforcement organizations, “the right to join a union and have the union recognized by the employer; the right of public safety officers to bargain over wages, hours, and working conditions; a dispute resolution mechanism (e.g., fact finding or mediation); and enforcement of contracts through state courts” (HR980, 2007, p. 1).

Both of these bills failed to get passed as Democrats generally supported passage and Republicans generally supported rejection of the bills. There are also numerous advocacy groups that were for and against such legislation; even some
advocacy groups who may be on different sides of certain issues that were united for this issue. As with many federal legislative processes, even though these bills were defeated or tabled, that does not mean that the motivation to reintroduce them has diminished. Even if successfully passed, these new federal legislative mandates may seek legal challenges from states as their “state’s rights” will become further diminished and may not be resolved until a Supreme Court decision. The interesting facet of federal versus states’ rights, employer versus employee rights and local law enforcement organization employee versus employer rights provides for continued advocacies, alliances and to the layperson, sometimes confusion. Through this research, it is hoped that fact-based information can better help illustrate, at least, the roles of collective bargaining to high performance.

**High Performance Organizations (HPO)**

**HPO - Background**

HPOs are defined in many ways, but generally address the ability of the organization to leverage its collective resources to achieve the highest production value of products and services produced. Continuous improvement in four critical areas is also indicative of a HPO: “1) Quality of goods and services; 2) Cost of producing goods and services; 3) Speed at which products and services are brought to the market; and 4) Innovation in the development of new products and services” (Lawler, 2012, p. 3).
These preceding critical areas are also subject to continuous improvement as the organization “must know what one wants to create, so one must continually reflect on their sense of purpose/vision and, second, one must continually develop the capability to move in that direction” (Wooldridge, 2007, p. 44).

The challenge is that there is no universal manner in which continuous improvement practices can be developed and deployed to attain the four preceding goals. In fact, because of the competitive nature of businesses, the ability for a business to creatively distinguish itself from another provides it the necessary competitive edge to stay HPO. This inherent and continuing challenge positions management in “a continuing search for independence in the pursuit of professional objectives, a quest which managers do not always view in sympathetic terms” (Maddox, 1975, p. 25).

The measures of performance should not just focus on the “production of certain tangible units of output, but also on less tangible outputs; like effectively supervising others, thinking in a creative way, inventing a new product, resolving conflicts between others, or selling a good or service” (Steers, 1984, p. 179). Key factors, in addition to motivation, for performance to flourish include: 1) Abilities and traits; 2) Role clarity and acceptance; and 3) Opportunity to perform (Porter and Lawler, 1968; Campbell and Pritchard, 1976). HPO traits are more evident when higher standards exist for employee knowledge, skill and abilities; understanding of what their job function is required to perform; and the opportunity to attain performance goals. It is through these manners
that maximizing utility (a Rational Choice Theory trait) and HPO are linked as part of a process and pathway towards and continuum of HPO.

A key trait of HPO is quality of work life and the workplace should be designed to meet needs for human achievement, continuous learning and stimulation of minds, mutually supportive relationships with others, and sense that contributions are being made to society (Rosen, 1993). It is from the framework of a quality of work life that worker productivity can be positioned to occur through a properly designed rewards system as “productivity improvement and human satisfaction are directly related” (Rosen, 1993, p. 155). While HPOs and the traits previously noted appear to cater to private sector entities, “public organizations must become as competitive as the private sector, rapidly handle clients’ requests and respond to them, attentively manage the resources that are available to them, while at the same time, obtaining significant value added for the clients” (Charih, Bourgault, Maltais, and Rouillard, 2007, p. 31). It is these and similar HPO traits that initially may have arisen via a privatization movement which has raised the expectation for HPO standards in the public sector (Wooldridge, Amagoh and Menefee, 2002).

As outlined by Wendell L. French and Cecil H. Bell (1973), the HPO development program has eight major foundations: 1) On-going, interactive process (always needing to learn new skills); 2) Form of applied behavioral science (enables logical and effective decisions); 3) Reductive strategy of change (rational changes that develops reasoning skills); 4) Systems-based (relationship of one event to others); 5) Day-to-day approach to planned change (timely evaluation of data required); 6) Experienced-based
(knowledge is gained from learning experiences); 7) Goal setting and planning (compare against measurable and attainable goals); and 8) Focus on work teams (beliefs and experiences from many levels).

As illustrated in Figure 2.5: Effective Decisions from Donald Lynch (1986), the ability to achieve effective decisions in an HPO environment clearly shows that the effectiveness of the decision is best correlated to a consensus-based approach with the individual decision being the least effective (in Figure 2.5, a “6” is the highest score of decision making whereas a “0” is the lowest score; with the line representing the “adequacy curve”). For the consensus decision-making approach, ideally all members share equally in the final decision and interaction amongst members is “encouraged, accepted and utilized” (Lynch, 1986, p. 218).

Figure 2.5: Effective Decisions
The motivational aspects of the employee from the managers perspective had changed little between 1946 to 1995 (Kovach, 1995), yet the variance between what these managers believed and what the actual employees wanted continued to differ considerably (Jurkiewicz and Massey, 1996). This inability of managers to recognize the needs and desires of their subordinates creates this trust division between manager and worker and contributes to the challenge in becoming a HPO and the underlying distrust that fosters further divisions between unions and management.

HPO and Collective Bargaining

Previous research has indicated “no significant relationship to organizational structure and incentives structure and the level of organizational performance” (Xu, 2008). This organizational structure relationship can also be further defined to note collective bargaining aspects of the structure. For purposes of defining the union structure, there are four traits of a powerful union: 1) Organizational power (sole purpose is to achieve union goals); 2) Political action (it is the source of strength in mastering the “power game”); 3) Media involvement (a “use it or it will use you” challenge); and 4) Confrontation (tool to maintain respect between union, management and elected officials) (DeLord, Burpo, Shannon, and Spearing, 2008, p. 9). In absence of a powerful union structure, the preceding four traits are not necessarily the manner in which the individual seeks out to maximize utility as each individual may approach such roles and advocacies with their employer differently.
Other attributes that may impact HPO traits with correlations to collective bargaining, include, but are not limited to: 1) Additional dynamics that may arise from political power that unions can foster through lobbying and consensus-based leverage (e.g., non-workplace advocacies on behalf of the employee); and 2) Quality of life attributes from the employee’s perspective. For each of these attributes, further scope, including employee and employer surveys, would be required to effectively gauge the impact of such attributes. If such attributes lead to better employee performance, not just a desire for the employee to perform better, then the correlation of these and other attributes would be considered to positively influence an organization towards a HPO. Likewise, if employee performance is not enhanced or even decreased, then these attributes would not be considered in an HPO-seeking environment.

Donna Baines (2010) focus on “social unionism” as an intrinsic factor identified three “power resources” that serve as union strength: 1) Proactivity (capacity to form an independent agenda); 2) Internal solidarity (internal mechanisms for democratic and cohesive actions); and 3) External solidarity (community activity with horizontal-vertical ties within their union and other unions). However, while such power resources were identified, non-unionized comparative “power resources” were not identified nor addressed to determine what similarities or contrasts may exist between union and non-unionized workplaces. There does appear to be a correlation in the ability for the worker to feel empowered and providing a service to a client that can correlate to their vested interest in their job. This correlation of vested interest can also enable HPO traits to emerge more readily and sustainably.
Union contracts can have macro statements regarding performance or productivity which represent attempts to address HPO desires. A union contract example would be the following statement regarding delivery of services - in the “most efficient, effective and courteous manner is of paramount importance” and that this is “recognized to be a mutual obligation of both parties within their respective roles” (Zagoria, 1973, p. 16). In a separate study of collective bargaining of private sector call centers, unionized call centers and in-house call centers (compared to outsourced) were associated with significantly higher measures of job quality (Doellgast, Holtgrewe and Deery, 2009). High job quality is a factor in an environment of HPO success, but as noted previously, just having a high job quality environment alone does not guarantee employee higher performance.

A motivational aspect that may enable workers to perform at a higher ability may be the worker’s ability to advocate on behalf of their vested interests (e.g., client, themselves). Baines (2010) compared and contrasted the experiences of Canadian and Australian social services workers; both unionized workplaces. While both sets of workers benefited from leveraging their vested interest in their service area to advocate for the service, budget constraints in Canada mitigated the time available for advocacy. As the budget constraints mounted, social workers became isolated and worked in solitude; often performing redundant and bureaucratic tasks. This lack of time for community involvement and empowering clients outside of the workplace “pushing paper” led employees to feel less able to help advocate for their clients. A law enforcement employee’s solitude shift or constant negative interactions with potential
lawbreakers can also lead to constraints in positive interactions. HPO law enforcement organizations may be able to overcome such constraints through positive interactions whereby the law enforcement officer can meet with good citizens and businesses as part of their shift (e.g., “park, walk and talk” programs with neighborhoods and businesses).

In another study about union workers and high performance traits, Kim and Bae (2005) examined two different Korean companies to determine if there was a correlation between being unionized and innovation. Innovation is another HPO trait that is always encouraged and further developed in a HPO. It was evident that for union workplaces that embraced the innovative change proposed, that such performance outcomes were better, but when the union did not embrace such change, then outcomes were less. Two separate approaches for unions and non-union workplaces arose: “Lean production’s” more centralized approach preferred by non-union workplaces and “team production’s” more decentralized approach preferred by union workplaces. As both entities yielded success from two different approaches in implementing change, it appears that good organizational design practices would adapt to the better approach relative to the type of workers in order to succeed. This is an example that a HPO pathway may not be through one absolute path as different workers positively respond, via higher performance, to different approaches in how to achieve innovation goals.
HPO and the Public Sector

The measures and metrics of HPOs in the public sector rightfully are different than those in the private sector for many, but not all facets, of HPOs. The primary differentials may pertain to measures of profitability and defining the customer. However, from an employee workplace perspective, an HPO should strive to provide the most conducive environment to enable its workers to perform at their best and motivated to perform on behalf of the locality or company; while also primarily motivated by their self-interest. An example of a simple HPO-type measure for both private and public sectors is the employee turnover rate. As the time and investment put forth in recruiting, selecting and training an employee is significant, the retention of these trained employees enables the organization to be more effective and efficient. However, that does not mean that all employees once hired need to be retained for their entire careers. While low turnover is a HPO trait, a HPO should also have some manner in which lower performing employees are dismissed.

For law enforcement organizations, large organizations retain employees longer than smaller organizations (Koper, Maguire and Moore, 2001) and larger organizations also tend to be more associated with collective bargaining (Valletta, 1989). Collective bargaining’s “strong voice” to an employee is considered a primary factor for lower turnover rates than non-collective bargaining law enforcement organizations (Rees, 1991, p. 31). However, even such statistics on their surface may not represent underlying issues associated with employee turnover that should be vetted further. For
example, this would include analysis to determine if mobility issues make it harder to leave one unionized employer for another or whether promotional rewards are greater and apparent for a unionized employer based primarily upon tenure (and not performance) compared to a non-unionized employer.

Continued focus on organizational development is an integral component of HPO. One goal of organizational development is to create an “open, problem-solving climate” throughout the law enforcement organization (Lynch, 1986, p. 209). This process “decides specifically what objectives are to be reached in the upcoming few years, how these objectives are to be reached and how the resultant changes will be evaluated, in terms of overall departmental effectiveness” (Lynch, 1986, p. 209). Constraints to starting organizational design include abilities of key staff, the values of the organization and community; and any legal restrictions. Law enforcement chiefs also may not have to just overcome creating an environment of trust within its organization to proceed, but also need to get approval from those in the hierarchy of its local government (e.g., other non-law enforcement organizations, chief administrative officer, local governing body).

Employee and employer management relations focused herein have primarily centered on employee compensation, benefits and work environment. As a few measures are focused on highly, other measures (e.g., equity and accountability) are less focused upon (ICMA, 1991). As an example, a HPO does not just convene employee committees for employee negotiations, but rather formally establishes such
committees, and empowers them to be a partner in addressing other organizational matters. This performance improvement strategy of using labor-management committees that are usually standing committees when not consumed with their collective bargaining issues, can leverage their time and talent into performance enhancements (e.g., review of policies, creation of new policies). This type of engagement can be “very successful and provide a wealth of new ideas and a great spirit of cooperation” (Salerno, 1981, p. 44). However a challenge exists as many law enforcement organizations utilize “minority control” where a few leaders traditionally make the decision or the “majority vote” as both of these may be easier (less time) than the efforts needed to reach consensus (Lynch, 1986, p. 218). A HPO needs to carefully assess when such easier practices are prudent for the organization and when more deliberative and employee-engaged practices are more prudent.

**HPO and Law Enforcement - Background**

Having an appreciation for the historical environment that has given rise to the motivations of the law enforcement union worker may help frame the motivations for performance and employer-employee perceptions of workplace environment, compensation and benefits. The word “police” was correlated with corruption or the imposition of the ruling regime in Europe through 1748, when Henry Fielding was appointed to magistrate role in London. Fielding began to publish pamphlets on the effectiveness of “parochial” law enforcement forces in better providing justice through
reliable information to judges, constables and the general public (More, 1979, p. 3). The next evolution of effectiveness was also in England in 1829 through Robert Peel’s “an Act for Improving Police in and Near the Metropolis” which was in response to the apprehension many citizens had on the ability of local law enforcement to protect their life and property (Lyman, 1955, p. 53). Robert Peel's officers were affectionately known as “bobbies” (nickname for Robert); a term still used today (ICMA, 1991).

In the United States, Lawrence Fuld is credited in 1909 with outlining traits of an effective law enforcement organization and its officers who “need to live up to a higher code of conduct and morality than that demanded from other citizens” and the most important duty was “knowledge” (Fuld, 1909, p. 112). In 1915, Raymond Fosdick performed a study of law enforcement organizations in seventy-two cities and determined that the higher performing law enforcement organizations had fulfilled three conditions: “1) Relationship between supervision and work was well-balanced; 2) Different parts of the mechanism must be adjusted to each other; and 3) Whole machine must be adapted to its task” (Fosdick, 1969, p. 382). In 1921, Elmer Graper recognized that law enforcement organizations perform better when their officers were organized into divisions accounting to the special kinds of law enforcement services they perform (e.g., detective, patrol) and were properly distributed throughout the city (Graper, 1921). O.W. Wilson’s Police Administration book in 1950 is considered a “monumental work” by Harry More (1979, p. 27) and frames high performing objectives of the law enforcement organization, including: 1) “Each assignment of responsibility carries with it commensurate authority to fulfill the responsibility”; and 2) “No more units
or persons are placed under the direct control" of one person than they are able to
manage (Wilson, 1950, p. 9).

There were not only individuals committed to helping make law enforcement
organizations higher performing, but also organizations; such as International City
(County) Management Association (ICMA). Their first book on law enforcement
management was in 1938 and subsequent editions have periodically been done ever
since. The law enforcement organization was defined as “the grouping of related tasks
to assure more effective accomplishment, and the establishment of clear-cut channels
of communication, authority and responsibility” (ICMA, 1943, p. 69).

HPO and Law Enforcement

HPO traits of law enforcement include performance measurement techniques.
Performance criteria generally are segmented into the following measures:
“Effectiveness, efficiency, equity and accountability” (ICMA, 1991, p. 380). As an
example, performance measurement enables the law enforcement organization to
establish law enforcement capacity to accomplish a given objective and monitor
objectives previously defined (ICMA, 1991). “Performance measures can measure the
output produced by the organization or the outcomes created in the community which
results from organizational output” (Wooldridge, 2007, p. 47). A HPO-type performance
measurement strategy can position the law enforcement organization to be proactive in
deal with issues as they arise, rather than reactive strategies hurriedly put together to appease politicians or the public.

A law enforcement organization evolves from being a “reactive component into a proactive component by sensing and accommodating change” (More, 1979, p. 222). A key trait of HPOs is in their ability to have an environment that accepts change; especially as it pertains to the ability to continuous improvement. In order to create or further maintain such an environment, management “must accentuate to a maximum degree” the following attributes: 1) In-depth delegation; 2) Maximize participation in objective setting and planning processes; 3) Managers are permitted to make some mistakes; 4) Change is encouraged and planned; 5) Minimal policies and procedures, and updated when necessary; 6) Minimum, but strong controls imposed; 7) Meaningful reward experiences; and 8) High degree of “self-management, self-discipline and self-control from managers” (More, 1979, p. 228).

There are many manners in how objectives for HPO-related traits can exist amongst law enforcement organizations. The following are some examples and their source:

- Law enforcement patrol objectives: 1) Crime deterrence; 2) Apprehension of criminal offenders (clearance rate); 3) Citizen satisfaction; 4) Recovery of stolen property; and 5) Provide community with sense of security (National Commission on Productivity, 1973)
Highly effective law enforcement organization goals: “1) Requests from the public are to receive the most immediate possible response; 2) All law enforcement officers are to do their utmost always to be courteous; and 3) Law is to be justly enforced” (Lynch, 1986, p. 230).

Law enforcement goal attainment strategies (with officers committed to their work): 1) “Bias of law enforcement chief towards some form of action” (willing to take risks); 2) Simple organizational structure (focused on front-line staff who can make decisions); 3) Oriented towards productivity and such productivity depends on employee improvement; and 4) “Emphasis is on a few key goals and not burdensome with too many rules and regulations that causes big picture to be lost” (Lynch, 1986, p. 230).

As noted previously, clearance rate is regarded as a performance standard and there can be an assumption that investment in the resources via budgets can be a contributing factor in having a higher clearance rate. However, Xu’s study of organizational performance (as measured through clearance rate) and variables such as spending, human resource strategy and application of technology did not have a strong correlation (Xu, 2008). However, this study also recognized challenges in the variability in how information was compiled between comparative localities. This study may also recognize that there are contributing factors in any law enforcement organization that may result in a high cost commitment for which clearance results may
not be correlated (e.g., other law enforcement programs (deterrence), higher levels of patrol).

The Kansas City Preventive Patrol Experiment in 1975 was designed to see what correlations existed between preventive patrol (the general patrolling of a law enforcement officer not on a call for service) increases and citizen perception of law enforcement presence or personal safety, or reported crimes (Kelling, 1975). Although against the traditional mindset and even intuitive perception that there should be a positive correlation, the Kansas City study found that there was little or no effect. This study is still highly discussed and debated as it was bold in ascertaining that a law enforcement organization’s resources could be better deployed to non-patrol programs and efforts. Perhaps the challenge is that many law enforcement organizations have a “social broad goal that focuses on crime deterrence”; but the challenge is this social broad goal is not readily observable simply by watching law enforcement officers as they go about their duties (ICMA, 1991, p. 378).

Another study with deterrence as a theme is commonly referred to as “broken windows” which illustrated the correlation of mitigation practices of abandoned or state of disrepair homes and businesses and the perception of citizens of how safe they feel (Wilson and Kelling, 1982). As was determined in the study regarding “broken windows”-type neighborhoods: 1) Primary source of citizen fear; 2) Sense that nobody cares, which can lead to more series disorders of crime; and 3) Reducing this disorder
needs to have the law enforcement organization, and their local government, leverage the resources of the citizens for both legitimacy and assistance.

It appears that a HPO law enforcement organization cannot be achieved if criminal activity is higher than any tolerated threshold with consideration to socio-economic factors of the locality. “For all of its problems, crime is still one of the few measures” that law enforcement managers have to “provide some check – however general and unreliable – on their activities” (More, 1979, p. 337). The crime rate and the trend fluctuations of the crime rate often involves much media attention, anecdotes and analysis as to the cause in the change - good or bad – in measuring law enforcement effectiveness. However, it has recently become popular to measure law enforcement effectiveness by focusing on “victimization data and citizens’ satisfaction with law enforcement service” (ICMA, 1991, p. 381). The accounts from the victim's perspective and the community at-large on how well law enforcement is performing in a variety of manners may help better frame the strengths and weaknesses of the law enforcement organization for which the community may want further action plans initiated in reducing any weaknesses.

How law enforcement organization leaders react to these perceptions can also be a factor towards HPO attainment. On one end of the scale is ignorance, which is not a HPO trait and on the other end of the scale would be strategic action plans developed, monitored and adjusted to focus attention towards a defined problem with metrics established to determine success. Determining what these specific areas needing
attention or the metrics gathered in determining how well the law enforcement organization is performing is a skill that the law enforcement organization and the locality’s leaders need to work on together; with applicable input from employees, citizens and businesses. “In the absence of scientific validation of the vast majority of departmental performance measures, the fact remains that law enforcement administrators are paid to exercise their best judgment on enormously complex topics, and they will necessarily have to decide whether and how to use imperfect measures currently available” (ICMA, 1991, p. 383).

Having an organizational culture that is recognized by the community, leaders and media as being effective is another HPO trait. This culture can be the “informal rules and regulations or the policies that may not be outlined” which in many cases provides for the flexibility and adaption of the law enforcement officer and their organization to evolve, grow and be responsive to their community (Lynch, 1986, p. 211). The positively viewed status of the law enforcement organization enables the HPO to continue and the potential HPO to gravitate towards becoming a HPO. This status of the internal operations can be varied and can include such topics: 1) Are younger or older law enforcement offices viewed differently?; or 2) Are college educational achievements viewed differently?

Utilizing the resources of a national accreditation agency can assist these leaders in performing an environmental scan throughout their organization. CALEA accreditation standards are not an “assessment in how well a local law enforcement
organization has controlled crime or disorder, but rather how the organization has complied with guidelines that CALEA believes are associated with “good administrative practices” and “if these practices produce better performance, the law enforcement leader may claim that their organization is a higher performer as a result of such practices” (ICMA, 1991, p. 391). Because CALEA is a respected accreditation organization and utilizes a stringent process in developing standards and having independent assessors from outside the state of the locality asking for the review, the earning of such accreditation is deemed to be a component of HPO. For those who seek accreditation, but fail to earn it, then implementing the CALEA recommendations in a timely manner can be associated with HPO pursuit. In leveraging CALEA-type standards into an operational mode, the productivity of law enforcement can be increased through: “1) Improving current policies and practices to the highest level; 2) Allocating resources most efficiently to the varied law enforcement services; 3) Increasing the probability of goal accomplishment; and 4) Leveraging the workforce talents to their full potential” (More, 1979, p. 326). All of the previous measures and attributes for the HPO need to also be done in a continuous improvement environment, and in the most efficient manner, in order for HPO attainment and continuum of HPO status.
**Costs of Services and Operations**

The cost of services and operations for law enforcement are often highly debated during a locality’s budget process with expectations on high correlations of service performance to costs. Compensation and benefits is also the highest portion of an organization’s budget; therefore inclusion of this cost measure is warranted as a dependent variable. Compensation is the set of rewards that organizations provide to individuals in return for their willingness to perform various jobs and tasks within the organization (DeNisi and Griffin, 2001). Prior studies have indicated that local government union employees are paid 32% more than non-union local government employees (Department of Labor, 2004). However, even costs can have conflicting results as illustrated by the following statistics from the Bureau of Labor Statistics (DiSalvo, 2010):

- Average annual salary for the roughly 330,000 office clerks who work in the public sector was almost $27,000 in 2005, while the 2.7 million in the private sector received an average pay of just under $23,000. Nationwide, among the 108,000 janitors who work in the public sector, the average salary was $23,700; the average salary of the 2.0 million janitors working in the private sector, meanwhile, was $19,800.

- Private-sector economists earn an average of $99,000 a year, compared to the $69,000 earned by their government colleagues. Accountants in the private
sector world earn average annual salaries of $52,000, compared to $48,000 for their public sector counterparts.

Public Sector

As HPOs rely upon measures, constrained public sector budgets must rely on decreasing workload resources and productivity measures to meet budgets (Hatry, 1972); with these measures primarily focused upon efficiency and effectiveness measures. If there is a correlation to having a higher wage and also having the ability to join a union, then through the “selectivity argument” of both employer and union in the hiring process, then the “more able” workers should be selected (Garonna, Mori and Tedeschi, 1992, p. 106). Labor costs are generally the highest component of local government departmental budgets; therefore, the ability to get a high performance return on costs of such costs needs to be achieved at any level of investment. The higher the investment, the greater expectation should then exist in having a higher return. Conversely, if the labor costs are lower, then those same correlated reasonable expectations should be modified for a proportionately lower return.

There are many resources which address the inherent overhead costs of public sector unions, for which law enforcement unions emulate such overhead practices. Examples primarily include the additional time of resources spent on collective bargaining agreements between not just union and management representatives, but also to the union members in educating them and soliciting votes on union agreement
proposals. There are also studies that illustrate that unionized workplaces have higher hourly wage rates and benefit advantages (e.g., healthcare and retirement) over non-unionized comparable positions. For example, the Economic Policy Institute notes that unionized wages are 20% higher and increase to 28% higher when benefits are factored into total compensation (Mishel and Walters, 2003).

From a public sector standpoint, these differentials may even be higher as private sector workplace costs have an inherent ceiling in order for the employer to remain competitive in the marketplace. With the monopolistic perspectives of the public sector, the inherent ceiling is not as evident; which can give rise to even a higher differential. However, the public sector through its citizens does have a certain tolerance for what may be a maximum tax burden ceiling for which good elected officials are keenly aware. Mobility may enable some, not all, to move their household or businesses to less taxed areas and if not, then advocacy roles for lower taxes may be greater.

From analysis of ballot measures in California and Oregon, economist Richard Freeman notes public sector unions use their political power to increase public sector service demand and their bargaining power to lobby for increased compensation (DiSalvo, 2010). These market forces on demand, and its correlated supply, are not attributes as evident in the private sector; therefore, if additive costs exist for public sector unions, other tangible benefits and measures of performance would need to be correlated to such added costs. If additional costs can yield higher performance, then it would be appropriate to best gauge the high performance return on costs and the
incremental marginal utility rewards. From an economic perspective, there will be a point at which such marginal utility is diminished to the point that such additional cost investment does not provide a higher performance return on such investment. From a public sector perspective, this point may be debated as there can be more subjective determinants as to public sector “return” as compared to more industry standard definitions for private sector “return.” As Figure 2.6: Marginal Utility Graph illustrates, the increasing utility return of “x” decreases as the quantity of “x” increases and there will actually be a point that any further addition of “x” does not result in any further additional utility.

Figure 2.6: Marginal Utility Graph
Law Enforcement

Compensation and benefits of the union worker are better in many traditional measures: 1) 20% higher wages; 2) Greater opportunity for paid leave; 3) Over 18% more likely to have employer-provided health insurance; and 4) “Over 23% more likely to have employer-provided pension plans with employer providing over 28% more funding” (Wagner, 2008, p. 49). Laurence Putchinisky’s (2007) study of 257 Florida cities provided evidence that unions do influence law enforcement expenditures and “influence these expenditures to a substantial degree” (Putchinisky, 2007, p. 223). However, since Florida is a right-to-work state (more employer-favored) and through its state statutes enables law enforcement unions to exist with any impasse in negotiations via mediation (employer-favored approach in agreements), additional influential attributes of law enforcement may be present.

As noted previously, there is a clear distinction between a union that has collective bargaining abilities and “unions” in many right-to-work states that may have an association or volunteer-based group that may call itself a union. Putchinisky recognized the “union voice” ability of the worker in having influence over the employer and extrapolated that if such voice was effective in a right-to-work state, then it could be easily assumed that such “union voice” would be even more effective in a state where collective bargaining was a granted state right to all employees within a state (Putchinisky, 2007, p. 225). Even with such empowerment capabilities availed to certain law enforcement officers and correlations to higher compensation and benefits as a
result of union representation, survey results of law enforcement officer employees did not have economic factors high on their list of job concerns. The highest rated job concern factor of these employees was “job security, job protection, citizen apathy and prestige” (Maddox, 1975, p. 24).

In another study of compensation and law enforcement unions, Richard Victor (1977) determined the differential to be that union law enforcement officers and firefighters were paid 8 – 12% over their non-union counterparts. However, a determining factor in this study was not just the effect of the firefighter’s union in being able to leverage additional compensation and benefit packages because of the law enforcement unions contract (5% impact), but rather the effect of any other “key bargains” leveraged by the law enforcement unions and its “spillover effect” towards the firefighters (12% impact). This illustrates a recurring challenge for local government - as any increased or perceived increase in benefits of one class of employees in a newly agreed-upon collective bargaining agreement become the benchmark for another class of employees that is beginning its collective bargaining process. This issue is further extrapolated when the first group of employees in their new contract has pent-up increased demands when the second group of employees finishes their contract with results equal to or exceeding the first group’s contract. Victor also notes “union power is a function of the wage elasticity of demand for labor of the unionized group – more inelastic demand is associated with more powerful unions” (Victor, 1977, p. 39). This recognizes the many other inherent characters or traits that a powerful union has in its
ability to recruit and retain fellow union members in addition to traditionally viewed positive traits of increased wages.

This inelasticity can be better illustrated in Figure 2.7: Elasticity Comparisons for Law Enforcement Employees. In the figure 1 diagram a perfectly elastic demand is illustrated whereby the price (Pe) can represent wages paid to law enforcement officers and it has an inherent ceiling regardless of the quantity of law enforcement officers supplied. Above Pe there is no demand and while there may be demand for wages below Pe, because market wages are being sought by all law enforcement officers, there would be nobody willing to be employed for a lower wage. In contrast, in the figure 2 diagram a perfectly inelastic demand is illustrated whereby the demand (Qi) is not subject to any price threshold. From a law enforcement officer perspective, a perfectly inelastic demand would have their wages continually increase and only subject to the constraint of the demand for law enforcement officers. As both of these illustrations are absolute representations of perfect elastic and perfect inelastic demand, they are not generally representative of a law enforcement’s demand for wages. However, as noted in the preceding paragraph regarding Victor’s study, those in unions are more associated with inelastic demand.
In a cross-sectional study of costs (Feuille and Delaney, 1985), law enforcement organizations were classified into one of the following four categories: 1) Non-bargaining cities; 2) Collective bargaining cities without a mandate to bargain; 3) Collective bargaining cities with a legislative mandate to bargain but no arbitration availability; and 4) Collective bargaining with legislative mandate to bargain and access to arbitration. The results of this study indicated those organizations with legislative mandated collective bargaining practices resulted in significant influences on human and financial resource allocations and a 7.5% differential than non-bargaining cities. It appears that the further collective bargaining is recognized by the state for public sector workers and especially for law enforcement workers, an identified benefit accrues to the worker in higher compensation and benefits.

Additional salary benefits were also noted by Zhao and Lovrich (1997) for large law enforcement organizations that have collective bargaining and by cities with
collective bargaining in a study by Zax (1988). While Putchinisky's study analyzed personnel, operating and capital costs separately and together with personnel and operating costs higher for collective bargaining organizations, capital costs did not have any higher or lower correlated effect (Putchinisky, 2007). However, because capital costs may fluctuate from year-to-year with varying degrees of vehicle purchases, the effects of this variability was not part of the scope of such research. There are many other studies regarding correlations of collective bargaining and its influence on compensation and benefits; with some of these studies also focused upon law enforcement organizations. In an illustration on how these studies were designed, sample selection process, methodologies and results, Table 2.1: Studies, Scope and Results for Law Enforcement Unions highlights two studies as they pertain to law enforcement collective bargaining and costs (Putchinisky, 2008).
Table 2.1: Studies, Scope and Results for Law Enforcement Unions

<table>
<thead>
<tr>
<th>Author/Year</th>
<th>Study</th>
<th>Sample</th>
<th>Sample Date</th>
<th>Methodology</th>
<th>Results</th>
</tr>
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<tbody>
<tr>
<td>Zhao and Lovrich</td>
<td>Collective bargaining effect on supplemental compensation</td>
<td>Law Enforcement Management and Administrative Statistics Report (LEMAS): 2945 law enforcement organizations</td>
<td>1990</td>
<td>Logistic regression analysis</td>
<td>Existence of a collective bargaining mechanism in large law enforcement organizations is significantly correlated with the presence of supplemental pay benefits favorable to officers</td>
</tr>
<tr>
<td>Gely and Chandler</td>
<td>Impact of law enforcement and firefighter unions on departmental expenditures</td>
<td>Law enforcement and fire departments in 614 cities &gt; 25,000 population</td>
<td>1981 and 1986</td>
<td>Ordinary least squares regression</td>
<td>Presence of a collective bargaining agreement increases the overall level of departmental expenditures by 19%</td>
</tr>
</tbody>
</table>

**Hypotheses**

Based upon the environmental scan and theory development in this chapter, developing appropriate data to help measure is imperative in determining costs and high performance traits. Based upon the problem statement and research question, and related literature review, the following hypotheses were derived:
• Law Enforcement Performance Hypotheses (1)
  o Hypothesis 1A: Positive relationship between law enforcement workforce classification of arbitration and higher performance attributes when compared to non-collective bargaining
  o Hypothesis 1B: Positive relationship between law enforcement workforce classification of mediation and higher performance attributes when compared to non-collective bargaining

• Law Enforcement Cost Hypotheses (2)
  o Hypothesis 2A: Positive relationship between law enforcement workforce classification of arbitration and higher costs when compared to non-collective bargaining
  o Hypothesis 2B: Positive relationship between law enforcement workforce classification of mediation and higher costs when compared to non-collective bargaining

• Law Enforcement Higher Performance Return on Costs Hypotheses (3)
  o Hypothesis 3A: Positive relationship between law enforcement workforce classification of arbitration and higher performance return on costs composite measure when compared to non-collective bargaining
  o Hypothesis 3B: Positive relationship between law enforcement workforce classification of mediation and higher performance return on costs composite measure when compared to non-collective bargaining

For each of the hypothesis, the independent variable is defined as collective bargaining. The “collective bargaining” attribute refers to the manner in which the workforce can leverage the employer and ranges from non-collective bargaining to collective bargaining’s mediation and mandatory arbitration processes. The collective bargaining distinction is through impasse resolution practices whereby mandatory arbitration generally favors the employee more than mediation. In Chapter 3 – Research Design and Methodology additional information will be presented to segment collective bargaining localities into these two classifications regarding how impasse resolution is approached.
For purposes of testing the hypothesis, collective bargaining for law enforcement services and its related workforce classification factor for employees (mediation or mandatory arbitration) would be defining whether a locality has collective bargaining for its law enforcement workforce. The high performance return on costs (HPRC) composite measure attribute attempts to compare high performance traits to the correlating costs that contributed to such high performance traits. HPRC is a performance measure used to evaluate the efficiency and effectiveness of taxpayers’ costs for law enforcement. It is similar to the private sector’s return on investment (ROI) which measures the efficiency of an investment or to compare the efficiency of one investment amongst other choices (Money-zine, 2012). The ROI formula can be generically expressed as ROI = (change from investment – cost of investment)/cost of investment, but can also be modified for this research as HPRC = high performance law enforcement attributes/law enforcement costs. Because performance attributes can be of varying measures, a rationale and systematic process is needed to convert such measures into comparative quantitative factors in order for such HPRC calculation to occur. Refer to Chapter 3 – Research Design and Methodology for further information on how the HPRC is calculated.

In order to gauge correlations between costs and performance which may have elements of time lapse effects of a change in variable, collective bargaining traits would need to be present for a defined time period prior to the measurement of performance and costs. For this research, that time period is defined as five years (i.e., only those local governments with law enforcement organization collective bargaining (with
impasse resolution through mediation or mandatory arbitration) for greater than five years are subject to the sample for collective bargaining and those non-collective bargaining localities would not have had any collective bargaining agreements also during that same period of time).

The following helps illustrate how each of the hypotheses will respond to each of the variables:

- **Workforce Classification:**
  - Hypotheses 1: As workforce classification is the independent variable, the proper definition of type of employee workforce will be defined and also assigned to each of the sample localities. Through statistical research, the dependent variable of a composite performance index will be analyzed as it pertains to employee workforce classification.
  - Hypotheses 2: As workforce classification is the independent variable, the proper definition of type of employee workforce will be defined and assigned to each of the sample localities. Through statistical research, the dependent variable of cost will be analyzed as it pertains to employee workforce classification.
  - Hypotheses 3: This hypothesis gauges the relationship between dependent variables of performance and cost to determine what high performance return on cost composite measure exists amongst the workforce classifications assigned.
• Performance:
  o Hypotheses 1: Performance attributes will be defined and through statistical research, the composite performance index will be noted for each sample locality.
  o Hypotheses 2: Not applicable as performance attributes are not a dependent variable or subject to other analytical tests as part of these hypotheses.
  o Hypotheses 3: These hypotheses gauge the high performance return on costs composite measure between dependent variables of performance attributes and cost to determine what differentiation exists amongst the classifications of employee workforce.

• Costs:
  o Hypotheses 1: Not applicable as cost attributes are not a dependent variable or subject to other analytical tests as part of these hypotheses.
  o Hypotheses 2: Cost attributes will be defined and through statistical research, cost attributes will be noted for each sample locality.
  o Hypotheses 3: These hypotheses gauge the high performance return on costs composite measure between dependent variables of performance and cost to determine what differentiation exists amongst the classifications of employee workforce.
CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

Research Goal

Through the restatement of the research question and how each hypothesis will be tested, the following research goal is anticipated to be accomplished: To be able to determine if the hypotheses statements, upon testing, can help better answer or refine the research question and attempt to provide credible research in furthering the knowledge in regards to the problem. The relationship of the research question to Chapter 2 - Review of the Literature represents the relationship of workforce classification and its service cost to high performance with the scope limited to local government law enforcement services. The ability to best control for these variables is accomplished by focusing on certain tools from authoritative sources that can mitigate any externality.

Problem Statement and Research Question

As noted in Chapter 1 - Introduction, the problem statement and research question were initially formulated and subjected to further review and analysis in Chapter 2 - Review of the Literature. Based upon this further review and analysis, no alternations to either the problem statement or research question are proposed. The problem statement and research question are therefore repeated as follows:
- **Problem Statement:** Local government law enforcement collective bargaining practices appear to create advocacy groups in support and against such practices; however, these emotional debates seem to focus on just salary and benefit costs and not on any high performance law enforcement organization factors; especially when total law enforcement costs and demographic factors are considered in determining high performance return on costs.

- **Research Question:** Is there a relationship between a local government law enforcement collective bargaining or non-collective bargaining workforce and a high performance law enforcement organization when cost and demographic factors are considered in determining high performance return on costs?

**Linking of Hypothesis to Rational Choice Theory**

From the general observations of Rational Choice Theory, the hypotheses developed from Rational Choice Theory tenets helps frame the analysis approach. With the hypothesis, the likely relationship between two or more phenomena or key variables together with empirical indicators, may enable tests to be conducted, and where necessary, refuted. In addition, through propositions or sets of propositions that seek to explain or predict something, modifications to the conceptual framework may emerge. The hypotheses link to Rational Choice Theory is apparent in higher performance attributes from the law enforcement workforce in the motivation and roles workers have in helping achieve and maintain a HPO environment. The manner in which the law enforcement officer attempts to maximize their utility and their “means” should be complimented by the manner that the employer recognizes these employee Rational Choice Theory traits. Each law enforcement worker, regardless of collective bargaining or not, may be motivated by these Rational Choice Theory attributes. In addition, as the
costs will be analyzed as part of this research and costs are most represented by the law enforcement officers in performing their service, the correlations, if any, of Rational Choice Theory traits of the worker and their costs will be determined.

**Independent Variable – Workforce Classification**

For purposes of potentially identifying workforce classification, each locality was placed in one of three classifications: 1) Non-collective bargaining localities (which include localities with union representation that formally “meet and confer,” but employer’s position is deciding factor); 2) Collective bargaining localities with any impasse resolved through mediation; and 3) Collective bargaining localities with any impasse resolved through arbitration. While there are similar traits of collective bargaining in two of the classifications, the research can help better gauge if there are any implications for the dependent variable based upon the type of impasse resolution.

Mediation is a “voluntary process where an impartial, neutral, third party with the professional training and experience acts as a catalyst to enable clear and concise communication and negotiation between two conflicting parties” (Conflict Resolution, 2012, p. 1). With a goal of a mutually satisfactory resolution, the process may provide solutions that otherwise were not apparent at the start of the negotiation process. This flexibility component is a contrast to arbitration, whereby a more structured legally binding arbitration process may focus on whether the employer or the union is right. For arbitration, an attorney or retired judge may utilize sworn testimony and employer and union can each present their “evidence” in having the arbitrator reach a final decision.
Certain challenges with mediation may arise if compromise mindsets are not apparent and the impasse needs to be resolved. However, mediation may provide leverage to the employer’s position whereas arbitration may provide leverage to the employee’s union; therefore, arbitration impasse resolution is more often associated with more powerful unions.

Table 3.1: Collective Bargaining State Laws for Law Enforcement Employees was derived from Charles Salerno’s Police at the Bargaining Table (1981), amended for environment that existed in 2010, and illustrates the variance of collective bargaining laws for law enforcement employees amongst the states. As Table 3.1 illustrates, there are thirty-two states that permit collective bargaining for its law enforcement organizations and for the other eighteen states not listed in the table (36.0% of total states), those states do not permit collective bargaining. For these collective bargaining states, they are segmented in two manners based upon how an impasse (inability) in negotiations to proceed further towards agreement is resolved: 1) Fifteen states (30.0% of total states) - Any impasse is resolved through mediation and not any binding arbitration; and 2) Seventeen states (34.0% of total states) - Any impasse is resolved through binding arbitration. While the table was compiled in 1981, additional reviews were done through state-by-state research to determine if any state changes have been done with regards to local law enforcement organizations, with adjustments made as applicable, and based upon such reviews, the data in the table appears accurate for the performance, cost and control variable period under review (2008-2011).
Table 3.1: Collective Bargaining State Laws for Law Enforcement Employees

<table>
<thead>
<tr>
<th>State</th>
<th>Mediation when Impasse (15 states)</th>
<th>Mandatory Arbitration when Impasse (17 states)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AK</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>CA</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>CT</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>DE</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>FL</td>
<td>Yes-1</td>
<td></td>
</tr>
<tr>
<td>HI</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>IA</td>
<td>Yes-1</td>
<td></td>
</tr>
<tr>
<td>IL</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>IN</td>
<td>Yes-1</td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>MA</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>MD</td>
<td>Yes</td>
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</tr>
<tr>
<td>MI</td>
<td>Yes</td>
<td></td>
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<tr>
<td>MN</td>
<td>Yes</td>
<td></td>
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<tr>
<td>MT</td>
<td>Yes</td>
<td></td>
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<tr>
<td>NE</td>
<td>Yes-1</td>
<td></td>
</tr>
<tr>
<td>NV</td>
<td>Yes-1</td>
<td></td>
</tr>
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<td>NH</td>
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<td></td>
</tr>
<tr>
<td>NV</td>
<td>Yes-1</td>
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</tr>
<tr>
<td>NJ</td>
<td>Yes</td>
<td></td>
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<tr>
<td>NM</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>NY</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>OH</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>OK</td>
<td>Yes-1</td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>PA</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>RI</td>
<td>Yes</td>
<td></td>
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<tr>
<td>SD</td>
<td>Yes-1</td>
<td></td>
</tr>
<tr>
<td>TX</td>
<td>Yes-1</td>
<td></td>
</tr>
<tr>
<td>VT</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>WA</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>WI</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

-1 Also a right-to-work state (9 states)
There appears to be geographic spread amongst both categories as there is no concentration of mediation or arbitration in any one geographic region. In addition, Table 3.1 also illustrates what states (nine in total) that have collective bargaining also classified as right-to-work states. This classification of right-to-work vs. non-right-to-work was initially addressed in Chapter 2 – Review of the Literature (Figure 2.4: Right-to-Work States Map) and is included later in this chapter as this classification will be a control variable to determine if any variability exists between localities with such legal classifications because of their respective state law. However, because of each state’s definition of local law enforcement organizations, their abilities to unionize and their abilities to resolve impasse appear to be the hierarchal manner in measuring a law enforcement organization’s collective bargaining ability. Therefore, it is this classification that will be focused upon as the independent variable rather than the more broad right-to-work classification which is better represented as a control variable.

Not included in the thirty-two collective bargaining states are two states: 1) Kentucky which permits collective bargaining, but only for Louisville (which will be appropriately coded as collective bargaining if Louisville is in the sample); and 2) Kansas - which enable law enforcement organization and the employer to “meet and confer” for the purpose of negotiating a contract. However, “meet and confer” generally favor the employer’s desired terms and conditions as the employee union simply presents its desires and not demands. Therefore, because the employer is positioned to not negotiate further, these “meet and confer” states have been classified as non-
collective bargaining for the purposes of data coding. Therefore, there are eighteen states in total that do not permit law enforcement collective bargaining.

For the thirty-two collective bargaining states, the ability for the employee (law enforcement officer) to grievance exists in all but three states (Alaska, Delaware and Nevada); and because of these few states and the inability to find research which focuses on the classification differentials in unions that arise because of a grievance process, such trait was not subject to further data analysis or special coding. Only one state enables law enforcement to strike (Montana), but there are many restrictions on this ability (e.g., request state’s permission, ensure adjoining locality coverage); therefore this trait is also not considered a differentiating factor worthy of further consideration for data analysis.

**Dependent Variable – Composite Performance Measure**

In determining the population of dependent variables, as they pertain to law enforcement HPO measures, focus was placed upon four primary high performance statistics or traits: 1) Survey Results - the perception a citizen has about the law enforcement services provided in their locality and how safe and secure they feel in factors that are key to high quality of life; 2) Crime Index – data from actual crimes committed; and 3) National Accreditation – recognition of a professionally managed law enforcement organization. The preceding indicators appear to be representative and an appropriate gauge for performance from both an internal (staff, elected official) and external (citizen, business, media) perspective. dependent and control variables to use,
the ICMA’s Performance Measurement Survey was a good source and Appendix C includes the complete population of those variables related to law enforcement services (ICMA, 2011). From this population of variables, the most relevant to the hypotheses were utilized in this research. Each of these four primary HPO statistics or traits is further addressed in the following sections.

Performance and cost of services can also be influenced by factors that are not correlated to workplace practices or controlled by the locality which can result in variability between two otherwise similar law enforcement organizations. These would include: 1) Adverse weather; 2) Federal and state influences (e.g., mandates, funding, local taxing authority constraints, classification of correctional officers as law enforcement officers); 3) Socio-economic factors (e.g. household incomes, unemployment rate); 4) Overlapping law enforcement jurisdictions in service area (e.g., town-county, state law enforcement officer roles in localities); and 5) Demographic traits (e.g., density of service area, variations between citizen population and others served (business workers, visitors, tourists, college students, pass-through traffic), traffic congestion, road networks) (ICMA, 2011).

In addition, the priority of law enforcement services amongst funding priorities of other services can change the investment in law enforcement and any correlated result outcomes associated with such investment. The locality may also have certain demographic and socio-economic traits similar to a comparable locality, but may have a large variance in its priority, citizen preferences or political philosophy to tax its citizens
and businesses in a comparable manner. Finally, local law enforcement policies may be different in administering and interpreting the law which could cause arrests to be higher or lower for certain crimes committed (ICMA, 2011).

Even an otherwise simplistic measurement term for law enforcement from a citizen’s perspective - “response time” (how quickly a law enforcement officer responds on a service call) - is not universally defined as to the parameters to consistently calculate. In some local governments, the 911 call is received by a 911 center and dispatched directly to a responding law enforcement unit whereas in other local governments, the 911 center may transfer the call to the law enforcement organization for them to dispatch officers. Any calls that result in transferring to another entity would add to any response time from the citizen’s perspective of when the 911 call was first made, but the performance information tracked by the law enforcement division may only begin tracking the “response time” after getting the transferred call or when the call was actually dispatched to a responding law enforcement unit. Another factor that challenges comparability includes density bias as a higher density population has an inherent advantage in having a faster response time than a lower density population. Therefore, the performance measurement of “response time” has been excluded due to inconsistent manners between local governments of how such measurement is reported and natural variances that arise because of density attributes.
Survey Results - National Citizens Survey

Measures of high performance include customer satisfaction with service (effectiveness measures) that is obtained via survey with citizens. The International City-County Managers Association (ICMA) has a partnership with the National Research Center, Inc. (NRC) to promote a product called National Citizens Survey (NCS). ICMA is a recognized professional membership-based organization serving local government managers. NRC is a professionally recognized survey business that is contracted by local governments to perform standardized surveys that provides a report with comparable results of other local governments. There are many survey questions to citizens that inquire about quality of services and quality of life attributes.

NRC has a current inventory from 2002-2011 of over 250 localities in 41 states, but it also compiles information from another 300 local governments that had other survey institutions conducting similar surveys of local government services (NRC, 2012). The surveys of local governments reflect results 2002–2011, with the most recent local government’s survey represented in the sample size. Because many local governments benefit from cyclical surveys every 2-3 years, much of the sample size reflects surveys conducted 2008-2011. This concentration 2008-2011 also correlates to the time frames utilized for crime rates, Census data, financial results and other variables utilized in data analysis. As public access to the NCS database of all localities and their survey results is not publicly available, a phone conversation with the NRC Director Tom Miller enabled access to this information. The only caveat to gaining
access to this database is that specific local government survey results cannot be reproduced publicly.

Because local governments elect to participate in such surveys and pay NRC to conduct the survey, a self-selection bias may arise in the results of data. This bias arises as population of data may not be a random sample amongst the entire population of local governments and their law enforcement organizations. However, this bias is mitigated based upon the following: 1) The NCS is not designed solely to gauge law enforcement services performance, but rather all local government services; therefore law enforcement service performance attributes are part of a much larger review with the local government governing body or chief administrative officers contracting for the survey (and not the law enforcement chief); 2) The NCS process does utilize random sampling methods for its survey, so the underlying results by locality meet standardized random sampling principles; and 3) Additional demographic information about the local governments were accumulated to determine their composite demographic representation amongst all local governments. The results of the composite demographic analysis are included in Chapter 4 – Findings. Table 3.2: The National Citizen Survey Methods and Goals summarize the NCS (NRC, 2012):
Table 3.2: The National Citizen Survey Methods and Goals

<table>
<thead>
<tr>
<th>Survey Objectives</th>
<th>Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Identify community strengths and weaknesses</td>
<td>*Multi-contact mailed survey</td>
</tr>
<tr>
<td>*Identify service strengths and weaknesses</td>
<td>*Representative sample of 1,200 residents and households</td>
</tr>
<tr>
<td></td>
<td>*5% margin of error</td>
</tr>
<tr>
<td></td>
<td>*Data statistically weighted to reflect population</td>
</tr>
</tbody>
</table>

Assessment Goals

<table>
<thead>
<tr>
<th>Immediate:</th>
<th>Long-term:</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Provide useful information for:</td>
<td>*Improve services</td>
</tr>
<tr>
<td>*Planning resource allocation</td>
<td>*More civic engagement</td>
</tr>
<tr>
<td>*Performance measurement</td>
<td>*Better community quality</td>
</tr>
<tr>
<td>*Program and policy</td>
<td>*Stronger public trust</td>
</tr>
</tbody>
</table>

Survey validity can be segmented into two parts: 1) How can a locality be confident that the results from those who completed the survey are representative of the results that would been obtained had the survey been administered to the entire population? and 2) How closely do the perspectives recorded on the survey reflect what residents really believe or do? (NRC, 2011). In addressing the first question, NRC attempts to have high response rates via mail surveys to residents within a local government in a manner consistent with the original Dillman Approach: 1) Respondent-friendly questionnaire; 2) Multiple contacts by first-class mail (e.g., respondents contacted three times by NCS); 3) Return postage free envelopes; and 4) Personalized correspondence (e.g., letter from mayor encouraging citizen to respond) (Thorpe, 2009). Revised Dillman approaches, also known as Tailored-Designed Method (TDM), which include token financial incentives, are not deployed by NRC.
Because of a vested and affiliated nature that exists amongst citizens of their locality, response rates traditionally range between 20 – 45%; which together with the randomness of the sample selection enable sample error rates of less than 5% (NRC, 2011). For example, in Hanover County, Virginia’s NCS in 2011, 1200 households were randomly selected with 458 surveys returned for a 39% response rate (NRC, 2011). In addition, for Hanover County, NRC states that the confidence interval is 95% which indicates that for every “100 random samples of 1200 households, 95 of the confidence intervals created will include the “true” population response” (NRC, 2011, p. 83).

“Survey data weighting” is another attribute deployed by NRC to better align the sample with the demographic characteristics of the population and is accomplished via: 1) “Reviewing sampling demographics and comparing them to the population norms from the most recent census or other sources; and 2) Comparing the responses to different questions for demographic subgroups” (NRC, 2011, p. 85). NRC utilizes a special software program using mathematical algorithms to calculate the appropriate weights to best fit the data to the demographic profile.

Additional NCS attributes in determining the confidence of the results include (NRC, 2012): 1) Over-sampling of multi-family housing units to improve response from hard-to-reach, lower income or younger apartment dwellers; 2) Selecting the respondent within the household using an unbiased sampling procedure whereby the member of the household asked to respond to the survey is over 18 who most recently had a birthday; 3) Offering survey in non-English; and 4) Use most current demographic
database of locality to best produce representative sample whereby every nth household is systematically selected.

In addressing the second question of how closely does the survey’s results reflect what the people really believe, the citizen’s expectations of service quality play a role as well as the objective quality of the service itself provided. NCS research has concluded that there is a strong correlation between low survey results in a specific topical question being asked (e.g., how safe do you feel?) and low performance attributes of the local government organization administering the service (e.g., law enforcement) (NRC, 2011). Even if there is a disparity between the results (e.g., low survey result, but HPO confirmed via other means), local government officials cannot ignore citizen opinion. Using a non-law enforcement example cited by NRC - even if you collect trash three times a day, but residents think that your trash haul is poor, the local government still has an issue to overcome with the citizens (NRC, 2011). However, strategies in overcoming perception may be more easily developed and deployed (e.g., marketing, citizen focus groups) compared to strategies in overcoming poor performance (e.g., additional resources, costs, law changes, training).

All of the following questions as they pertain to law enforcement services from NCS surveys were included in this research analysis:

- Please rate how safe or unsafe you feel from the following (potential answers are very safe, somewhat safe, neither safe nor unsafe, somewhat unsafe, very unsafe, don’t know)
- Violent crimes (e.g., rape, assault, robbery)
- Property crimes (e.g., burglary, theft)
- In your neighborhood during the day
- In your neighborhood after dark
- In shopping areas during the day
- In shopping areas after dark

- Please rate the quality of law enforcement services (potential answers are excellent, good, fair, poor” or don’t know)

An additional question from the survey will help capture any correlation or variance between collective bargaining and non-collective bargaining localities and their citizens’ viewpoint of quality of life compared to law enforcement services. This will be further addressed under control variables. The entire survey was examined to determine if additional questions would be helpful as part of this research analysis and it appears that the overall quality of life question best represents the non-law enforcement-related questions. Many of the other questions were for other services of the local government as well as perceptions about other attributes of the local government and their community.

For purposes of data input, the average overall score will be indexed to reflect one variable and its intensity of rating. For example, excellent-good % of total and very safe-somewhat safe % of total. For purposes of calculating the total, those respondents who didn’t answer the question or noted “don’t know” were excluded from the total.
Another resource provided from the surveys is demographic information that will help populate some of the control variables that are addressed later in this chapter. There may be some local governments that do not formally, or at least statistically, survey their customers and this also would be an undesirable trait for any aspiring HPO.

Through factor analysis, the survey questions can be grouped together to determine correlations within the questions. This enables ordinal data to better represent normal distributions. The “measured variables depend on a smaller number of unobserved (latent) factors” and because each factor may affect “several variables in common,” they are known as “common factors” (Mathworks, 2012, p.1). “Each variable is assumed to depend on a linear combination of the common factors, and the coefficients are known as loadings” and with each measured variable, it also includes a “component due to independent random variability, known as “specific variance” because it is specific to one variable” (Mathworks, 2012, p.1).

There are qualitative aspects to any survey as surveys represent a respondent’s perceptions of what they think about the question being posed to them. Survey respondents are not necessarily given the time, data and other quantitative information needed to form an educated response to the question. Rather, they are asked to respond in a fairly quick manner within a finite range of options to what they think about the question being posed to them.
Crime Index – Federal Bureau of Investigation (FBI) Uniform Crime Reports

The United States Department of Justice (DOJ) had developed two measures to uniformly capture the type, intensity, volume and citizen reporting of crime. These two measures are: 1) National Crime Victimization Survey (NCVS) which reports via sample surveys reported and unreported crime from the victim's perspective; and 2) Uniform Crime Reports (UCR) based upon standardized local reporting by local law enforcement organizations to the FBI. DOJ recommends use of both of these complimentary and comprehensive indicators to assess crime and its trends in the United States (USDOJ, 2012). Some of the differences between UCR and NCVS are illustrated in the Table 3.3: Comparison Between Uniform Crime Rate (UCR) and National Crime Victimization Survey (NCVS) (USDOJ, 2012). However, because the NCVS data is not segmented by locality, it is not able to be used as part of this research.

Table 3.3: Comparison Between Uniform Crime Rate (UCR) and National Crime Victimization Survey (NCVS)

<table>
<thead>
<tr>
<th></th>
<th>UCR</th>
<th>NCVS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographic coverage</td>
<td>National and State estimates, local law enforcement organization reports</td>
<td>National estimates</td>
</tr>
<tr>
<td>Collection method</td>
<td>Reports by law enforcement organization to the FBI on a monthly basis</td>
<td>Survey of over 77,000 households and 134,000 individuals age 12 or older.</td>
</tr>
<tr>
<td>Measures</td>
<td>Index of serious types of crimes reported by law enforcement</td>
<td>Reported and unreported crime; details about the crimes, victims, and offenders</td>
</tr>
</tbody>
</table>

The UCR Part I crimes is the common reference point for serious crimes. The UCR Part I crimes data is reduced by “unfounded cases” whereby an initial crime reported is later removed from the report due to defined circumstances (e.g., victim
recants that a crime ever took place). Not included in UCR Part I crimes are unreported crimes as some crime victims are unwilling to report offenses against themselves for fear of retribution from the offender whereas others report actions as criminal even though they may not be criminal (ICMA, 2011). While these constraints are noted, it is not possible to segment out the variations between localities that may exist in reporting and citizen’s willingness to report. For purposes of this research, it is assumed that such variations are immaterial in their influence of the analytical results.

The UCR Part I crimes are classified between violent and property crimes. Violent crimes include aggravated assault, forcible rape, murder and robbery. Property crimes include arson, burglary, larceny-theft and motor vehicle theft. The UCR Part II crimes are considered less severe and include, but are not limited to, simple assault, loitering, embezzlement, forgery, disorderly conduct, driving under the influence, drug offenses, gambling, prostitution, sex offenses, stolen property, vandalism and weapons offenses (USDOJ, 2012). When multiple crimes are committed by the same offender in one event, only the most serious of all the crimes committed is reported. For purposes of this research, only UCR Part I crimes are captured in determining crime indexes; as there may be more variability in which localities record UCR Part II crimes. The comparison between actual crime rates and the survey response results noted in the previous section of a citizen’s perception of crime will help illustrate any correlation or contrast between actual crime and its perception. Figure 3.1: Violent Crime, Arrests,
Reports and Unknown helps capture the manners in which crimes are reported or not reported (Robey, 2012).

**Figure 3.1: Violent Crime, Arrests, Reports and Unknown**

A source for the crime rates is the FBI’s Uniform Crime Reports database in which all localities have information self-reported to one source. This information is also available for the public to review and was utilized as a source for this research (FBI, 2010). The most recent complete data source year available is 2010. As violent crimes are more serious in nature than property crimes, but property crimes are more voluminous, each of these crime rates will be captured and analyzed separately in order
to not distort the violent crime rate. The denominator will be the total demand; which in this case is planned to be population. In order to present the modified crime rate index as an appropriate ratio and not a small fractional ratio, the crimes over the demand indicator will be multiplied by a factor of 10,000.

Accreditation – Commission on Accreditation for Law Enforcement Agencies (CALEA)

The pursuit and attainment of national accreditation for local government law enforcement is recognized as a HPO trait in ensuring compliance to generally accepted standards of the profession. The Commission on Accreditation for Law Enforcement Agencies, Inc. (CALEA) was formed in 1987 by the four major national law enforcement associations: International Association of Chiefs of Police, National Organization for Black Law Enforcement Executives, National Sheriff’s Association and Police Executive Research Forum. CALEA has published a standards manual containing professional standards that address nine major law enforcement areas: 1) Role, responsibilities, and relationships; 2) Organization, management, and administration; 3) Personnel structure; 4) Personnel process; 5) Operations; 6) Operation support; 7) Traffic operations; 8) Detainee and court-related activities; and 9) Auxiliary and technical services (CALEA, 2012).

As Table 3.4: CALEA Certifications by Type of Organization illustrates, there are 605 organizations in the United States that have earned CALEA accreditation and once accredited, the local organization is required to get reaccredited every three years (CALEA, 2012). Of these 605 organizations, only the first three classifications would be
subject to a local government survey utilizing NCS; therefore it can be assumed that there are potentially 487 local government law enforcement organizations that have received CALEA national accreditation.

Table 3.4: CALEA Certifications by Type of Organization

<table>
<thead>
<tr>
<th>Organization Type</th>
<th>CALEA Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal (City, Town)</td>
<td>390</td>
</tr>
<tr>
<td>Sheriff’s Office</td>
<td>78</td>
</tr>
<tr>
<td>County Law Enforcement</td>
<td>19</td>
</tr>
<tr>
<td>State Organizations</td>
<td>29</td>
</tr>
<tr>
<td>Campus Law Enforcement</td>
<td>57</td>
</tr>
<tr>
<td>Other (e.g. Railroad Authorities)</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td>605</td>
</tr>
</tbody>
</table>

From the U.S. Department of Justice’s (2008) Census of State and Local Law Enforcement Agencies, there are 12,501 (80.3% of total) local police departments and 3,063 sheriff offices (19.7% of total) in the United States for a total 15,564. As noted in the types of local government control variable, many law enforcement agencies may be overlapping in nature and for many small towns, the law enforcement coverage may be performed though inter-local agreements or oversight (e.g., County sheriff for town).

The standards denote what a law enforcement organization should be doing while illustrating compliance with established standards. However, this does not
necessarily refer to how the standard is performed or implemented as there is permitted variability and discretion deferred to individual local law enforcement organizations. There are over 600 standards that comprise over 80 categories. For example, one category is titled “Criminal Investigation” and one standard in this category states “if the criminal investigative function does not provide 24-hour coverage, an “on-call” schedule of investigators is maintained” (CALEA, 2012, p. 1). However, flexibility and discretion is given to the local law enforcement organization on how such schedule is developed, deployed and reviewed for effectiveness.

The standards help law enforcement organizations in the following manners: 1) Strengthen crime prevention and control capabilities; 2) Formalize essential management procedures; 3) Establish fair and nondiscriminatory personnel practices; 4) Improve service-delivery; 5) Solidify inter-organization cooperation and coordination; and 6) Boost citizen and staff confidence in the organization (CALEA, 2012). Organizations that seek accreditation are required to comply only with those standards that are specifically applicable to them. Applicability is based on two factors: 1) Organization’s size; and 2) Functions it performs. Applicable standards are categorized as mandatory or other-than-mandatory. Organizations must comply with all applicable mandatory standards and at least 80% of applicable other-than-mandatory standards. If an organization cannot comply with a standard because of legislation, labor agreements, court orders, or case law, waivers can be sought from CALEA. However, there are very few local law enforcement organizations amongst the 605 that have sought a waiver because of their labor agreement. Therefore, while such waiver factor
may be worthy of a separate analysis, it was not considered a determining factor for this research analysis.

As an overview to their accreditation standards, CALEA provides the following benchmarks (CALEA, 2012):

- Requires an organization to develop a comprehensive and uniform set of written directives to reach goals, while also providing direction to personnel
- Provide the necessary reports and analyses a law enforcement chief needs to make fact-based, informed management decisions
- Requires a preparedness program be put in place so an organization is ready to address natural or man-made unusual occurrences.
- Means for developing or improving upon an organization’s relationship with the community
- Strengthens an organization’s accountability, both within the organization and the community, through a continuum of standards that clearly define authority, performance, and responsibilities
- Limit an organization’s liability and risk exposure because it demonstrates that internationally recognized standards for law enforcement have been met, as verified by a team of independent outside CALEA-trained assessors
- Facilitates an organization’s pursuit of professional excellence
For some local law enforcement organizations, national CALEA accreditation is not pursued because of the equivalent value, lower cost and general acceptance for those states that have their own state accreditation process. As an example, the Virginia Law Enforcement Professional Standards Commission (VLEPSC) is managed by the State’s Department of Criminal Justice Services and was created in 1993 by the governing bodies of the Virginia Association of Chiefs of Police and the Virginia Sheriff’s Association. The VLEPSC’s 187 professional standards are in four areas (administration, operations, personnel and training). In 2011, there were 82 law enforcement organizations in Virginia with VLEPSC accreditation (Va DCJS, 2012). Once accredited, the organization is required to be reaccredited every four years. Of these 82 organizations with Virginia accreditation, only three also have national CALEA accreditation. However, there are 19 Virginia law enforcement organizations that just have CALEA accreditation and no VLEPSC accreditation. From a national perspective, of the 605 organizations with CALEA accreditation, there appears to be similar dynamics to Virginia in which many more have state accreditation, some of which have both state and national accreditation and some just have national accreditation. Because of the variability of state accreditation practices (e.g., some states may have standards similar to CALEA whereas other states may have far less demanding standards resulting in easier accreditation), only the national accreditation measure will be used in representing a HPO trait of law enforcement organization.

CALEA actually recognizes law enforcement organizations that are in the self-assessment phase as part of their CALEA accreditation-seeking process. This step is
required prior to a site visit and formal accreditation review. From discussions with CALEA Accreditation Assessor Doug Goodman, it appears that any organization that is at that step in the accreditation process will seek the formal accreditation review and very often, such organization has demonstrated traits of HPO as part of self-assessment (Goodman, 2012). In essence, the self-assessment helps position the law enforcement organization to know the accreditation standards and enables them to implement such standards prior to the formal accreditation review. Therefore, as part of the data analysis, those law enforcement organizations that are part of the sample that have been identified to be part of the self-assessment process will be recognized to have 50% of the accreditation HPO trait as opposed to 0% for those organizations that have chosen to not participate at all in such process.

**Composite Performance Measure**

The preceding measures comprise a representative array of performance attributes for law enforcement agencies. In order to convert these individual measures into one composite performance measure, each of the dependent variables are converted to a quantitative ordinal measure and assigned a weight so that all of the dependent variables are best represented in the one ordinal measure. Therefore, additional coding was needed for the composite performance measure in order to position the data for consistent and comparable statistical analysis via a 100-point scale. The composite performance survey questions were on a 100-point % scale that was converted to 100-point scale via multiplying factor of 100. The accreditation
variable, as noted previously, was converted to a 100 point scale (0 – none, 50 – self-assessment, 100 – accreditation). The violent and property crime rate indices were each ranked. Those with the lowest index were assigned a 100-point scale value of 100 and the highest index were assigned a 100-point scale of 1 with incremental assignments between 1 to 100 applied to the remainder of the sample. Table 3.5: Composite Performance Measure illustrates how each of these variables can be transformed into a performance (“return”) composite measure.

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Measure</th>
<th>Initial Score Range</th>
<th>Process to Convert to 100 Scale</th>
<th>Additional Process to Classify 1 - 100</th>
<th>Weighted Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey questions on feeling safe</td>
<td>Average Score of six questions</td>
<td>1-100</td>
<td>No change</td>
<td>No change</td>
<td>25%</td>
</tr>
<tr>
<td>Survey question on law enforcement office quality</td>
<td>Score of one question</td>
<td>1-100</td>
<td>No change</td>
<td>No change</td>
<td>25%</td>
</tr>
<tr>
<td>Crime rate</td>
<td>Crime rate for UCR Part I Violent (50% weighted) and Property (50% weighted)</td>
<td>Calculated index for Violent and Property</td>
<td>Lowest rate given &quot;100&quot;, scaled down to highest rate at &quot;1&quot;</td>
<td>No additional change</td>
<td>40% (20% violent, 20% property)</td>
</tr>
<tr>
<td>Accreditation</td>
<td>Accreditation, Self-Assessment Process or No Accreditation</td>
<td>Yes, Self-Assessment or None</td>
<td>Yes =100, Self-Assessment = 50, None = 0</td>
<td>No additional change</td>
<td>10%</td>
</tr>
<tr>
<td>Total Composite Performance Measure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

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The weighted average percent ranges from 10% - 25% amongst the five dependent variable categories. While these weighted average scales are subjective in nature, it was important to define these weighted averages prior to the calculations of the HPRC formula on the sample in order to negate unintended bias. For each of the weighted criteria, a rationale behind its weighted average is described as follows:

- **Survey Questions on Feeling Safe (25%)**: A very important attribute from the perspective of a citizen and the safety of their environment (home, work, shopping, etc.). Although this ranking may be a perception of the citizen, such perceptions are based upon a rationale from the citizen’s perspective. In order for a citizen and their community to have the opportunities for a higher quality of life, the ability of the local government to provide a sense of safety for the citizen, their family, their employer and other activities the citizen participates in warrant such a high weighted average criteria in this attribute. As an inherent goal for any locality should be to perform services in a manner to achieve an outcome of having their citizens feel safe, the high weighted average criteria for this attribute is warranted.

- **Survey Question on Law Enforcement Office Quality (25%)**: Another important attribute from a citizen’s perspective in how their law enforcement office performs. While there may be high correlations between a citizen’s perspective of how safe they feel and the quality of the
law enforcement office, the importance of distinguishing this attribute separate and apart from feeling safe is recognizing the HPO potential from the law enforcement services perspective, not the safety outcomes that the feeling safe and crime rate attributes capture.

- Crime Rate (20% violent, 20% property): Whereas the previous two criteria are based upon the perspective of the citizen and account for 50% of the weighted average, the crime rate is based upon actual measures of crime. The two primary manners in which crime rates are determined are violent and property, each of which is important from measuring the relative impact and volume of crime to its community. The factors at 20% each are less than the 25% factors applied to the survey questions as the survey questions recognize an essential key of a quality of life from a citizen’s perspective whereas there may be other variables that affect crime rates in comparing them between localities as noted previously (e.g., different demand indicators of business and tourism that are not reflected in the denominator of citizens).

- Accreditation (10%): While accreditation at 10% is ranked the lowest, it is still an important variable. The low ranking was primarily a result of the voluntary nature in which law enforcement organizations participate in the national accreditation process; and also recognizes that the time, cost and other options available (e.g., State accreditation) may negate an otherwise high performing law enforcement organization from participating in the
national accreditation process. However, because accreditation is a good indicator of an organization's desire to perform at higher levels and attain HPO attributes, it is worthy of being included in the weighted average calculation; even if it is just 10%.

Performance Measure Not Utilized - Clearance Rate

Crime rates alone are not an absolute guide as to the performance of local law enforcement organizations. While the crime rates are most commonly used for measuring overall law enforcement performance, “the incidence of crime is a function of many factors unrelated to law enforcement activity”; therefore “crime rates alone are insufficient” measures of law enforcement performance (More, 1979, p. 318). Because of that limitation, other measurements were sought for law enforcement performance (e.g., surveys, accreditation).

However, another recognized measure of performance, clearance rate, was researched, but ultimately not included as an appropriate measure for this research. A clearance rate measures the ability to bring closure to a reported crime. While the efforts of the investigative division of the law enforcement organization are highly correlated with the clearance results, there are still external factors that can cause differentiations between law enforcement organizations. These differences include: 1) Complexity of the crime and quality of evidence (e.g., how well was crime scene preserved); 2) Willingness and ability of witnesses to assist; 3) Death of the possible
suspect; and 4) Extradition challenges for suspected offenders being charged and
detained elsewhere for another crime (ICMA, 2011).

Although a valid measure of performance (via ability and effort of law
enforcement personnel to “clear” a crime, this measure was not reliable enough to be
captured for this research for the following reasons: 1) Inability of the Federal Bureau of
Investigation (FBI) to easily and publicly disclose such data at the local government
level; 2) Inconsistency of reporting between local governments of what constitutes a
crime being cleared; 3) Challenges in reporting of cleared crimes in one year for a crime
that occurred in a prior year in developing a ratio of “clearance rate” that is comparable
amongst local governments; and 4) Less emphasis of FBI and localities to disclose and
report, respectively, clearance rates for public consumption and comparability amongst
localities. Although not utilized, research in the clearance rate was performed to
determine any contributions such research would have in furthering this or future
research projects.

Ideally, data recordation systems would record information into varying
demographic attributes to enable better analysis to be conducted to determine if there
may be other factors influencing performance and costs from a demographic or socio-
economic perspective. This is an especially important validation procedure for law
enforcement services as the demand for such services may vary by factors others than
population (e.g., higher density areas may have more efficient delivery methods for law
enforcement response, higher unemployment areas may have higher per capita law
enforcement responses). Again, a challenge for any HPO, public or private sector, is being able to know their customers and their preferences; with this knowledge benefited from also knowing the demographics of their customers through appropriate data collection techniques that can be done in a professional and non-intrusive or bias-free manner.

A study of local governments was performed by Wellford and Cronin (2000) that determined that there were two dominant traits correlated to higher clearance rates for homicides: 1) Performance factors of local law enforcement organization; and 2) Types of weapons used to commit crime. As it pertains to performance, policies and practices can have a “substantial impact on the clearance of homicide cases and can be increased by improving certain investigation policies and procedures involving the actions taken by the first officer to the scene, how quickly detectives arrive on the scene and the subsequent actions they take, and how many resources the organization dedicates to the investigation” (Wellford and Cronin, 2000, p.1). Additional performance factors identified as significant in Wellford and Cronin’s study include the ability to secure the crime scene, identify and reach out to potential witnesses, assigning multiple detectives to the case, detective response times to crime scene, and use of technology (e.g., crime lab work on weapons, gun checks in national systems).

While the positive effects of clearance rate can be attributable to the law enforcement organization’s performance, the inability to accurately capture and compare such data in its current state warrants exclusion of such measure from this
research. The performance attributes utilized for this research are of such quality to properly distinguish low from high performing law enforcement organizations and formulate a composite performance measure to be analyzed in hypotheses 1 and 3.

**Dependent Variable - Law Enforcement Cost per Capita**

Law enforcement organizations “traditionally have been more concerned with measures of resources than with measures of results” (More, 1979, p. 323). The expenditures (or costs as these terms can be used interchangeably) to provide law enforcement services are comprised of personal services (salaries and fringe benefits), operating (e.g., supplies, fuel, training, contractual services) and capital (e.g., vehicles). The first source for actual expenditures of personnel, operating and capital will be ICMA’s FY10 Police Services from ICMA’s annual compilation of local government services for their Performance Measurement Report (ICMA, 2011). For those localities not part of the voluntary submittal of costs, state databases that compile actual costs for local government comparative reporting will be reviewed. For states that do not provide such comparative budget reports of local governments, then secondary data sources will be sought (e.g., individual local government budgets).

The law enforcement workforce is generally comprised of sworn officers or its equivalent and the civilian workforce that provides administrative and support services. Efforts were not made to try and segment the sworn officers and their costs separate
and apart from non-sworn personnel as such data was not readily available. For purposes of this research, it is assumed that such non-sworn officer support services are proportionally the same amongst localities. In addition, the support services are an integral component to such HPOs and CALEA accreditation has many standards that could not be compliant without such support service efforts.

Actual costs as compared to budgeted costs will be utilized in order to better gauge the actual resources of the local government committed to law enforcement. Efforts will be made to ascertain accounting classifications to ensure that similar expenditures amongst law enforcement organizations are recognized in a similar fashion. In order for expenditure data to be comparable, the expenditures will be divided by population for per capita measures. It is not anticipated that any variability in these expenditure data gathering methods would otherwise reflect a materially different result in positioning a certain locality or aggregate localities, with similar other performance and demographic information, in yielding a different result in Chapter 4 – Findings. However, as more complete data is gathered for certain localities, additional efforts will be made to determine what volatility exists, if any, amongst these categories and its impact, if any, upon results.

**Dependent Variable - High Performance Return on Costs**

As noted in Chapter 2, the high performance return on costs (HPRC) composite measure attempts to compare high performance traits to the correlating costs that may have contributed to such high performance traits. The HPRC formula modified for law
enforcement services can be expressed as \( HPRC = \frac{\text{Total composite performance measure (for law enforcement)}}{\text{Law enforcement costs per capita}} \). The higher the ratio, the higher the performance is relative to the costs.

**Control Variables – Demographic, Socio-Economic and Other Measures**

There are many control variables which can illustrate the environment that exists in a locality for which law enforcement services would need to be configured, funded and managed to achieve reasonable and representative results considering such environmental factors. In determining the population of control variables to use, the ICMA Comparative Performance Measurement Program (more information in Appendix C) includes a detail of those variables related to law enforcement services or control variables (ICMA, 2011). These control variables are not manipulated as part of the research similar to the independent variables or measured after a manipulation has occurred similar to dependent variables. Certain control variables selected for the sample population will also be utilized in an additional random sample of medians of the United States to determine the variance between the sample population utilized in this research and the overall medians of the United States. The control variables are addressed in two categories: 1) Municipal bond ratings (uninsured) and 2) Other demographic and socio-economic measures.
Municipal Bond Ratings (Uninsured)

Municipal bond ratings are used as a measure to give existing and prospective bond holders an assessment of risk for the debt obligation of the locality. The higher the bond rating, the lower the risk of default. There are three primary bond rating agencies recognized: Moody’s Investors Service, 2) Standard and Poor’s; and 3) Fitch Ratings. The ratings scale vary slightly amongst the three rating agencies and are illustrated in Table 3.6: Bond Rating Scales of Three Primary Rating Agencies, but generally range from the highest and best rating of AAA to generally nine incremental lower ratings (WM Financial, 2012). The rating variations for most localities municipal debt is within the first ten incremental ratings and are classified as “investment grade” (Moody’s, 2009, p.1).

Some localities may not have issued debt or have acquired debt financing in different manners (e.g., bank loans, state loans, insured bonds that default to AAA through bond insurance) for which an uninsured bond rating does not exist. The rating agencies generally base a bond rating on a composite of the following factors specific to the local government: 1) Economic factors (e.g., unemployment rate, business environment); 2) Debt factors which include outstanding debt burden ratios (e.g., debt per capita, debt to assessed value, debt service to actual expenditures) and pay down ratios of existing debt, which is how fast (measured in years) the principal portion of the overall debt portfolio will be retired within five and ten years; 3) Administrative factors (e.g., skilled and stable leaders); and 4) Financial factors (e.g., fund balance levels).
Table 3.6: Bond Rating Scales of Three Primary Rating Agencies

<table>
<thead>
<tr>
<th></th>
<th>Moody's</th>
<th>Standard &amp; Poor's</th>
<th>Fitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best Quality</td>
<td>Aaa</td>
<td>AAA</td>
<td>AAA</td>
</tr>
<tr>
<td>High Quality</td>
<td>Aa1</td>
<td>AA+</td>
<td>AA+</td>
</tr>
<tr>
<td></td>
<td>Aa2</td>
<td>AA</td>
<td>AA</td>
</tr>
<tr>
<td></td>
<td>Aa3</td>
<td>AA-</td>
<td>AA-</td>
</tr>
<tr>
<td>Upper Medium Grade</td>
<td>A1</td>
<td>A+</td>
<td>A+</td>
</tr>
<tr>
<td></td>
<td>A2</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>A3</td>
<td>A-</td>
<td>A-</td>
</tr>
<tr>
<td>Medium Grade</td>
<td>Baa1</td>
<td>BBB+</td>
<td>BBB+</td>
</tr>
<tr>
<td></td>
<td>Baa2</td>
<td>BBB</td>
<td>BBB</td>
</tr>
<tr>
<td></td>
<td>Baa3</td>
<td>BBB-</td>
<td>BBB-</td>
</tr>
</tbody>
</table>

Bond ratings for a locality’s debt issuance may receive a AAA bond rating for factors not associated with the four previously mentioned factors. These higher bond ratings are the result of bond insurance; an insurance program whereby a premium is paid to bond insurance agencies to provide additional protections to bondholders in the event of default. The insurance premium cost is generally proportional to how far the locality’s actual underlying bond rating would have been from AAA. For example, a locality that would have naturally received an A bond rating (underlying rating) would pay a higher insurance premium for the AAA insured bond rating than an underlying AA bond rated locality. Underlying ratings information is not made formally available to the locality as they are not formally issued as part of the debt issuance process. Because these insured AAA bond ratings are not representative of the fiscal health of a locality, the proper measure for bond ratings are uninsured bond ratings.
In best positioning the sample using the variable of bond ratings, the data analysis will utilize one of the rating agencies – Moody’s Investors Services. The rationale of focusing more specifically on those local governments with bond ratings at A or above, would then be based upon the following factors: 1) 3,104 of the 3,197 local governments (> 97%) that have bond uninsured ratings, have such ratings at or greater than A bond rating (Moody’s, 2012); 2) Sufficient size and scope enabling a more complete array of data to be compiled (e.g., citizen surveys, crime statistics, budgetary information); and 3) Opportunity for HPO-based policies and practices to be developed, implemented and monitored.

As ordinal scales are developed for the statistical analysis, a no rating connotation therefore does not mean that it is below an A rating. However, because there appears to be correlations through observation between governments of a lower size and scope and no or uninsured bond ratings, the no rating connotation may be suitable for such statistical purposes.

As Figure 3.2: Adjusted Bond Rating Scale illustrates, the incremental changes in the bond rating scale are not linear, but rather have higher incremental interest rate savings between lower bond rating scale improvements (e.g., A to AA), then changes between higher bond rating scale improvements (e.g., AA to AAA). Therefore, in assigning a scaled value to the bond rating, each of the incremental ordinal values (1 through 7) will be subject to an inverse transformation as such a linear scale better reflects the change in incremental bond rating changes. For example the value of 1
converts to 0, 2 converts to .69, 3 converts to 1.1, 4 converts to 1.39, 5 converts to 1.61, 6 converts to 1.79 and 7 converts to 1.95.

**Figure 3.2: Adjusted Bond Rating Scale**

![Adjusted Bond Rating Scale](image)

**Additional Control Variables (Demographic, Socio-Economic and Other Measures)**

The following additional control variables are available from the United States Census and will be used in helping frame comparative analysis amongst similar localities that may have a different independent variable of collective bargaining. For many of these variables, the U.S. Census five-year estimate 2006 - 2010 is utilized as
the source. This range actually matches well to the sample’s reporting period of 2002 – 2011.

- **Population (000):** This is the demand statistic for a local government’s law enforcement services. The size of the population in prior research has been correlated to higher crime statistics from a per capita and related demand statistic perspective (Ellis, Beaver and Wright, 2009). In order to ensure consistency, population variable was derived from the U.S. Census and its 2011 estimate. Efforts were made to determine if there are other factors that warrant including additional demand traits in addition to the population. Examples would include hotel rooms which may better reflect tourist or business destinations and the impact that they may bring upon law enforcement. Another example is the number employees in the locality as law enforcement services need to provide coverage to citizens and businesses; and the public safety risk activities that can be associated with certain businesses. However, because of inability to get consistent and reliable data for either hotel rooms or number of employees, such demand measures were not included. In order to not have the impact of small population localities distort data results, a minimum population threshold of 5,000 was considered, but further scrutiny of the data in < 5,000 localities will be done in Chapter 4 – Findings to determine if removing such data influences results. This is because “communities with small populations, and subsequently small law enforcement forces, usually do not have law enforcement unions and yet
experience a higher proportionate level of law enforcement service expenditures” (Valetta, 1989, p. 433). As part of the data analysis, all surveyed localities will initially be included, but reviewed to determine if outliers that may affect the analysis are present with the smaller populated localities. Varying demographics of a locality can be a significant variable that influences the size and scope of a law enforcement organization. A related correlating demographic trait is rural vs. urban (which is also addressed in density measure) and size of population; whereby expenditures are higher in an urban environment (Feuille and Delaney, 1986) and increases at higher rates as the population increases (Gely and Chandler, 1993). The population variable was converted to a 1000 unit measure (population/1000) so as to have the unstandardized coefficient value be in a more understandable number.

- **Education Level (High School Graduates):** An education level of the citizens may influence the need for law enforcement services. An increase in the educational level significantly reduces subsequent violent and property crimes with numerous other positive impacts upon the community (Lochner, 2008). The threshold for education level for this research will be the percentage of population over the age of 25 with a high school diploma or greater per the U.S. Census five-year estimate 2006-2010 (national average is 85.4%). Research indicates that about 75% of America’s state prison inmates, 59% of federal inmates and 69% of jail inmates did not complete high school with these statistics increasing over prior years (Harlow, 2003). A commonly-used demographic that has mixed
correlations is education and law enforcement expenditures. While generalizations can be made that a lower educated citizenry may yield higher crime potential, as it pertains to expenditures, a Chandler and Gely (1995) study did not correlate education and expenditures. The mixed results may be attributable to a higher educated citizenry may be more understanding of law enforcement constraints and willing to commit higher law enforcement expenditures in providing for an even safer and more secure community. Chandler and Gely (1995) positively correlated the link of increasing percentage of residents with a high school education to the increased wages of law enforcement personnel. The education level may also be highly correlated to the employment potential of the citizen. In addition, as a person becomes further educated, they should have greater capacities to understand consequences of criminal activity and would therefore not engage in such activity. As noted under employment rate, the additional time that is spent occupied with a positive activity (e.g., school), reduces the idle time that could contribute to association with those with criminal intentions.

- **Wealth (Median Household Income (000)):** Median household incomes, per the U.S. Census 2006-2010 five-year estimate, can provide a perspective of the relative wealth of a locality (national average $52,762). “Income inequality has been found to contribute significantly to increases in crime” (Hsieh and Pugh, 1993). The wealth of a locality may also enable it to contribute to other factors that not only stem the increase of crime, but also provide an environment for
crime deterrence. An example may be higher taxes from a wealthier tax base that may contribute additional resources to law enforcement; not just additional law enforcement officers, but also in the various equipment and technologies that better enable deterrence and clearance of crimes committed. Another example of a wealthier tax base is additional security measures that can be afforded by citizens and businesses (e.g., home alarm systems, surveillance cameras, contracted security officers). These additional security measures can not only deter crimes from occurring, but also enable higher clearance rates through more timely notifications to law enforcement of a crime in progress or incriminating evidence via video or pictures of perpetrator. Median household income variable was converted to a 1000 unit measure (median household income/1000) so as to have the unstandardized coefficient value be a more understandable number.

- **Density**: This represents population per square miles per the U.S. Census for 2010 and can affect services that are more associated with density (national average 87.4 persons per square mile). Examples include: 1) Response times (although excluded as a performance measure because of comparability issued previously noted, it may factor into survey results); 2) Higher probability for calls for service (e.g., neighbor's noise complaints); and 3) Type of community (e.g., urban, suburban, rural). However, the correlation to density and crime are not apparent from research conducted. Keith Harries (2006) concluded that in analysing a variety of density measures across communities, that there was no evidence of a differential between property and violent crimes based on
population density (Harries, 2006). As it is correlated to how often people come into contact with one another, Witt (1990, p. 171) concluded that population density was one of the most “influential variables” that influences law enforcement expenditures.

- **Unemployment Rate**: Local governments need for law enforcement services may change based upon the unemployment rate. Policies designed to increase employment in cities and related studies have illustrated a positive correlation to higher employment and reduction in crime (Winter-Ebmer and Raphael, 2012). Examples often cited for this correlation include the responsibilities that are associated with a job and the wages earned by the employee cause the employee to be a more law abiding citizen. If the employee’s wages can provide for the needs of the employee and their family (e.g., food, shelter, clothing) as well as some luxuries (e.g., vacation, entertainment), then the employed citizen should not want to risk such provisions in committing a crime. Another contributing factor is simply time as the employed citizen’s additional forty hours plus per week is hours that are not otherwise spent idle and subject to criminal influences of others who may not be employed. In order to ensure consistency amongst the sample population, the U.S. Census 2006-2010 five-year estimate for unemployment rate will be utilized (national average is 8.7% unemployment rate).

- **Age (% Between 15 to 24)**: Local governments need for law enforcement services may change based upon the age of its population. For this research, the
age factor utilized is the population % between 15 to 24 years per the 2010 U.S. Census as the older (and younger) the population, the volume and severity of the crimes committed decreases (national average 13.5%). After age 24, a steep drop in criminal activity occurs as people take-on new roles (e.g., wage-earner, parent, spouse) and the possibility of jail time becomes a relatively more-serious matter because of the impact it will have on the perpetrators life and responsibilities (Sociology.org, 2012). As the US Census data for population is segmented into different strata every five years, there is the ability to segment the population for those above and below the age of 24.

- **Survey Question - Quality of Life:** Being able to segment the sample population’s overall perception of quality of life may provide analytical results showing variances amongst local governments, independent variables and dependent variables. In addition, correlations between quality of life and survey results of law enforcement noted previously can also be analyzed. The NCS survey questions regarding law enforcement were previously addressed under dependent variables, but the following NCS survey question about quality of life is included as a control variable (NRC, 2011): “Please rate the overall quality of life” (potential answers are “excellent,” “good,” “fair,” “poor” or “don’t know). For the purposes of compiling results in this category “excellent” and “good” were combined as a result for positive quality of life measure. The “don’t know” attribute amongst the sample ranged from 0% - 4.8% (only three localities were > 2.5%), but because such response rates were not included in the positive
measure and because such rates were so low, there appears to be no effect of such response category on the positive quality of life citizen rating.

- **Right-to-Work States:** While the independent variable properly distinguishes between unionized and non-unionized law enforcement unions, some of these unions are permitted in right-to-work states and in some non-right-to-work states, there may not be a law enforcement union. As noted in Chapter 2 – Review of the Literature, it has been a state’s right to determine whether or not to permit collective bargaining (and the related unions needed to represent the worker) for local government employees and law enforcement officers. The threshold of enabling a union first divides each state into “right-to-work” (twenty-three states) and “agency shops” (twenty-seven states), whereby two tiers exist for the right-to-work states: 1) The state, generally through its constitution (six states) or legislative code (seventeen states), defines whether or not a union can be established and if so, does it also enable public sector unions and if so, does it enable law enforcement unions which results in seven right-to-work states having law enforcement unions; and 2) If it does enable unions, then it can also define the employee’s right to join such union and the benefits that even a non-union employee receives from the union. The utilization of this attribute may illustrate if there are any variances in performance as a result of a state being classified as right-to-work state. As previously illustrated for Figure 2.4: Right-to-Work States Map and Table 3.1: Collective Bargaining State Laws for Public Employees, there appears to be a concentration of right-to-work states in the southeast.
corridor and then the Midwest states from Texas north to Minnesota. While the right-to-work states are contiguous, as they stretch from Virginia to Nevada with some contiguous states only one-state wide across the country. As a comparison, the non-right-to-work states are virtually contiguous as well from Maine to California except for two states along the way (Montana and Idaho). The reason for this contiguous alignment of this many states may be the result of similar political philosophies or similar competition for business and workers.

- **Form of Government (County, City, Other):** There are three primary types of local government structures: City, County and Town (includes all others as well (e.g., borough, parish)). They are reflected in Table 3.7: Governments in the United States (Census, 2002). Within each type of government, there may be a different manner in how the government is structured and managed which could contribute to variability in how performance is achieved. In order to account for the known variability of certain states whereby there are no overlapping jurisdictions of city and county (e.g., Virginia), county information will be further segmented between counties whose area is comprised of cities and/or towns or if there are no such 100% overlapping jurisdictions. The U.S. Census reflects the definition of City, County or Town as part of its data resource by locality. For purposes of defining the population, those identified as “county”, “municipal” or “town” would total 38,967; however as noted previously, because of overlapping services amongst two and possibly three local governments, the actual number of law enforcement organizations would accordingly be much lower. Further
classification on the number of local government law enforcement organizations (total 15,564) was previously addressed under Accreditation - CALEA; therefore, on average, there are about 2.5 local governments for every 1 law enforcement agency.

Table 3.7: Governments in the United States

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>1</td>
</tr>
<tr>
<td>State</td>
<td>50</td>
</tr>
<tr>
<td>County</td>
<td>3,034</td>
</tr>
<tr>
<td>Municipal <em>(city, town, village...)</em></td>
<td>19,429</td>
</tr>
<tr>
<td>Township <em>(in some states called Town)</em></td>
<td>16,504</td>
</tr>
<tr>
<td>School district</td>
<td>13,506</td>
</tr>
<tr>
<td>Special purpose (utility, fire, law enforcement, library, etc.)</td>
<td>35,052</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>87,576</strong></td>
</tr>
</tbody>
</table>

* Municipalities are any incorporated places (e.g., cities, towns, villages, boroughs)
**New England, New York and Wisconsin towns are classified as civil townships for census purposes

There are two primary structures of local government: 1) Mayor-council; and 2) Council-manager. For mayor-council, voters elect both a mayor (who may also serve as the chief executive) and a city council and for council-manager, voters elect a city council (and possibly an independent mayor) to make public policy for the city, but the city council, in turn, appoints a professional city manager to serve as chief executive of the city and to administer public policy (Lineberry, 2012). The type and structure of local government may influence the type of law enforcement services needed. For the
purposes of this research, only the type of government will be captured for the sample size.

**Sampling Process and Data Collection**

A quantitative approach is taken in this research because of its nominal-level measurement. Quantitative approach represents numeric description on some subset of the population through data collection process which “enables a researcher to generalize the findings” (Creswell, 2009, p. 117). Through an exploratory cross-sectional study utilizing SPSS, the data collection is a compilation of information generally available for local governments that can be further analyzed. In this type of research study, the entire population of the National Citizens Survey (NCS) local government participants was selected; which is a subset of the local government total population. It is from this population selected that data is collected to help answer the research question. It is called cross-sectional because the information about X and Y that is gathered represents what is going on at only one point in time; and in this case it would be the year of the most recent survey and related dependent and control variables in relatively close proximity to such survey date (Olsen and St. George, 2004). The subjects will be a sample of local governments.

As the demographics and related control variables are accumulated for the survey group, efforts will be made to compare characteristics of the survey group to other local governments. This will help evaluate the representativeness of the survey group to local governments as a whole or better define what subset of local
governments the survey group may better represent. While there are over 30,000 local governments (including counties, cities and towns) according to the United States Census in 2002, the survey population of 238 was selected. In Chapter 4 - Findings, additional information is provided regarding many of the variables to help illustrate how the sample size compares to the population of local governments in this cross-sectional study.

Additional techniques are needed to ensure the data is accurate and suitable for comparability as part of the analysis stage. The techniques to be deployed include the following:

- Coding System: Because of the various data sources, a coding system will need to be constructed to proportionally align the variances amongst data within its set criteria and to also not proportionally distort it with data from another criteria data source.

- Expenditure Reporting: Uniformity of expenditure reporting would need to be conducted to ensure that disparities, if any, between the manners in which local governments classify expenditures can be accounted for and adjusted accordingly.

**Design**

Construct validity is a means of assessing how well the measures being used assert themselves to be the proper measures. Through use of independent authoritative
sources of performance indicators and traditional sources of citizen surveys, the measures appear to be the proper measures.

Through the use of statistical analysis, construct validity can further be analyzed. The primary manners in which data was analyzed are as follows:

- Linear Regression: Linear Regression estimates the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable (SPSS, 2009). Linear regression will be utilized for each of the hypothesis with focus on the beta standardized coefficient, t-scores and significance of the t test. As part of the output from the linear regression, the following focused areas helped determine the relationship of the independent variable and control variables to the each of the dependent variables (unless otherwise noted, definition sources are SPSS, 2009):
  
  - R Score: A Pearson’s correlation (also referenced as r) will illustrate a number between negative 1 (absolute negative correlation) and 1 (absolute positive correlation) with a 0 serving as an absolute no correlation. As a general guideline of r and correlation is (positive or negative, as applicable): 1) None from .0 to .09; 2) Small from .1 to .3; 3) Medium from .3 to .5; and 4) Strong from .5 to 1; however, it should be cautioned that there is no universally accepted measure for correlation with regards to this statistic (Buda and Jarynowski, 2010). Another manner in which to evaluate the r strength of correlation is from Berman (2002) with strong = > .40 and very strong > .65 (Berman, 2002).
Analysis of Variance (ANOVA) – F Value: The ANOVA F-test (of the null-hypothesis that all treatments have exactly the same effect) is “recommended as a practical test, because of its robustness against many alternative distributions” (Moore and McCabe, 2003, p 763). The F Value is the value used to determine if the variances of the two distributions differ significantly from each other.

Collinearity Statistic – Variance Inflation Factor (VIF): Multicollinearity refers to the “presence of highly inter-correlated predictor variables in regression models, and its effect is to invalidate some of the basic assumptions underlying their mathematical estimation” and collinearity diagnostics measure how much “regressors are related to other regressors and how this affects the stability and variance of the regression estimates” (StatPac, 2013). VIF quantifies the severity of multicollinearity through an index that measures how much the variance (the square of the estimate's standard deviation) of an estimated regression coefficient is increased because of collinearity. Having a low VIF score (< 3.0) is a good indication that the variables subject to the test are good fit amongst the variables being compared against as part of the statistical test. Therefore, for VIFs below 3.0, further statistical analysis will be performed on the variable.

Significance: Probability that a particular correlation could occur by chance with a significance <.05 reflecting that there is less than a 5% probability
that the relationship occurred by chance. Therefore, for purposes of statistical analysis, further focus of the variable will be on the output calculations that have a .05 value or less. For output calculations that have a > .05 value, such additional focus is not warranted as there is a higher probability that the relationship occurred by chance.

- **t test (independent sample):** A comparison of two sample populations measured against one common variable (e.g., dependent variable) to determine if the means of the two sample populations differ significantly from each other as there is no overlap of membership between the two sample groups. The actual calculation of the t test is the difference between the means (shown as unstandardized coefficient B) divided by the standard error.

- **Standardized Coefficient – Beta:** The number of standard deviations a dependent variable will change, per standard deviation increase in the independent or control variable being examined and because this coefficient is standardized, the comparisons between variables can be performed easier. This accounts for variables that are measured in different units of measurement (e.g., dollars, percent change, numbers, or values that may be stated in high values (population) or low values (unemployment rate). For purposes of statistical analysis, the higher standardized coefficient – beta scores reflect, the higher the impact of that variable upon the dependent variable.
o Standard Error: The standard deviation divided by the square root of sample (N) and is a measure of stability or sampling error of the sample means.

o Unstandardized Coefficient – B: Represents the unit’s change of 1 in the independent or control variable and its effect on the mean of the dependent variable. Because each of the independent or control variables have different basis for their units (e.g., %, $ or #), the size of the B does not necessarily reflect the significance of the change.

- Descriptive Statistics: In order to ensure that the sample is representative of the population, descriptive statistics (frequency tabulations for variables comprising ordinal or nominal traits) and descriptive tabulations for variables comprising scale traits (mean) are utilized.

**Threats to Reliability and Validity (Internal and External)**

Internal validity is properly demonstrating the causal relationship between two variables based upon three criteria as illustrated by Shadish, Cook and Campbell (2002): 1) The "cause" precedes the "effect" in time (temporal precedence); 2) The "cause" and the "effect" are related (co-variation); and 3) There are no plausible alternative explanations for the observed co-variation. For each of the hypotheses, the independent variable is law enforcement collective bargaining and its effect on performance, cost and HPRC. In best testing the “cause” (collective bargaining) on
effects, it would be important to define appropriate time horizons through which the introduction of the independent variable would rationally begin to illustrate changes in the dependent variable (defined as five years or greater for purposes of this research). While not a part of this research, time studies can illustrate those without any collective bargaining and the subsequent impact to performance and costs at various time intervals subsequent to the introduction of collective bargaining or removal of collective bargaining.

However, an inherent challenge that can arise are other unknown variables that may arise in the community to cause changes in performance or costs that are not correlated to collective bargaining (or non-collective bargaining) localities; yet impacts of such changes may disproportionately impact collective bargaining trait localities versus non-collective bargaining localities. Examples would include: 1) National economic conditions that impact communities and challenge sustainability of local programs, which may lead to lower citizen satisfaction results or related lower performance indicators; or 2) National or state issue arising (e.g., state judicial sentencing guideline changes) that could change the demand indicators in sections of the country differently. In order to better control for this effect, a cursory review was performed of state law changes as they pertain to law enforcement or related factors that could be associated with materially changing performance or cost results. As the recession’s effect are virtually nationwide and because all the information and data obtained is relatively within the same time period, there does not appear to internal validity concerns. There also
does not appear to be any major state law enacted in past few years that would influence the performance results. However, review of locality by locality law changes or related factors, while a further diligent task to fully overcome this inherent internal validity challenge, is impractical as part of this research of 255 localities.

Chava and David Nachmias (2007) identified additional attributes of internal validity that could be assessed to ensure proper research design. These attributes have either been incorporated as part of this research, have been excluded or are not applicable. For attributes excluded (e.g., history impacts), such efforts to properly account for each locality in the sample are beyond the scope of this research as it would require a detailed knowledge about each of the surveyed localities that is not readily available. The following Nachmias attributes do illustrate the strategies to respond to the concerns that may arise in these variables (Nachmias, 2007):

- Addressed as Part of this Research:
  - **Maturation impacts** would need to be considered, especially if there is an elongated time horizon between the introduction or removal of collective bargaining and any performance or cost results. Because each locality in the sample is in its current state of collective bargaining for five years or greater, maturation impacts have been considered and addressed.
  - **Instrumental changes** also have to be mitigated; therefore the tools of measurement used as part of the initial research study are intended to be replicated throughout the study. If certain improvements to these
instruments are detected during the research, then an assessment would be done to determine whether to apply an improved tool to all subjects and variables, or simply to note such recommendations for improvement for subsequent additional research on this topic.

- **Selection bias** will be mitigated by attempting to best ensure that the demographics of local governments reviewed are classified similar. This mitigates effects of one locality that may have a disproportional age, education, income or other factors when compared to another local government.

- **Experimental mortality** factors are mitigated by the relative non-transition nature of local governments and collective bargaining agreements during the period of this research which is accessing data over the prior one – three years generally. The adversity of this factor is further mitigated as all data captured for independent and dependent variables will be within the same time horizon.

- **Not Addressed as Part of this Research:**
  - **History impacts** can be controlled through a checklist of major events, internal or external to a local government or community, which would impact the validity of research. This could include not just natural disasters, but also severe economic conditions, that would affect the relationship of the variables, or perhaps delay or accelerate any correlating effect. While efforts were made to determine if any of the
localities sampled suffered from national newsworthy events, the ability to know detailed local news over the past few years for each of the sampled localities is beyond the scope of this research.

- Not Applicable as Part of this Research:
  - **Regression artifacts** should not be applicable with this study as it is not the intention to determine extreme outliers whose impacts towards regressing to the mean may arise from any introduction of an independent variable or even an external variable. However, it is assumed that those who respond to customer satisfaction surveys are deemed to be not 100% apathetic or passive, but rather have some traits of engagement and desire to respond to satisfaction surveys.
  - **Selection-maturation interaction** is not expected to impact the research as the duration is of such a short time period that any physical attribute changes that would occur would be minor and is further mitigated by the non-relevance of such factors upon the variables being examined (e.g., hair color is not a relevant variable being studied nor an external threat to captured informational results).

  External validity, which is not disjointed from internal validity, is concerned with the causal inferences made from experiment groups to the population as a whole. As the effort was made in selecting the localities appropriately for this research and capturing the demographic profiles behind such subject matters for appropriate groupings, the transferability of results should occur. Cross sectional studies, as
opposed to longitudinal data, can have the effect of “generalizability of the results” being constrained, and definitively “causality cannot be conclusively stated” (Putchinisky, 2007, p. 238). However, for purposes of further illustrating external validity, traditional quantitative defenses are addressed.

- Selection of the local governments studied would be a representative sample of local governments and not subject to which local governments “volunteer” to be studied; which is often a concern with external validity. Although the sample is derived from those local governments that elect to participate in a survey, such participants are assumed to participate in the survey to meet or satisfy their own local government desire for information far beyond that of just law enforcement services. In addition, the ability to segment similar demographic and socio-economic local governments helps mitigate relative external validity concerns.

- Measurement effects are mitigated in a similar manner as previously noted under instrument effects of internal validity.

- Confounded treatment effects are mitigated by focusing on the incremental changes between the dependent variable based upon the independent variable with efforts to include those in the sample that have varying levels of dependent variable attributes of performance and costs. Therefore, the risk of generalization of one group (e.g., those with low performance) to an entire population of local governments is mitigated.
- Situational effects are mitigated as the subjects are local governments and their citizens, all subject to the same scope and duration of study.

- Effects due to differential mortality are mitigated in a similar manner as noted under internal validity.

Reliability is the consistency in a set of measurements of the actual measuring instrument. Reliability is not to be confused with validity, as reliability seeks to ensure that what is being measured is being measured consistently without regard to whether it is the right variable to measure. Therefore, with regards to this research design, the consistency is the application of the same set of parameters of questions to answer through research for each and every local government studied.

**Conceptual Framework and Concept Map**

The conceptual framework best illustrates the research problem and the beginning of the pathway by which such problem can be researched properly. In order to help frame the background and mindset of the researcher, Appendix A includes a Research Identity Memo. As noted previously, research in the past focused primarily on collective bargaining costs. In addition, this prior type of research inordinately focused on the bureaucracy of unions and the time, stress, resources and compliance efforts devoted to collective bargaining agreements. However, in this research, the ontological (nature of existence) perspective is about general assumptions of what similar groupings may occur. This will hopefully yield towards an epistemological knowledge-
based approach whereby an understanding of the actual differentiations that exist between the two types of workplaces.

From this conceptual framework, goals were further refined and a realistic and relevant mindset was sought in developing the research question. The following Figure 3.3: Concept Map illustrates the theory and the various relationships amongst the concepts being captured as part of this research. The attributes of performance and costs will be examined from both a collective bargaining and non-collective bargaining perspective; then appropriately compared and contrasted.

Figure 3.3: Concept Map
In determining the array of research literature used, it was important to ensure the validity and credibility of such documents. There are many sources for information regarding public sector unions, their costs and performance, but underlying bias can be expected to occur. This bias is directly associated with an author’s belief in the necessity of public sector unions. In addition, HPO traits for the public sector can also be skewed in documents to support the position of the author of such documents. Therefore, it was important to ascertain that the documents are presented from a non-biased perspective of the author, that any quantitative research is properly supported and that the lens of qualitative research is not too narrowly focused upon a segment that may not be representative of the environment.

The documents utilized were primarily research-based articles and books. Efforts were made to find resources that compare and contrast collective bargaining and non-collective bargaining workforces and workplaces; with a focus on public sector unions and, more specifically, law enforcement services. In addition, information was reviewed as it pertains to generally accepted HPO traits and measures with emphasis on law enforcement services. These traits and measures should be the same regardless of whether it is from a collective bargaining or non-collective bargaining locality.

Validating the accuracy of findings can traditionally be performed via two of the three permissible means (Creswell, 2005): 1) Triangulation (utilizing different sources); 2) Member checking (using participants to check the accuracy); and 3) External audit (outside expert perspective). As this stage of the research project is simply data
collection, triangulation and external audit are the only alternatives. However, even triangulation has its limitations as data collection techniques were focused on limited sources (e.g., survey, uniform crime reports, and census-based information). Therefore, the external audit resources of the dissertation committee reviewing this project will serve as an additional means to the validation of accuracy.

**Data Variable Coding**

For each of the variables noted the SPSS statistical variable classification, the following traits were inputted for each of the 238 sample items.

- **Name**: Variable name
- **Type**: Other than “Locality Name” which is classified as a “string”, all variables are classified as “numeric”
- **Width**: The width is appropriate to capture the largest variable name for each variable
- **Decimals**: All “numeric” classified variables have been assigned a “0” decimal point if represented in dollars or other non-percentage classification and a “1” decimal point if a percentage
- **Label**: Generally, the label has followed the “Name” classification noted previously
• Value: All of the values are noted as “None” except for five of the variables that have had a 0, 1, 2, etc. numeric assignment and appropriate description noted as follows:
  
  o Collective Bargaining Classification: Initially coded as 0 – none; 1 – collective bargaining via mediation; and 2 – collective bargaining via mandatory arbitration. However, for purposes of positioning the ordinal data to be properly analyzed with linear regression via two variables (0 and 1), the workforce classification was recoded as follows: Mediation (coded as 1) singularly identified and compared to non-collective bargaining and arbitration (coded as 0); and arbitration (coded as 1) singularly identified and compared to non-collective bargaining and mediation (coded as 0).
  
  o Accreditation: Initially coded as 0 – none; 1 – self-assessment; and 2 – accredited, this coding was converted to a 100 point scale for purposes of the composite performance measure calculation with an assignment of 0 points for none, 50 points for self-assessment and 100 for accreditation. This point assignment is meant to illustrate the complete 100 point variance between accreditation and non-accreditation, while recognizing a high performance aspect and desire for self-assessment. The even nature of the spread of 50 points to self-assessment and another 50 points to accreditation is based upon an understanding of the efforts taken to accomplish such a recognized task. There does not
appear to be any quantitative research of assigning a linear 100-point scale to levels of accreditation. However, a rationale can be applied to stating that full accreditation is worthy of the highest point scale (100 and that not having any indication of any potential accreditation in the short-term is worthy of the lowest point scale (0). Therefore, the only subject measure may be self-assessment's 50 point scale measure and with only eight localities with such trait and the realization that being self-assessed is neither accredited nor no accreditation, a 50 point scale appears reasonable.

- Bond Rating Adjustment Scale: Initially coded as 1 – no rating; 2 - < A; 3 – A; 4 – AA3; 5 – AA2; 6 - AA1; and 7 – AAA. As Figure 3.2: Adjusted Bond Rating Scale illustrates, the incremental changes in the bond rating scale are not linear, but rather have higher incremental interest rate savings between lower bond rating scale improvements (e.g., A to AA), then changes between higher bond rating scale improvements (e.g., AA to AAA). Therefore, in assigning a scaled value to the bond rating, each of the incremental ordinal values (1 through 7) will be subject to an inverse transformation as such a linear scale better reflects the change in incremental bond rating changes. For example the value of 1 converts to 0, 2 converts to .69, 3 coverts to 1.1, 4 converts to 1.39, 5 converts to 1.61, 6 converts to 1.79 and 7 converts to 1.95.
Local Government: 1 – city; 2 – county; and 3 – other. However, for purposes of positioning the nominal data to be properly analyzed via two variables (0 and 1 for linear regression and related t-tests), the local governments were coded in two different manners: County (coded as 1) singularly identified and compared to city and other local governments (coded as 0); and City (coded as 1) singularly identified and compared to county and other local governments (coded as 0).

Right-to-work: 0 – right-to-work state; and 1 – non-right-to-work state

- Missing: All data variables have no missing data
- Column: Appropriate width assigned to capture data results
- Align: All variables are aligned right with the exception of locality name which aligned left
- Measure: All variables are aligned to scale as they represent an interval manner in how data is recorded with each interval higher a proportional difference between the prior interval with the following exceptions to the scale classification (those with ordinal are labeled as such because as each interval becomes higher it may not necessarily represent a proportional difference between the higher variable and the lower variable:
  - Locality Name: Nominal as it represent a word classification
  - Collective Bargaining Classification: Ordinal
  - Accreditation: Ordinal
o Bond Rating: Initially recorded as ordinal, but as illustrated previously with adjustments applied based upon actual interest rates amongst different tiers of bond rating scale, an inverse transformation line better illustrates a scale linear relationship

o Local Government: Nominal as it merely classifies each locality name into city, county or other

o Right-to-work: Nominal as it merely classified each state into one of two categories

- Role: All variables are classified as “input”

**Comparison of Sample Size to the Population**

The comparison of the sample size to the population in this cross-sectional study can be better confirmed via the comparison of many of the variables and their traits to overall local government and related population statistics. Through such comparison, it can better illustrate that the 238 sample size utilized for this research is representative of the population; or at a minimum can be qualified accordingly and classified to better represent a trait of the population. The sample size was compiled from the National Citizens Survey (NCS) entire population of those localities that initiated with NCS to perform a survey. The surveys of local governments reflect results 2002–2011, with the most recent local government’s survey represented in the sample size. Because many local governments benefit from cyclical surveys every 2-3 years, much of the sample size reflects surveys conducted 2008-2011. This concentration 2008-2011 also
correlates to the time frames utilized for crime rates, Census data, financial results and other variables utilized in data analysis.

There may be an inherent bias in recognizing that higher performing or those formally and publicly desiring to become higher performing would initiate such a survey whereas lower performing or those not publicly wanting to capture such information may not want to initiate such survey. The sample size comparability analysis was comprised of frequency tabulations and descriptive tabulations; depending upon the variable and its coding methodology.

**Frequency Tabulations**

Through SPSS, frequency tables were compiled on those variables assigned a value classification (either nominal or ordinal). For Table 3.8: Workforce Classification (independent variable), there is 68 with no collective bargaining (28.6% of total), 83 with collective bargaining via mediation (34.9% of total) and 87 with collective bargaining via mandatory arbitration (36.6% of total). As noted in Table 3.1: Collective Bargaining State Laws for Law Enforcement Employees, the classification amongst states illustrated the following composition: 1) No collective bargaining 36.0%; 2) Collective bargaining via mediation 30.0%; and 3) Collective bargaining via mandatory arbitration 34.0%. Based upon the distribution of the sample size compared to the population, it appears that the sample is representative of the population.
Table 3.8: Workforce Classification

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Collective Barg.</td>
<td>68</td>
<td>28.6</td>
<td>28.6</td>
<td>28.6</td>
</tr>
<tr>
<td>Mediation</td>
<td>83</td>
<td>34.9</td>
<td>34.9</td>
<td>63.4</td>
</tr>
<tr>
<td>Arbitration</td>
<td>87</td>
<td>36.6</td>
<td>36.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>238</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Regarding national accreditation for law enforcement services, Table 3.9: Accreditation (dependent variable) illustrates that those accredited were 19.3% of the total sample while self-assessment process (defined by CALEA to be major step towards national accreditation) was at 3.4% of the total sample – together both of these represent 22.7% of the sample population. There are a total of 487 local government law enforcement organizations with national accreditation (CALEA, 2012); of which 46 of those local governments were included in this sample. In addition, there are a total of 15,564 local government law enforcement agencies in total (US Census, 2009). Comparing total national accreditation (487) to total law enforcement agencies (15,564) indicates that 3.1% of all law enforcement agencies have national accreditation.

While the sample illustrates a much higher rate at 19.3%, it is recognized that many of the 15,564 law enforcement agencies are small organizations that may not have the resources (staff and funding) to comply with or initiate an accreditation process. Also, as noted previously, there can be assumption that local governments which initiate a citizen’s survey also have that same characteristic trait in pursuit of many accreditations; including law enforcement.
The sample’s 19.3% factor applied to the 487 accredited local government organizations could calculate that of the 2,523 local governments (487/19.3%) that have the ability to pursue and achieve national accreditation, 487 have achieved such accomplishment. That statement has a rationale nexus that provides support that the sample size does proportionately capture the same population traits of local law enforcement organizations. As the top 1,000 cities of the United States ranks the 1000th ranked city (Cottonwood Heights UT) with a population of 35,394 in 2009 (biggestcities.com, 2009), it would appear that recognizing approximately 2,500 local governments that have the size and scope of a local law enforcement organization to be subject to this population trait for performance-related attributes is a reasonable assumption.

As a further measure of the scope of local governments suitable for the population, the bond rating control variable analyzed in the next section notes that there are 4,240 local governments with an uninsured bond rating. The nationally accredited law enforcement organizations (487) would represent 11.5% of total law enforcement organizations (4,240) which is closer to the 19.3% of the sample population. The differential between 19.3% and 11.5% can then be more narrowly rationalized to other attributes already addressed (e.g., time and funding to comply; lower performing electing to not participate; or preference of just having state accreditation).
Table 3.9: Accreditation

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>184</td>
<td>77.3</td>
<td>77.3</td>
<td>77.3</td>
</tr>
<tr>
<td>Self-Assessment</td>
<td>8</td>
<td>3.4</td>
<td>3.4</td>
<td>80.7</td>
</tr>
<tr>
<td>Accredited</td>
<td>46</td>
<td>19.3</td>
<td>19.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>238</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.10: Bond Rating (control variable) illustrates the distribution of bond ratings amongst the sample size with 55 of the local governments (23.1% of the total) having no bond rating. For those 76.9% of local governments with a bond rating, Aa2 was the most prevalent bond rating with 60 rated at Aa2 (25.2% of the total and 32.8% of total with bond ratings). For the highest bond rating of Aaa, there were 22 rated Aaa (9.2% of the total).

From the Moody’s Investors Services (2009) listing of all municipal bond ratings there are 4,240 local governments with a bond rating. Comparing these totals with total local governments previously noted, 10.9% of all local governments (4,240 total local governments with bond ratings/38,967 total local governments) have a bond rating. Based upon the distribution of those with and without bond ratings, the sample with 23.1% not having a bond rating compares to the national average of 89.1%. However, using the 15,564 total local governments with law enforcement organizations, this lowers the total without bond ratings from 89.1% down to 72.8%. In addition, for those with a bond rating, selecting the most prevalent bond rating of Aa2, for which there are
1,282 local governments representing 30.2% of the total of all bond ratings (1,282 Aa2/4,240 total bond ratings). This compares favorably with the previously noted 32.8% of the sample with bond ratings of Aa2. The distribution amongst the other bond rating categories appears to also compare favorably between the sample and population of bond ratings.

The incremental changes in the bond rating scale are not linear, but rather have higher incremental interest rate savings between lower bond rating scale improvements (e.g., A to AA), then changes between higher bond rating scale improvements (e.g., AA to AAA). Therefore, in assigning a scaled value to the bond rating, each of the incremental ordinal values (1 through 7) was subject to an inverse transformation as such a linear scale better reflects the change in incremental bond rating changes. Refer to Table 3.6: Bond Rating Scales of Three Primary Rating Agencies and Figure 3.2: Adjusted Bond Rating Scale for further information regarding scale and data coding.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Rating</td>
<td>55</td>
<td>23.1</td>
<td>23.1</td>
<td>23.1</td>
</tr>
<tr>
<td>&lt;A</td>
<td>4</td>
<td>1.7</td>
<td>1.7</td>
<td>24.8</td>
</tr>
<tr>
<td>A</td>
<td>24</td>
<td>10.1</td>
<td>10.1</td>
<td>34.9</td>
</tr>
<tr>
<td>Aa3</td>
<td>44</td>
<td>18.5</td>
<td>18.5</td>
<td>53.4</td>
</tr>
<tr>
<td>Aa2</td>
<td>60</td>
<td>25.2</td>
<td>25.2</td>
<td>78.6</td>
</tr>
<tr>
<td>Aa1</td>
<td>29</td>
<td>12.2</td>
<td>12.2</td>
<td>90.8</td>
</tr>
<tr>
<td>Aaa</td>
<td>22</td>
<td>9.2</td>
<td>9.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>238</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Table 3.11: Type of Local Governments (control variable) illustrates the distribution between cities, counties and other (includes towns, villages, boroughs, districts). As the sample had 14 counties (5.9% of the total sampled), it compares favorably with the total population whereby counties represent 7.8% of the total local governments. As states classify cities, towns, villages, boroughs in different manners for statistical tracking in census data, the sample’s classification of city was only noted when the term “city” was part of the local government name; otherwise it was classified as “other.” The differentiation between county and city-other is a more important distinction as there are counties that may perform a variety of law enforcement services within their overlapping cities, towns, villages and boroughs rather than overlapping jurisdictions amongst the non-counties.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>City</td>
<td>191</td>
<td>80.3</td>
<td>80.3</td>
<td>80.3</td>
</tr>
<tr>
<td>County</td>
<td>14</td>
<td>5.9</td>
<td>5.9</td>
<td>86.1</td>
</tr>
<tr>
<td>Other</td>
<td>33</td>
<td>13.9</td>
<td>13.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>238</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.12: Non-Right-to-work States (control variable) indicates a distribution by state between right-to work states (46.2% of sample) and those states without right-to-work provisions (53.8% of sample). Generally, the differentiation is that in non-right-to-work states, the state laws are more favorable towards the collective bargaining process and/or related workforce classification practices for public and private sector workers.
Previously, Figure 2.4: Right-to-Work States Map illustrated 23 states (46.0% of total) with right-to-work classification and 27 without such classification (54.0% of total). Based upon the close proximity between the sample’s distribution between these two classifications and the population of all states, it appears the sample is representative in this control variable.

<table>
<thead>
<tr>
<th>Table 3.12: Non-Right-to-work States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>Right-to-Work</td>
</tr>
<tr>
<td>Valid Non-Right-to-Work</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Descriptive Tabulations

Descriptive tabulation is a SPSS statistical term used to capture traits about a sample variable. Generally, it measures the minimum, maximum, median and standard deviation of a data set. While frequencies in the previous section help determine correlations of nominal or ordinal data of sample to population, descriptive tabulations help determine correlations of sample variables that are classified as “scale.” For the purposes of this section, Table 3.13: Other Control Variables Descriptive Statistics captures seven other control variables that are classified as “scale.” For each of these control variables, a brief analysis of comparison of the sample that yielded these statistics to the total population follows the table.
Table 3.13: Other Control Variables Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>Population (000)</th>
<th>Bond Rating Adj Scale</th>
<th>High School Graduates</th>
<th>Median HH Inc (000)</th>
<th>Density</th>
<th>Unemployment Rate</th>
<th>Age15to24%</th>
<th>Survey-Quality of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>86.81</td>
<td>1.1827</td>
<td>.8915</td>
<td>59.03</td>
<td>2378.68</td>
<td>.0784</td>
<td>.1566</td>
<td>.7556</td>
</tr>
<tr>
<td>N</td>
<td>238</td>
<td>238</td>
<td>238</td>
<td>238</td>
<td>238</td>
<td>238</td>
<td>238</td>
<td>238</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>156.589</td>
<td>.69472</td>
<td>.06234</td>
<td>21.716</td>
<td>1615.734</td>
<td>.02700</td>
<td>.09233</td>
<td>.15846</td>
</tr>
</tbody>
</table>

- Population (000): Nationally, the mean population amongst all local governments is 7,900 or amongst all local law enforcement organizations are 19,789. The larger sample mean of 86,814 population is mainly attributable to the many small cities and towns that would not meet thresholds to initiate a citizen’s survey as previously noted. However, in converting this variable to a more comprehensible variable in the statistical analysis, population is divided by 1000 which yields a mean of 86.8.

- Bond Rating Adjusted Scale: As previously noted in converting the bond rating scale to a more representative interval between bond ratings (Table 3.6: Bond Rating Scales of Three Primary Rating Agencies), an inverse transformation was performed. The mean of this adjusted scale is 1.18 (which is slightly higher than a bond rating of A (at 1.10) and further below that of the next higher rating of AA3 (at 1.39).

- High School Graduates: Nationally, the mean high school graduate portion of the population is 85.4% (US Census, 2012) which compares to the sample mean of 89.1% (shown in SPSS analysis as .891).
- **Median Household Income**: Nationally, the median household income of $52,762 (US Census, 2012) compares to the sample mean of $59,026. However, in converting this variable to a more comprehensible variable in the statistical analysis, median household income is divided by 1000 which yields a mean of 59.0.

- **Density**: Nationally, the mean density of the United States is 87 persons per square mile (US Census, 2012) which compares to the sample mean of 2,378. The disparate nature of this comparison is most likely the result of such large land acreage and rural areas outside of traditional cities and towns; however, additional statistical analysis relating to this variance in regards to this measure is not readily available.

- **Unemployment Rate**: Nationally, the mean unemployment rate is 9.9% (US Census, 2012) which compares to the sample mean of 7.8% (shown in SPSS analysis as .078). The differential between these two statistics may be attributable to the sample not including the local governments where unemployment characteristics were higher and volatile during the recessionary times during the 2010 census. Another example may include larger cities, which were adversely impacted during the recession and significantly influence the national unemployment rate, but were not generally part of the sample. For example, the top three cities in the sample population only ranked 9th, 11th and 27th amongst the top populated cities (US Census, 2012).
• Age 15-24%: Nationally, the % of the population between 15-24 years of age is 14.7% (Nationsencyclopedia.com, 2013) which compares to the sample mean of 15.7% (shown in SPSS analysis as .157).

• Survey – Quality of Life: The mean result of the sample’s survey question in regards to quality of life illustrated a mean 75.7% favorable rating (shown in SPSS analysis as .757). As there is no overall quality of life survey question measure amongst local governments, comparison to this statistic to national indicators is not possible.

Based upon the preceding comparisons, it appears that the control variables in the sample reflect well compared to the population’s similar variables; unless otherwise noted. For those that had larger differentials between the sample median and the total population’s median or comparable statistic (e.g., population, density and unemployment rate), additional information was provided to rationalize such differential. Therefore, based upon the statistical information yielded in the preceding section’s frequency tabulations and this section’s descriptives tabulation, it appears that the sample size is a representative subgroup of the variable traits of the population. This representativeness will further validate that the sample’s research in testing the null hypothesis can be translated to the population regarding correlations, but as noted previously, not causations. This also further illustrates the reliability and validity of the sample data in performing such research.
In addition, based upon the preceding analysis of all of the control variables (via VIF analysis), it appears that there is no bias in the sample in regards to socio-economic and related factors between the varying levels of workforce classification and the underlying samples in each of these classifications.
CHAPTER 4
FINDINGS

Background

The examination of correlation, if any, between law enforcement workforce classification and performance, costs and associated HPRC was performed in Chapter 4 – Findings. Though SPSS linear regression, statistical analysis was performed for each of the dependent variables compared to the independent and control variables.

The control variables were accumulated and analyzed in helping determine the comparability of data amongst the three independent variable classifications (associated with workforce classification): 1) Non-collective bargaining (what the following variables of mediation and arbitration are being compared to); 2) Collective bargaining through mediation (included in the model); and 3) Collective bargaining through mandatory arbitration (included in the model).

The control variables were reviewed to determine the representativeness of the sample to the entire population of local law enforcement organizations. This was accomplished via two manners: Research design control and statistical control. For research design control, a representative cross-section of many types of localities was selected (as the entire data set of National Citizen Survey participants was utilized) so that the results are more generalizable to the whole population of localities. For statistical control, the various control variables were specifically selected (e.g.,
population, bond ratings, density) and statistically analyzed to ensure that such variables are not linked to the differences between results of the hypothesis being tested (performance, cost, and high performance return on costs).

As the hypotheses are the basis from which this research is conducted and findings are emulated, they are illustrated again below:

- Law Enforcement Performance Hypotheses (1)
  - Hypothesis 1A: Positive relationship between law enforcement workforce classification of arbitration and higher performance attributes when compared to non-collective bargaining
  - Hypothesis 1B: Positive relationship between law enforcement workforce classification of mediation and higher performance attributes when compared to non-collective bargaining

- Law Enforcement Cost Hypotheses (2)
  - Hypothesis 2A: Positive relationship between law enforcement workforce classification of arbitration and higher costs when compared to non-collective bargaining
  - Hypothesis 2B: Positive relationship between law enforcement workforce classification of mediation and higher costs when compared to non-collective bargaining

- Law Enforcement Higher Performance Return on Costs Hypotheses (3)
  - Hypothesis 3A: Positive relationship between law enforcement workforce classification of arbitration and higher performance return on costs composite measure when compared to non-collective bargaining
  - Hypothesis 3B: Positive relationship between law enforcement workforce classification of mediation and higher performance return on costs composite measure when compared to non-collective bargaining

As part of the findings, the results may be based upon the result of random chance rather than an actual relationship between the variables; therefore the hypothesis is neither proven nor rejected as part of this research. Because the research
is focused on correlation (positive or negative relationship) and not causation, the hypothesis cannot be confirmed as definitively true or false (SPSS, 2009). Rather, a null hypothesis (no relationship) is formulated that will either be rejected or fail to be rejected as that is the only manner of supporting a hypothesis – by refuting (nullifying) a null hypothesis (McDonald, 2009). A deductive valid rejection of a null hypothesis may occur, yet not achieve a deductively valid affirmation of it. The examination of how all of these variables are possibly correlated or not is the goal of this research and possible considerations of future research if certain correlations emerge. Therefore, the following null hypotheses have been formulated:

- **Law Enforcement Performance Null Hypotheses (1)**
  - **Null Hypothesis 1A:** No relationship between law enforcement workforce classification of arbitration and higher performance attributes when compared to non-collective bargaining
  - **Null Hypothesis 1B:** No relationship between law enforcement workforce classification of mediation and higher performance attributes when compared to non-collective bargaining

- **Law Enforcement Cost Null Hypotheses (2)**
  - **Null Hypothesis 2A:** No relationship between law enforcement workforce classification of arbitration and higher costs when compared to non-collective bargaining
  - **Null Hypothesis 2B:** No relationship between law enforcement workforce classification of mediation and higher costs when compared to non-collective bargaining

- **Law Enforcement Higher Performance Return on Costs Null Hypotheses (3)**
  - **Null Hypothesis 3A:** No relationship between law enforcement workforce classification of arbitration and higher performance return on costs composite measure when compared to non-collective bargaining
  - **Null Hypothesis 3B:** No relationship between law enforcement workforce classification of mediation and higher performance return on costs composite measure when compared to non-collective bargaining
Dependent Variables Mean and Standard Deviation

In order to gauge the impact of a unit change from the various independent and control variables upon the effect of the three dependent variables, Table 4.1: Dependent Variables Mean and Standard Deviation illustrates the mean for each of the dependent variables. The performance composite measure mean is 46.7, law enforcement expenses per capita mean is $236.32 and the high performance return on costs (HPRC) mean is 27.3. For purposes of evaluating, performance composite measures higher than the mean are higher measures (higher performance), law enforcement expenses per capita below the mean are better measures (lower cost) and HPRC ratios higher than mean are better measures (higher ratio). The standard deviations amongst all three of the variables also illustrate a good variance amongst the data to be tested.

Table 4.1: Dependent Variables Mean and Standard Deviation

<table>
<thead>
<tr>
<th>Report</th>
<th>PerformComposite</th>
<th>LE Exp per Capita</th>
<th>HPRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>46.4790</td>
<td>236.32</td>
<td>27.2854</td>
</tr>
<tr>
<td>N</td>
<td>238</td>
<td>238</td>
<td>238</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>13.24954</td>
<td>97.827</td>
<td>35.93457</td>
</tr>
</tbody>
</table>

The subsequent coefficient tables computed will illustrate the effect of a one unit change (noted as B) in the variable leads to a “factor” variable change in the dependent variable under review. This can also be illustrated in the sample equation y (dependent
variable under review) = a (constant) + b₁X₁ (mediation independent variable) + b₂X₂ (arbitration independent variable). The t score = b/standard error and is correlated to the significance with any scores <.05 viewed as a significant as it correlates to a 95% confidence level. For significance factors > .05, no further analysis was performed as any other calculated results are more probable to have occurred by chance and not by correlation.

Each of the three hypotheses subject areas, each having two hypothesis statements per subject area, will be addressed separately. As the first subject area set of hypotheses focuses on performance and the second set focuses on cost, the third set focus on the correlation between performance and cost via high performance return on costs (HPRC). As each of the statistical tables are able to capture the A and B subject areas of the hypothesis for each of the hypotheses subject areas, there is only one statistical analysis needed per subject area as all of the non-independent variables can be analyzed as part of one analysis. This is because the all of the data output statistics for the non-independent variables result us the same numbers being generated. However, the A and B independent variables of each hypothesis, arbitration (A) and mediation (B), will each be analyzed via narrative analysis separately in testing of the null hypothesis.
Hypotheses 1A and 1B: Findings and Null Hypothesis Testing

**Hypothesis 1A:** Positive relationship between law enforcement workforce classification of arbitration and higher performance attributes when compared to non-collective bargaining

- **Null Hypothesis 1A:** No relationship between law enforcement workforce classification of arbitration and higher performance attributes when compared to non-collective bargaining

**Hypothesis 1B:** Positive relationship between law enforcement workforce classification of mediation and higher performance attributes when compared to non-collective bargaining

- **Null Hypothesis 1B:** No relationship between law enforcement workforce classification of mediation and higher performance attributes when compared to non-collective bargaining

As noted in Chapter 3 – Research Design and Methodology, the composite performance measure (includes survey, crime rates (violent and property) and accreditation factors) was calculated for each of the local governments in the sample. This composite performance measure was then analyzed via SPSS linear regression.

Table 4.2: Composite Performance Measure illustrates the following:

- **Model Summary** – r square: .603 which indicates on average the model's predictions are 60% better than guessing the mean. The small variance between the r square (.603) and adjusted r square (.580) are also indicative of good model of data producing results (adjusted r square is 3.8% less than r square).
- **ANOVA** – F value: 26.223 and significance of .000 which indicates that the overall model produces better results than simply guessing the mean.
VIF: The variance inflation factor examines the underlying relationship amongst the variables. Low scores indicate that the independent variables are not heavily inter-correlated. High inter-correlation can impact the standard errors.

Coefficients:

- Significant (<.05): Median household income, density, age, survey quality, city, county and mediation all appear to be significant.
- Standardized coefficient – Beta and t-statistic (of those noted as significant) are listed in the following order of greatest relationship:
  - Median household Income ($000) (beta .389 and t-statistic 5.985) with an unstandardized coefficient B of .24 indicates that for every unit change of $1000 in the median household income (mean 59.0 ($000) or $59,000), there is a .24 increase in the composite performance index (mean 46.5).
  - Survey Quality of Life (beta .363 and t-statistic 5.354) with an unstandardized coefficient B of 30.363 indicates that for every unit change of 1 in the survey – quality of life score (mean .76); there is a 30.363 increase in the composite performance index (mean 46.5). A better way to illustrate is for every unit change of .1 (10%) in survey quality of life score, there is a 3.0 increase to the composite performance index.
  - Age (beta .170 and t-statistic 3.461) with an unstandardized coefficient B of 24.5 indicates that for every unit change of 1 in age
15-24% (mean .16); there is a 24.5 increase to the composite performance index (mean 46.5). A better way to illustrate is for every unit change of .1 (10%) in age 15-24%, there is a 2.5 increase to the composite performance index. This result may appear to be counter-intuitive as it was previously noted a correlation of this age bracket and higher probability for crimes committed. However, other mitigating circumstances may lend themselves to higher performance. Examples could include: 1) Higher proportion in an older age bracket; or 2) More citizen-friendly survey responses for those in portion of age bracket (21-25).

- City (beta -.155 and t-statistic -3.036) with an unstandardized coefficient B of -5.2 indicates that cities, on average, have a 5.2 lower composite performance index (mean 46.5) when compared to towns.

- Density (beta -.146 and t-statistic – 2.977) with an unstandardized coefficient B of -.001 indicates that for every unit change of 1 in density (mean 2378.7); there is a decrease to the composite performance index (mean 46.5) of -.001. A better way to illustrate is for every unit change of 100 in density there is a decrease to the composite performance index of -.1.
Mediation – Hypothesis 1B (beta -.126 and t-statistic -2.247) with an unstandardized coefficient B of -3.49 indicates that mediation localities, on average, have a 3.49 lower composite performance index (mean 46.5) when compared to non-collective bargaining localities and 4.98 lower composite index when compared to arbitration and its 1.49 increased composite performance index.

As median household incomes, survey – quality of life scores or age 15-24% of population increases, the composite performance score of law enforcement services also increase. This means some combination of higher favorable rating on law enforcement survey questions on how safe does a citizen feel, lower violent or property crimes; or law enforcement national accreditation pursuit or attainment has occurred. This may be due to overall abilities of higher income and quality of life attributes mitigate crime from occurring and/or enable law enforcement to perform at a higher level whereas the age factor may also represent a more family-friendly area in deterring crime. The inverse relationship exists for density in that as population density increases, the composite performance score of law enforcement decreases. This may be due to the challenges of performance for higher density areas in the calls for service that may result from citizens interacting in closer proximity. There also appears to be a contrast between cities and counties with cities decreasing the composite measure score when compared to towns. This may be due to how citizens are exposed to law enforcement and its ability to deter crime at a greater rate in the towns than in the cities. However, further research would need to be done in order to further isolate determining factors for
why these relationships of variables to increased or decreased composite performance measures exist.

In regards to workforce classification, mediation (Hypothesis 1B) has a decreased composite performance measure. All of the other variables were not significant enough to warrant any further analysis in regards to relationship to composite performance measure. There may be some determining factor localities with a mediation possess to warrant a decreased composite performance measure (e.g., workforce constraints to adopt low crime rate strategies; accreditation pursuit lacking; and/or engaging and informing their citizens of safety-quality measures and related survey question measures). As an example, law enforcement organizations with mediation workforce classification may not have gained the confidence of their citizens in addressing crime as well as non-collective bargaining or arbitration localities. This may be because the general population of such localities does not share the same workforce classification status as those in the law enforcement organization and therefore, may not empathize as well in how such challenges are addressed. While it may be a challenge to control these factors, surveys may gauge the sentiment of citizens in mediation and non-mediation localities to determine what may be correlation of mediation to lower composite performance index. Rational Choice Theory attributes (e.g., employee motivation) may also be less present in mediation localities. However, further research would need to be done in order to further isolate determining factors for why this relationship of mediation to decreased composite performance measure exists.
In addition, arbitration (Hypothesis 1A) is positive with its increased composite performance measure, even though it was above the .05 significance threshold set for further review. This means that arbitration is viewed more favorably than mediation and non-collective bargaining, and while arbitration is not statistically different from non-collective bargaining, it does appear to be statistically different from mediation.
### Table 4.2: Composite Performance Measure

#### Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
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<td>.580</td>
<td>8.58202</td>
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</tbody>
</table>

*a. Predictors: (Constant), Arbitration, Survey-Quality of Life, Age15to24%, County Local Govt, Bond Rating Adj Scale, Density, Population (000), City Local Govt, Unemployment Rate, Meditation, Right-to-Work State, High School Graduates, Median HH Inc (000)*

#### ANOVA²

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>25107.560</td>
<td>13</td>
<td>1931.351</td>
<td>26.223</td>
<td>.000²</td>
</tr>
<tr>
<td>1</td>
<td>Residual</td>
<td>16497.835</td>
<td>224</td>
<td>73.651</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>41605.395</td>
<td>237</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*b. Predictors: (Constant), Arbitration, Survey-Quality of Life, Age15to24%, County Local Govt, Bond Rating Adj Scale, Density, Population (000), City Local Govt, Unemployment Rate, Meditation, Right-to-Work State, High School Graduates, Median HH Inc (000)
### Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>12.558</td>
<td>10.898</td>
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<td>.250</td>
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<td>Population (000)</td>
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<td>.004</td>
<td>-.015</td>
<td>-.300</td>
<td>.764</td>
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<tr>
<td>Bond Rating Adj Scale</td>
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<td>.032</td>
<td>.696</td>
<td>.487</td>
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<tr>
<td>High School Graduates</td>
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<td>.211</td>
<td>.833</td>
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<td>Median HH Inc (000)</td>
<td>.238</td>
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<td>.389</td>
<td>5.965</td>
<td>.000</td>
</tr>
<tr>
<td>Density</td>
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<td>.000</td>
<td>-.146</td>
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<td>.003</td>
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<tr>
<td>Unemployment Rate 1</td>
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<td>27.396</td>
<td>-.055</td>
<td>-9.89</td>
<td>.324</td>
</tr>
<tr>
<td>Age15to24%</td>
<td>24.451</td>
<td>7.065</td>
<td>.170</td>
<td>3.461</td>
<td>.001</td>
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<tr>
<td>Survey-Quality of Life</td>
<td>30.363</td>
<td>5.670</td>
<td>.363</td>
<td>5.354</td>
<td>.000</td>
</tr>
<tr>
<td>Non Right-to-Work State</td>
<td>-.957</td>
<td>1.504</td>
<td>-.036</td>
<td>-6.36</td>
<td>.525</td>
</tr>
<tr>
<td>City (v. Town)</td>
<td>-5.158</td>
<td>1.699</td>
<td>-.155</td>
<td>-3.036</td>
<td>.003</td>
</tr>
<tr>
<td>County (v. Town)</td>
<td>5.272</td>
<td>3.066</td>
<td>.094</td>
<td>1.720</td>
<td>.087</td>
</tr>
<tr>
<td>Med (v. NCB (b))</td>
<td>-3.485</td>
<td>1.551</td>
<td>-.126</td>
<td>-2.247</td>
<td>.026</td>
</tr>
<tr>
<td>Arb (v. NCB (b))</td>
<td>1.486</td>
<td>1.801</td>
<td>.054</td>
<td>.825</td>
<td>.410</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Perform Composite  
b. NCB (Non-collective bargaining)

Based upon the preceding statistical tests, which illustrated a correlation of mediation to a lower composite performance measure, it would appear that the null hypothesis 1B can be rejected as there appears to be a relationship between law enforcement workforce classification of mediation and higher (or lower) performance attributes. Rejection of the null hypothesis does not confirm the hypothesis. For hypothesis 1A, because there was no such statistically significant correlation as it
pertains to arbitration and higher (or lower) performance attributes, the null hypothesis 1A cannot be rejected.

**Hypotheses 2A and 2B: Findings and Null Hypothesis Testing**

**Hypothesis 2A:** Positive relationship between law enforcement workforce classification of arbitration and higher costs when compared to non-collective bargaining

- **Null Hypothesis 2A:** No relationship between law enforcement workforce classification of arbitration and higher costs when compared to non-collective bargaining

**Hypothesis 2B:** Positive relationship between law enforcement workforce classification of mediation and higher costs when compared to non-collective bargaining

- **Null Hypothesis 2B:** No relationship between law enforcement workforce classification of mediation and higher costs when compared to non-collective bargaining

Whereas hypotheses 1 were capturing the correlation, if any, between the classification of the workforce and a variety of performance measure attributes, hypotheses 2 captures the correlation between classification of the workforce and law enforcement costs per capita. Table 4.3: Law Enforcement Costs per Capita illustrates the following via SPSS linear regression:

- **Model Summary - r square:** .187 which indicates on average the model's predictions are 18% better than guessing the mean; which is considered a low prediction rate (note Hypothesis 1 had a 60% rate). The variance between the r square (.187) and adjusted r square (.139) is actually a large variance (unfavorable), with adjusted r square 25.7% below r square (whereas Hypothesis 1 had a variance of 3.8%). This may be correlated to the number of insignificant variables being examined as part of this analysis as the greater number of
variables added, the greater the chance of a larger spread between r-square and adjusted r-square. Based upon this low r square and large variance, another regression was conducted removing those insignificant variables that had a significance factor > .250 in hopes that such significance variables were impacting the adjusted r square. However, this resulted in only slightly improved results - r square (.181) and adjusted r square (.152) with a high 16.0% variance. Based upon this large variance, additional regression analyses were conducted changing variables (e.g., lowering significance factor further to remove other variables, changing composite of variables included in analysis) in hopes that certain variables were impacting the results in producing a large variance between r square and adjusted r square. However, there was an inability to make improvements to the adjusted r square variance. Based upon these factors, the model is not necessarily parsimonious from a statistical analysis (i.e., only slightly better than guessing the mean). Therefore, the output for hypotheses 2 results carry caveat of low r square and poor model and should not be overly relied upon as part of a statistical analysis.

- ANOVA – F value: 3.95 and significance of .000 which indicates that the overall model produces better results than simply guessing the mean.
- VIF: The variance inflation factor examines the underlying relationship amongst the variables. The low scores indicate that the independent variables are not heavily inter-correlated. High inter-correlation can impact the standard errors.
• Coefficients:

  o Significant (<.05): Non-right-to-work state, county and arbitration all appear to be significant.

  o Standardized coefficient – Beta and t-score (of those noted as significant) are listed in the following order of greatest relationship:

    ▪ Non-right-to-work state (beta .340 and t-statistic 4.190) with an unstandardized coefficient B of 66.6 indicates that for non-right-to-work states there is a $66.62 increased cost to the law enforcement cost per capita (mean $236.30) when compared to right-to-work states.

    ▪ Arbitration – Hypothesis 2A (beta -.254 and t-statistic -2.701) with an unstandardized coefficient B of -51.43 indicates that arbitration localities, on average, have a $51.43 deceased cost to law enforcement costs per capita (mean $236.30) when compared to non-collective bargaining localities and $72.67 decreased cost when compared to mediation and its $21.24 increased cost to law enforcement costs.

    ▪ County (beta -.189 and t-statistic -2.413) with an unstandardized coefficient B of -78.24 indicates that counties have a $78.25 decreased cost to law enforcement costs per capita (mean $236.30) when compared to towns.
Therefore, for those localities with law enforcement arbitration when compared to the other workforce classifications or are a county when compared to towns, there is a relationship to either of those statuses and decreased law enforcement costs per capita. For non-right-to-work states, there is a relationship to increased law enforcement costs. All of the other variables were not significant enough to warrant any further analysis in regards to relationship to law enforcement costs.

Reasons supporting a lower cost environment for arbitration could be attributable to sensitivity to union-negotiated practices regarding compensation and benefits that other facets of operations (e.g., vehicle replacements, equipment, training) may be lower than other localities. There may also be practices existing in arbitration localities that through their empowered union, they may not be as susceptible to political or other distractions in provision of law enforcement services and its related costs (e.g., hiring additional personnel). Rational Choice Theory attributes (e.g., efficiency in rational goal attainment) may also be more present in arbitration localities. There may also be reasons for non-right-to-work states that support a higher cost environment and counties that support a lower cost environment (e.g., states with greater union-friendly practices may have higher service costs whereas counties may be able to run more efficiently without urban challenges). However, further research would need to be done in order to further isolate determining factors for why this relationship of arbitration to decreased law enforcement costs per capita exists as well as the relationships of non-right-to-work states and counties.
Table 4.3: Law Enforcement Costs Per Capita

**Model Summary**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>.187</td>
<td>.139</td>
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</table>

a. Predictors: (Constant), Arbitration, Survey-Quality of Life, Age15to24%, County Local Govt, Bond Rating Adj Scale, Density, Population (000), City Local Govt, Unemployment Rate, Meditation, Right-to-Work State, High School Graduates, Median HH Inc (000)

**ANOVAa**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
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<tr>
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<tr>
<td>1</td>
<td>1844989.359</td>
<td>224</td>
<td>8236.560</td>
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<tr>
<td>Residual</td>
<td>2268113.731</td>
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<td></td>
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<tr>
<td>Total</td>
<td>2268113.731</td>
<td>237</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Law Enfor Exp per Capita
b. Predictors: (Constant), Arbitration, Survey-Quality of Life, Age15to24%, County Local Govt, Bond Rating Adj Scale, Density, Population (000), City Local Govt, Unemployment Rate, Meditation, Right-to-Work State, High School Graduates, Median HH Inc (000)
### Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>(Constant)</td>
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<td>.119</td>
<td></td>
</tr>
<tr>
<td>Population (000)</td>
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<td>.043</td>
<td>-.039</td>
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<td>.571</td>
</tr>
<tr>
<td>Bond Rating Adj Scale</td>
<td>13.747</td>
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<td>.098</td>
<td>1.503</td>
<td>.134</td>
</tr>
<tr>
<td>High School Graduates</td>
<td>36.611</td>
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<td>.258</td>
<td>.797</td>
</tr>
<tr>
<td>Median HH Inc (000)</td>
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<td>.421</td>
<td>-.049</td>
<td>-522</td>
<td>.602</td>
</tr>
<tr>
<td>Density</td>
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<td>.004</td>
<td>.080</td>
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<td>.255</td>
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<td>Unemployment Rate</td>
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<td>1.216</td>
<td>.225</td>
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<tr>
<td>Age15to24%</td>
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<tr>
<td>Survey-Quality of Life</td>
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<tr>
<td>Non Right-to-Work State</td>
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<td>.340</td>
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<td>.000</td>
</tr>
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<td>City (v. Town)</td>
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<td>-.099</td>
<td>-1.351</td>
<td>.178</td>
</tr>
<tr>
<td>County (v. Town)</td>
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<td>.017</td>
</tr>
<tr>
<td>Med (v. NCB)</td>
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<td>1.325</td>
<td>.186</td>
</tr>
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<td>Arb (V. NCB)</td>
<td>-51.435</td>
<td>19.044</td>
<td>-.254</td>
<td>-2.701</td>
<td>.007</td>
</tr>
</tbody>
</table>

a. Dependent Variable: LE Exp per Capita

Based upon the preceding statistical tests, which illustrated a correlation of arbitration to decreased law enforcement costs per capita, it would appear that the null hypothesis 2A can be rejected as there appears to be a relationship between an element of law enforcement workforce classification (arbitration) and law enforcement costs per capita (does not confirm the hypothesis). Because of the inability of the statistical tests to illustrate a correlation of mediation to increased (or decreased) law
enforcement costs per capita, it would appear that the null hypothesis 2B cannot be rejected.

As noted, because of the low r square and large variance to adjusted r square, the variability amongst the data has given rise to a model that may be only slightly better than guessing the mean; even after removing low significance variables from data output analysis in attempting to lower the variance between r square and adjusted r square. Therefore, the results appropriately disclose this challenge to the model and would require further research to best ascertain other variables, if any, that may produce a more parsimonious model. However, such low r squares may also be indicative of a null hypothesis that may fail to be rejected on the underlying data.

Hypotheses 3A and 3B: Findings and Null Hypothesis Testing

Hypothesis 3A: Positive relationship between law enforcement workforce classification of arbitration and higher performance return on costs composite measure when compared to non-collective bargaining

- Null Hypothesis 3A: No relationship between law enforcement workforce classification of arbitration and higher performance return on costs composite measure when compared to non-collective bargaining

Hypothesis 3B: Positive relationship between law enforcement workforce classification of mediation and higher performance return on costs composite measure when compared to non-collective bargaining

- Null Hypothesis 3B: No relationship between law enforcement workforce classification of mediation and higher performance return on costs composite measure when compared to non-collective bargaining
The goal of the hypothesis 3 is to calculate and then analyze a high performance return on costs (HPRC) from the data variables in the two previous hypotheses. From the HPRC quantified factor for each locality (composite performance measure/law enforcement costs per capita), a statistical analysis can be performed of this factor and the classification factor of the workforce.

In performing the statistical analysis initially using the same control variables in the prior hypothesis tests, many of these variables resulted in high “significance” results which indicate high correlations of inapplicability of such variables amongst the data set. This may have also given rise to large variance between adjusted $r$ square and $r$ square (81.8%). Appendix H – Hypotheses 3 Full Variable Result Table provides the result of such initial statistical analysis. In trying to negate the effects of such irrelevant variables, the statistical analysis for hypotheses 3 was refined to include those control variables with a lower rate of risk on the analysis. A threshold of significance use for a revised set of control variables, included in this section’s analysis, included only those below a significance of .250 (high school graduates, median household incomes, non-right-to-work states and county government).

Table 4.4: High Performance Return on Costs illustrates the following via SPSS linear regression:

- Model Summary - $r$ square: .056 which indicates on average the model's predictions are 5% better than guessing the mean. This a very low percentage which reflects that there is not much difference between predictions and guessing the mean. The variance between the $r$ square (.056) and adjusted $r$
square (.031) is actually a large variance (unfavorable), with adjusted r square 44.6% below r square (whereas Hypotheses 1 had a variance of 3.8%, but an improvement from the initial Hypotheses 3 variance of 81.8% as noted in Appendix H). This may be correlated to the number of variables being examined as part of this analysis as the greater number of variables added, the greater the chance of a larger spread between r-square and adjusted r-square. Based upon this large variance, additional regression analyses were conducted by changing variables (e.g., lowering significance factor further to remove other variables, changing composite of variables included) in hopes that certain variables were impacting the results in producing a large variances between r square and adjusted r square. However, there was an inability to make improvements to the r square and adjusted r square variance. Based upon these factors, the model is not necessarily good from a statistical analysis (i.e., only slightly better than guessing the mean). Therefore, the output for hypothesis 3 results carry caveat of low r square and high variance with adjusted r square; which results in a model that is not robust and should not be overly relied upon as part of a statistical analysis.

- ANOVA – F value: 2.268 and significance of .038 which indicates that the overall model produces better results than simply guessing the mean.
- VIF: The variance inflation factor examines the underlying relationship amongst the variables. The low scores indicate that the independent variables are not heavily inter-correlated. High inter-correlation can impact the standard errors.
Coefficients:

- Significant (<.05): Median household income and county appears to be significant.

- Standardized coefficient – Beta and t-score (of those noted as significant) are listed in the following order of greatest relationship:
  - Median Household Income ($000) (beta .190 and t-statistic 2.400) with an unstandardized coefficient B of .314 indicates that for every unit change of $1000 in the median household income (mean 59.0 ($000) or $59,000), there is a .314 increase in the HPRC index (mean 27.28).
  - County (beta .159 and t-statistic 2.426) with an unstandardized coefficient B of 24.156 indicates that counties have a 24.156 increase in the HPRC index (mean 27.28) when compared to towns.

Therefore, as median household incomes increases, the HPRC index for law enforcement services also increases. This may indicate that higher median household income localities enable a lower costing law enforcement organization to also perform better as there are less opportunities for crime to occur, more time dedicated to accreditation and/or a higher survey satisfaction rate. This may also be the result that higher median household incomes also may follow better practices of crime reduction strategies (e.g., securing their households and vehicles better; contacting law enforcement about suspicious activity or crime alert hotline tips; or be less positioned to
commit crimes because of higher incomes). There is also a correlation of counties having an increased HPRC index when compared to other (e.g., towns). This may be the result of counties without the urban challenges faced in many cities or towns being able to perform better at a lower cost. Further research would be necessary to determine what, if any, of these potential underlying scenarios for median household incomes and counties could yield HPRC. All of the other variables were not significant enough to warrant any further analysis in regards to relationship to HPRC.

Table 4.4: High Performance Return on Costs

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>.236a</td>
<td>.056</td>
<td>.031</td>
<td>35.37148</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Arb, Median HH Inc (000), County Local Govt, High School Graduates, Med, Non Right-to-Work State

<table>
<thead>
<tr>
<th>ANOVAa</th>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
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</tr>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: HPRC
b. Predictors: (Constant), Arb, Median HH Inc (000), County Local Govt, High School Graduates, Med, Non Right-to-Work State
<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>(Constant)</td>
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</tr>
<tr>
<td>High School Graduates</td>
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<td>-.102</td>
<td>-1.314</td>
<td>.190</td>
</tr>
<tr>
<td>Median HH Inc (000)</td>
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<td>.131</td>
<td>.190</td>
<td>2.400</td>
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</tr>
<tr>
<td>Non Right-to-Work State</td>
<td>-7.748</td>
<td>6.046</td>
<td>-.108</td>
<td>-1.282</td>
<td>.201</td>
</tr>
<tr>
<td>County (v. Town)</td>
<td>24.156</td>
<td>9.957</td>
<td>.159</td>
<td>2.426</td>
<td>.016</td>
</tr>
<tr>
<td>Med (v. NCB)</td>
<td>.354</td>
<td>6.094</td>
<td>.005</td>
<td>.058</td>
<td>.954</td>
</tr>
<tr>
<td>Arb (v. NCB)</td>
<td>5.356</td>
<td>7.294</td>
<td>.072</td>
<td>.734</td>
<td>.464</td>
</tr>
</tbody>
</table>

a. Dependent Variable: HPRC

Based upon the preceding statistical tests, which did not illustrate a correlation of workforce classification to change in HPRC index, it would appear that the null hypotheses 3 (both 3A and 3B) cannot be rejected.

As noted, because of the low r square and large variance to adjusted r square, the variability amongst the data has given rise to a model that may be only slightly better than guessing the mean; even after removing high significance variables from data output analysis in trying to lower the variance between r square and adjusted r square. Therefore, the results appropriately disclose this challenge to the model and would require further research to best ascertain other variables, if any, which may produce a better and more robust model. However, a low r-square indicates a weak model overall therefore it is difficult to draw strong conclusions even if the null hypothesis could be rejected, it would be with caution.
Hypothesis Results Summarized

Based upon the preceding statistical results, findings for each of the hypotheses can be stated.

- **Hypothesis 1A**: Positive relationship between law enforcement workforce classification of arbitration and higher performance attributes when compared to non-collective bargaining
  
  o The null hypothesis of no relationship failed to be rejected (no potential relationships identified in this research).
  
  o For control variables, potential relationships exist with median household income (positive), density (negative), age (positive), survey quality (positive) and city (negative). This applies to hypothesis 1B also.

- **Hypothesis 1B**: Positive relationship between law enforcement workforce classification of mediation and higher performance attributes when compared to non-collective bargaining
  
  o The null hypothesis of no relationship was rejected (mediation (negative)) when compared amongst non-collective bargaining as results indicate potential relationship.

- **Hypothesis 2A**: Positive relationship between law enforcement workforce classification of arbitration and higher costs when compared to non-collective bargaining
o The null hypothesis of no relationship was rejected (arbitration (negative)) when compared amongst non-collective bargaining as results indicate potential relationship.

o For control variables, potential relationships exist with non-right-to-work state (positive) and county (negative). This applies to hypothesis 2B also.

o However, because of low r squares and large variance between r square and adjusted r square, the model's output is only slightly better than guessing the mean. Even after removing variables with high significance or other traits in a variety of analysis, the variance between r square and adjusted r square were not improved. Therefore, because of the model's limitations in not being parsimonious, the preceding results may not be as valid as data output and analysis that yielded a higher r square and a lower variance to adjusted r square. This applies to hypothesis 2B also.

• **Hypothesis 2B:** Positive relationship between law enforcement workforce classification of mediation and higher costs when compared to non-collective bargaining

  o The null hypothesis of no relationship failed to be rejected (no potential relationships identified in this research).

• **Hypothesis 3A:** Positive relationship between law enforcement workforce classification of arbitration and higher performance return on costs composite measure when compared to non-collective bargaining
The null hypothesis of no relationship failed to be rejected (no potential relationships identified in this research).

For control variables, potential relationships exist with median household income (positive) and counties (positive). This also applies to hypothesis 3B.

However, because of low r squares and large variance between r square and adjusted r square, the model’s output is only slightly better than guessing the mean. Even after removing variables with high significance or other traits in a variety of analysis, the variance between r square and adjusted r square were not improved. Therefore, because of the model's limitations in not being parsimonious, the preceding results may not be as valid as data output and analysis that yielded a higher r square and a lower variance to adjusted r square. This also applies to hypothesis 3B.

- **Hypothesis 3B:** Positive relationship between law enforcement workforce classification of mediation and higher performance return on costs composite measure when compared to non-collective bargaining

  The null hypothesis of no relationship failed to be rejected (no potential relationships identified in this research).

While two of the six null hypotheses were rejected, there are observations of these research findings worthy of further discussion. As indicated in Chapter 1 –
Introduction, the advocacy groups with strong opinions about the high costs of unions and low performance results is contrasted by those advocacy groups that attribute unions as an inherent trait needed to meet a worker’s needs and provide for a safe and productive workplace towards a high performing organization. These sentiments and related research helped give rise to the problem statement, research question and hypothesis development. Because the null hypothesis was rejected two out of six times, there appears to be a possible correlation from this research between workforce classification and a law enforcement organization’s ability to perform better and at a lower cost, but no correlation in regards to higher performance return on costs (HPRC).

**Summary - Validity and Reliability of Data Variables**

As the data results were accumulated, further efforts were made to re-address validity and reliability of data variables. Validity and reliability were initially addressed in Chapter 3 – Research Design and Methodology, as validity determines whether the data is measuring what was intended to be measured and reliability determines how accurately the measuring is without the effects of potential bias. As the data variables were subjected to statistical tests in this chapter, additional data verification techniques were performed.
Validity

Construct validity, through use of independent authoritative sources of performance indicators (FBI data, budget documents, NCS citizen surveys), appears to be the proper measures. In addition, through the use of descriptive statistics (including frequency and descriptive tabulations), the sample appears to be representative of the population.

Internal validity properly demonstrates the causal relationship between two variables. With workforce classification as the independent variable and dependent variables of performance, cost and HPRC, through linear regression analysis and significance of the t test, correlations were confirmed to be either positive, negative or neither. Additional validity aspects accounted for: 1) Maturation via aligned time horizons so similar environmental conditions existed during measurement period (controlled with survey results, census and other data sources all within a 8-year period (concentrated within a 3-year period) to mitigate variances that may be associated with longer time periods of data collection); 2) Instrumental (and measurement effect) changes as measurement tools replicated throughout the study (controlled with the same manner in collecting and coding data amongst all sample localities); 3) Selection bias mitigated through consistent demographic (control variable) classification and bivariate correlation analysis performed on such variables (controlled through reliance on objective data sources and standard statistical tests of such data); and 4) Experimental mortality factors are mitigated by the relative non-transition nature of local
governments and collective bargaining agreements (controlled with continuity of local government and workforce classification statuses).

For external validity, statistical data was computed for the sample and the population in illustrating the sample’s representation through the use of many control variables. For control variables in which the population of all local governments was not easily determined to be correlated, additional analysis was performed to illustrate that the sample was actually representative of local governments that have a certain size and scope to have a fully functioning law enforcement organization. In addition, because selection of the sample was not volunteers, those external validity concerns are negated. In addition, the ability to segment similar demographic and socio-economic local governments helps mitigate relative external validity concerns. Confounded treatment effects were mitigated by focusing on the incremental changes between the dependent variable based upon the independent variable mitigating the risk of generalization of very low or high performance to an entire population of local governments. Situational effects were mitigated as the subjects are local governments and their citizens, all subject to the same scope and duration of study. Effects due to differential mortality were mitigated in a similar manner as noted under internal validity.

Reliability

Reliability is different than validity, in that reliability helps determine that what data being measured is consistently being done, whereas validity addresses the
relevance and accuracy of the data being measured. What was measured amongst the entire sample and across all of their variables were measured consistently without regard to any other factors to best address reliability. Consistency examples include the same set of survey questions (NCS) and data sources accessed (e.g., FBI, CALEA, Census) to ensure that a consistent manner to compile the data was performed throughout the data gathering and analysis process. For example, since the survey questions used were the same survey questions used amongst all of those localities sampled, there is a high degree of reliability that the response of the survey question is a measure off of the same worded question. In addition, for crime rates, the FBI has a standard process for all local governments in defining violent and non-violent crimes; therefore, there is a high degree of reliability that the data reported amongst the localities is reliable and reported in a consistent manner.

**Comparison of Findings with Other Research**

As the findings achieved in this research may be unique in reference to the assortment of independent, dependent and control variables, other research was examined for elements of these variables and their related outcomes. There were no expectations with regards to any of the results, although from an initial review of the literature and related research, there were attributes of higher personnel costs associated with collective bargaining and higher performance measures associated with more educated and higher median income areas. As you can ascertain from the previous studies noted, there is variability in the results and not one study merited all of
the traits and hypotheses that were undertaken as part of this research. Extensive searches were done to try and locate similar studies, but the combination of an array of performance measures (surveys, costs, crime indices, and accreditation) while also comparing it to levels of workforce classification were not able to be detected.

However, the following studies are a representation of other research with certain traits that are similar to enable a comparison to the findings in this research:

- Freeman and Ichinowski (1988) compared teacher unions with greater and lesser unionization with result that collective bargaining correlated higher teacher salaries and generally higher educational performance.
- Eberts and Stone (1986) used test scores to determine that union school districts have 7% higher test scores.
- Feuille, Delaney and Hendricks (1985) determined law enforcement union contracts over time favors the local law enforcement union as it becomes more empowered and influential (not a trait correlated to HPO).
- Xu (2008) indicated no significant relationship between organizational-incentives structure and high performance attributes.
- Doellgast, Holtgrewe and Deery (2009) study of private sector call centers determined that unionized call centers and in-house call centers (compared to outsourced) were associated with significantly higher measures of job quality.
- Kim and Bae (2005) examined two different Korean companies determining that there was a correlation between being unionized and innovation.
• Koper, Maguire and Moore (2001) and Valletta (1989) determined that large law enforcement organizations over time retain employees longer than smaller organizations and larger organizations also tend to be more associated with collective bargaining.

• Rees (1991) concluded that collective bargaining’s “strong voice” to an employee is considered a primary factor for lower turnover rates than non-collective bargaining law enforcement organizations.

• Kelling (1975) determined that no correlation existed between preventive patrol increases and citizen perception of law enforcement presence or personal safety, or reported crimes.

• Department of Labor (2004) indicated that local government union employees are paid 32% more than non-union local government employees.

• Wagner (2008) concluded that compensation and benefits of the union worker are better.

• Putchinisky (2007) provided evidence that unions do influence law enforcement expenditures to a substantial degree.

• Victor (1977) determined differential of union law enforcement officers and firefighters were paid 8 – 12% over their non-union counterparts.

• Zhao and Lovrich (1997) illustrated that large law enforcement organizations with collective bargaining have additional salary benefits.

• Zax (1988) cities with collective bargaining in a study have higher salaries.
For those studies (example: Freeman and Ichinowski (1988)) that compared non-law enforcement organization’s (e.g., teacher unions, private sector call centers), in which attributes of unionization and/or high performance were noted, there was no such correlation in the research performed for this project. Comparison of different types of workers with different training and related needs to perform their job function is challenging and would be subject to validity concerns. However, additional research may be needed across professions to see if there are any similar outcomes of workforce classification and HPRC and if so, are there traits of that profession that contribute to such similarity.

For those studies in which law enforcement was the research topic, the studies (example: Feuille, Delaney and Hendricks (1985)) that illustrated a correlation between a collective bargaining atmosphere and greater workforce influence, it appears that such measures in these studies do not necessarily reference high performance organization or HPRC traits, but rather other matters of workforce influence (e.g., higher pay and benefits, job protection, workplace environment conditions). This research project did not correlate workforce classification to the array of workplace topics deemed to be “influential” as its focus was on HPRC.

For those studies (examples: Koper, Maguire and Moore (2001) and Valletta (1989)), that showed a correlation between larger law enforcement organizations and collective bargaining which also was correlated to lower turnover rates, such analysis was not able to be replicated in this research. The correlations for the control variable
population and law enforcement costs per capita did not appear to be correlated to any threshold of workforce classification nor did this study consider any population density. In addition, lower turnover rates on their own merit are not necessarily of a high performance organization as the organization may be retaining underperforming workers and be labeled as “low turnover.” Whereas another organization with a higher turnover rate may be better positioning its higher performing workforce to succeed better through the dismissal of lower performing employees.

For those studies (example: Zhao and Lovrich (1997)) that determined higher compensation and benefits to the law enforcement worker with collective bargaining abilities, no such correlation was determined as part of this research. As the law enforcement costs for this research used the total costs of the law enforcement organization, it was not possible to determine the salaries and benefit costs that could be better compared to other research in this area. Perhaps if other studies indicate positive correlations of salaries and benefits to a certain level of workforce classification and the researched performed as part of this study indicate higher overall (salaries, benefits, operating and capital) law enforcement costs per capita for non-collective bargaining and mediation, but lesser costs per capita for arbitration, then perhaps variances exist between the non-salaries and benefits expenses to offset the higher salaries and benefits. Note that mediation did illustrate higher costs per capita, so further research may be needed to determine variations between these two forms of workforce classification.
For those studies (example: Kelling (1975)), that illustrated the effects, if any, of a law enforcement service increase on the effects it would have upon citizen survey responses regarding quality of service or performance results in the reduction of crime, no such correlation was determined as part of this research. Because these studies required the introduction of a variable (change in service) to be introduced and then measured by other manners (e.g., surveys, crime rate) after a period of time, this research project was focused on not changing a key variable in order for the sample data to be better examined for correlation.

Limitations of Findings

As noted previously, all research was conducted from the perspective of performance measurement data, cost efficiencies and citizen effectiveness satisfaction results. No data or information was obtained from the perspective of the employee which would identify variances between collective and non-collective bargaining localities in the manners of satisfaction of compensation, benefits and work environment. Separate research on this topic could be substantive and serve to compliment the results of this research in yielding further conclusions on this issue and further validate or challenge outcomes of the hypotheses tested as part of this research.
CHAPTER 5

SUMMARY

In this final chapter, a summary will bring closure to this research project, but hopefully position this subject area for future research as workforce classification and its role in the public sector will continue to be debated. The primary focus of this research was law enforcement organizations and their performance and costs in subjecting a high performance return on costs dependent variable to the independent variable of workforce classification. Law enforcement organizations are those charged with the responsibility of law and order in their locality and represented primarily by city and town police departments, but also may include county sheriff or other law enforcement offices. Workforce classification as described throughout this research is the differential of law enforcement’s ability to collectively bargain (or not), and if so, whether the employees have the ability to resolve impasses in negotiation through mediation (employer-preferred if there is collective bargaining) or the more employee-favored mandatory arbitration.

This summary is divided into many sections that are representative of the preceding four chapters. A Background illustrates the environment that has given rise to the development of a problem statement and research question. Theoretical Framework provides the Rational Choice Theory lens that was used throughout this research in developing the six hypothesis statements (two statements in each of the three subject areas), selecting the appropriate variables, correlating the review of literature and
interpreting the results. Research Design and Methodology provides an overview of the independent (workforce classification), dependent (performance, cost and high performance return on costs (HPRC) measures) and control (socio-economic and demographic) variables. In addition, the manner in how the data was subject to a proper statistical testing process and how the threats to validity and reliability were mitigated are summarized. Findings will provide the results of the statistical analysis for each of the null hypothesis tested in determining what correlation, not causation, exists between the independent and dependent variables. A Comparison of Results to Other Studies helps put into perspective this research compared to other similar research studies in this area. Further Research in Workforce Classification and High Performance Organization will provide a pathway for others to consider in this subject area that would benefit the profession, local government law enforcement organizations and the citizens they serve. Finally, the Conclusion will be the closing commentary on this research project.

**Background**

One variance between organizations is the ability of employees to access and use collective bargaining in negotiated contracts for salaries, benefits and workplace conditions. These employees are generally represented by an empowered union to act on behalf of the employees. For local governments, such workforce classification is governed through their respective state laws to either avail or not avail collective bargaining rights to certain classes of workers amongst its local government workforce;
including law enforcement employees (Salerno, 1981). For law enforcement organizations, three distinct categories of workforce classification exist via collective bargaining: 1) None; 2) Impasse resolution via mediation; and 3) Impasse resolution via mandatory arbitration. A fourth classification - work stoppages (strikes) - exist for other professions, but not for law enforcement organizations (except in Montana, but Montana requires many pre-qualifying conditions in order for strikes to occur).

**Problem Statement, Research Question and Hypothesis**

From the initial environmental scan in Chapter 1 – Introduction, the repeated debates on the merits of public sector unions in the 21st century ranged from those with opinions about high union costs to those that associate unions with providing an environment where the worker, and therefore the locality, can operate at a higher performance level over the long-term. From these various opinions and additional research performed, the following problem statement was formulated:

- Local government law enforcement collective bargaining practices appear to create advocacy groups in support and against such practices; however, these emotional debates seem to focus on just salary and benefit costs and not on any high performance law enforcement organization factors; especially when total law enforcement costs and demographic factors are considered in determining high performance return on costs.

Understanding what, if any, relationship exists between workforce classification and the high performing organization (HPO) can help address the problem. The research was designed to remove the emotional and advocacy-related elements that
are often associated with collective bargaining with emphasis on theoretical inspired data analysis. In order to not be too broad, the focused local government service subject to this question is law enforcement. Accounting for the costs amongst the various local government law enforcement organizations was important to the research question’s focus on the relationship between workforce classification and HPO. Based upon these research goals, the following research question was formulated:

- **Is there a relationship between a local government law enforcement collective bargaining or non-collective bargaining workforce and a high performance law enforcement organization when cost and demographic factors are considered in determining high performance return on costs?**

In order to position a research project for statistical analysis, hypotheses are developed from which independent, dependent and control variables can then be gathered and tested via statistical software (e.g., SPSS). Based upon the problem statement and research question, and related literature review, the following hypotheses and related null hypotheses to be subjected to statistical analysis) were derived to try and capture results on performance and costs individually and then collectively through a composite measure developed – High Performance Return on Costs (HPRC). Each of the subject areas (arbitration (A) and mediation (B)) of the hypotheses statements was captured as separate hypothesis statements in order to isolate the subject area subject to the statistical test. HPRC can be used to evaluate the efficiency and effectiveness of taxpayers’ costs for law enforcement.
Law Enforcement Performance Hypotheses (1)
  o **Hypothesis 1A**: Positive relationships between law enforcement workforce classification of arbitration and higher performance attributes when compared to non-collective bargaining
  o **Hypothesis 1B**: Positive relationships between law enforcement workforce classification of mediation and higher performance attributes when compared to non-collective bargaining

Law Enforcement Cost Hypotheses (2)
  o **Hypothesis 2A**: Positive relationship between law enforcement workforce classification of arbitration and higher costs when compared to non-collective bargaining
  o **Hypothesis 2B**: Positive relationship between law enforcement workforce classification of mediation and higher costs when compared to non-collective bargaining

Law Enforcement Higher Performance Return on Costs Hypotheses (3)
  o **Hypothesis 3A**: Positive relationship between law enforcement workforce classification of arbitration and higher performance return on costs composite measure when compared to non-collective bargaining
  o **Hypothesis 3B**: Positive relationship between law enforcement workforce classification of mediation and higher performance return on costs composite measure when compared to non-collective bargaining

**Independent Variable – Workforce Classification**

In categorizing the independent variable of workforce classification, the United States is fairly evenly divided amongst the three categories of workforce classification:
1) Thirty-two states permit collective bargaining for its law enforcement organizations and are segmented through their impasse resolution process with fifteen states (30.0% of total) via mediation and seventeen states (34.0% of total) via mandatory arbitration; and
2) Eighteen states (36.0% of total states) that do not permit collective bargaining.
Dependent Variable – Performance

Dependent variables, as they pertain to law enforcement HPO measures, were focused upon four primary high performance statistics or traits: 1) Survey Results - the perception a citizen has about the law enforcement services provided in their locality and how safe and secure they feel in factors that are key to high quality of life; 2) Crime Index (separately captured for violent and property crimes) - data from actual crimes committed; and 3) National Accreditation – recognition of a professionally managed law enforcement organization. These statistics were selected because they appear to be representative and an appropriate gauge for performance from both an internal (staff, elected official) and external (citizen, business, media) perspective. Clearance rates for crimes committed was not used as a performance measure because of the variability in this measure defined amongst local governments and the timing difference between numerator and denominator (crime A cleared in the numerator may not be part of the crimes tabulated in the denominator if the crime occurred in the prior year).

For the survey results, a highly regarded survey company, National Citizens Survey (NCS), provided detailed local government professionally stratified sample survey responses for 238 local governments across the country. This included a comprehensive questionnaire for representative sample of citizens to complete regarding all aspects of their local government, its services and their quality of life. These same 238 local governments were also the basis for the entire sample.
Three different parts of the survey were used for this research. The first two parts were used as separate statistics in gauging how safe the citizen felt and the quality of their law enforcement organization. For the “how safe do you feel” section, results from the following six questions were utilized: 1) Violent crimes (e.g., rape, assault, robbery); 2) Property crimes (e.g., burglary, theft); 3) In their neighborhood during the day; 4) In their neighborhood after dark; 5) In shopping areas during the day; and 6) In shopping areas after dark. All of the results of these responses were averaged together to form a “how safe do you feel” performance composite measure.

Another section of the NCS survey asked the following question - “please rate the quality of law enforcement services” (NRC, 2012). A third section of the survey utilized for this research asked about overall quality of life, not related directly to law enforcement, and this result was utilized as a control variable in determining if there is any correlation between performance (and other dependent variables of cost and HPRC) and overall quality of life.

A second set of statistics focused on a local government’s crime index for violent and property crimes. The FBI collects such information from every law enforcement organization (called UCR Part I Crimes). Violent crimes include aggravated assault, forcible rape, murder and robbery whereas property crimes include arson, burglary, larceny-theft and motor vehicle theft (USDOJ, 2012). The crime indices for property and violent crimes were calculated by taking the total respective crimes for each of the indices and dividing them by population (demand trait). Other demand factors that may
influence the ability of a local government to provide service and correlating crimes that may arise include businesses (and their employees and business guests) and other visitors (e.g., tourists). However, these demand factors are not accumulated in any consistent manner amongst local governments and were not subject to this research. In order to classify crime rates for statistical analysis as part of a composite performance score on a 100 point scale, the crime rates were incrementally scaled with those with the highest crime rates (lowest performance indicator) getting a 0 scaled to those with the lowest crime rates (highest performance indicator) assigned a 100 factor score.

The third set of statistics gathered was the national accreditation of a local government’s law enforcement organization. The pursuit and attainment of national accreditation for local government law enforcement is recognized as a HPO trait in ensuring compliance to generally accepted standards of the profession. The Commission on Accreditation for Law Enforcement Agencies, Inc. (CALEA) was formed in 1987 by four major national law enforcement associations. CALEA has published a standards manual containing professional standards that address nine major law enforcement areas: 1) Role, responsibilities, and relationships; 2) Organization, management, and administration; 3) Personnel structure; 4) Personnel process; 5) Operations; 6) Operation support; 7) Traffic operations; 8) Detainee and court-related activities; and 9) Auxiliary and technical services (CALEA, 2012). In quantifying the factor for statistical analysis, a score of 100 was given to localities with accreditation, 50 for those localities in self-assessment category in pursuit of accreditation and 0 for those localities that do not have accreditation nor are pursuing such accreditation.
The performance dependent variable was a compilation of the preceding performance statistics with a weighted average applied amongst the statistics to best represent one consistently applied performance measure for the statistical analysis. The weighted average formula is as follows: Composite Performance Measure = (Safe survey questions * 25%) + (law enforcement quality survey question * 25%) + (violent crime rate * 20%) + (property crime rate * 20%) + (accreditation factor * 10%).

Dependent Variable – Cost per Capita

For the law enforcement costs per capita dependent variable, the costs to provide law enforcement services were comprised of personal services (salaries and fringe benefits), operating (e.g., supplies, fuel, training, contractual services) and capital (e.g., vehicles). These costs were attained through third party sources (ICMA’s Performance Measurement Survey (ICMA, 2011)) or directly from the respective local government’s audit or budget documents that illustrated actual costs for law enforcement. The cost of services and operations for law enforcement are often highly debated during a locality’s budget process with expectations of high correlations of service performance to costs. Compensation and benefits is also the highest portion of an organization’s budget; therefore inclusion of this cost measure and its correlation to workforce classification is warranted as a dependent variable. In determining the per capita costs factor, the total law enforcement costs were divided by the population. As noted under crime index, additional considerations were given to other demand factors.
for the denominator, but also as noted previously, these factors were not consistently calculated or available amongst local governments.

**Dependent Variable – High Performance Return on Costs (HPRC)**

A final dependent variable was a composite calculation from the preceding dependent variables in illustrating a HPRC through a weighted criteria formula to best represent the dependent variables of performance as a factor (numerator) from the costs invested into the service (denominator). The attempt to create HPRC was to better compare and contrast an overall HPRC measure as there can be higher performance traits that take an inordinately higher cost to attain or even lower performance traits that may be associated with an inordinately lower cost. The formula for HPRC is Performance Composite Measure / Law Enforcement Costs per Capita.

**Control Variables**

The control variables utilized were designed to accomplish two objectives: 1) Provide validity that the sample selected is representative of the population of local governments through comparisons to US Census and other sources; and 2) There are no anomalies of sample local governments (e.g., performance) that would cause the independent variables to not be comparable. For example, if all the high survey result communities in one category of workforce classification were the result of higher socio-
economic factors compared to a lower survey result in another category of workforce classification from lower socioeconomic factors, then the differential may be attributable to underlying socio-economic factors and not because of workforce classification. For each of the following control variables selected, they were selected because of possible correlation between the survey respondents of that local government, the perception of service and the ability of that local government to provide a high performing service at an appropriate cost (Unless otherwise noted, control variable sources were the US Department of Census (US Census, 2012)):

- Municipal bond ratings (uninsured): Provided a good overall indicator of a local government’s economic health as the higher the bond rating, the lower the risk of default. Moody’s Investors Services was the data source and they base their ratings on four factors – economic, debt, administrative and financial (Moody’s, 2012). Uninsured is an important qualifier as many local governments that are unrated or have a lower bond rating, may be able to purchase bond insurance to warrant a AAA-bond rated deal. Therefore, the bond ratings utilized for this analysis have removed such insured transactions in order to ensure accurate comparability.

- Population: This is the demand statistic for a local government’s law enforcement services. The size of the population in prior research has been correlated to higher crime statistics from a per capita and related demand statistic perspective (Ellis, Beaver and Wright, 2009). This is attributable to higher populated localities
may have a wider scope of citizens with needs to warrant services or citizens who may be associated with criminal activity; also requiring additional law enforcement services.

- **Density**: This represents population per square miles and can affect services that are more associated with density. This includes noise complaints as neighbors are closer to each other.

- **Form of Government**: There are three primary types of local government structures: City, County and Towns (which includes districts and other locally defined governmental units).

- **Survey-Quality of Life**: Being able to segment the sample population’s overall perception of quality of life may provide analytical results showing variances amongst local governments, independent variables and dependent variables.

- **Right-to-Work States**: While the independent variable properly distinguishes between unionized and non-unionized law enforcement unions, some of these unions are permitted in right-to-work states and in some non-right-to-work states, there may not be a law enforcement union.

- **Other Control Variables**: Additional variables were used that are common in classifying a local government’s socio-economic and demographic environment and its relative ability to perform to the varying demands its citizens may place upon it because of such environment. These other factors included median household income, high school graduation rates, percentage of population aged 15-25, and unemployment rate.
As an example of such variance in demand for service is an increase in the educational level significantly reduces subsequent violent and property crimes with numerous other positive impacts upon the community (Lochner, 2008). Another example is that the age group of 15-25 can place far higher demands upon law enforcement than any other age group tier. After age 25, a steep drop in criminal activity occurs as people take-on new roles and the possibility of jail time becomes a relatively more-serious matter because of the impact it will have on the perpetrator’s life and responsibilities (Sociology.org, 2012).

**Workforce Classification**

Citizens often aspire for their local government services to recognize their needs and adapt to changes in a timely manner. This HPO trait may be further realized with or without collective bargaining. The environment exists that certain unions are under further scrutiny and pressures to justify their existence without regard to performance outcomes. This scrutiny has become more prevalent during the recession resulting in certain states debating changes to their collective bargaining laws. This scrutiny is further fueled by: 1) Declining investment return rate impacts upon public sector defined benefit pension plans that create material unfunded pension liabilities; and 2) Collective bargaining agreements that stipulate defined salary increases and employer payments towards health insurance during employees’ tenure and retirement. These factors, in addition to general recession factors of less taxable bases (property, income and sales tax) constrain local government budgets and have resulted in some combination of tax
rate increases or service reductions; both of which are generally opposed by the citizens.

If general tenets of fair and equitable workplace practices, including compensation and benefits, could be defined, then objectively determining whether there exists additional motivation and performance of a unionized worker versus a non-unionized worker can be fairly debated. However, the realization is that there is an inherent challenge and employee skepticism about any objective process based upon the history and plight of the worker under duress from management; both in the public and private sector.

Private sector employees and their unions in the United States were formally recognized and empowered with the passage of the 1935 National Labor Relations Act – Wagner Act (LaborUnionReport.com, 2012). The impetus for the Wagner Act was focused on the private sector as public sector applicability was not envisioned (Code of Federal Regulations, 1935). President Franklin Roosevelt, a private-sector union advocate, cautioned that collective bargaining was not meant to be transplanted to the public sector (DiSalvo, 2010).

It was not until 1958, when New York City Mayor Wagner (son of Senator Wagner from Wagner Act) issued an executive order enabling certain local public workers the ability to unionize. Soon thereafter, many other states, starting with Wisconsin in 1959 (LaborUnionReport.com, 2012), and local governments provided such access for defined segments of their workforce. In 1962, President John Kennedy
enabled certain federal workers the right to unionize for the first time through Executive Order 10988 (American Presidency Project, 2012). This executive order was reinforced by Title VII of the Civil Service Reform Act of 1978 (Dilts and Walsh, 1988).

Law Enforcement Organizations

Law enforcement officers and firefighters have over 36% of their employees nationwide part of a union; which is second only to teachers for all occupational categories, private or public (U.S. Department of Labor, Bureau of Labor Statistics, 2004). This percentage increases substantially when it is just large law enforcement organizations; with over 70% of organizations with greater than 100 sworn officers engaging in collective bargaining (Zhao and Lovrich, 1997). Therefore, the importance of determining what is a high performance organization for law enforcement and whether there are or are not correlations to workforce classification has far greater applicability for many law enforcement workers, their employer and the citizens they serve. However, in order to have a rational discussion and interpret research rationally, the fragmentation between employer and worker and between citizen and their government needs to be overcome.

This fragmentation between employer and employee has been around prior to unions and was the impetus for the creation of unions. As it pertains to law enforcement, this fragmentation was evident in the early actions of the Boston Police Social Club. When the Boston law enforcement chief in 1919 refused to recognize this
social club as having union status, a majority of the law enforcement officers “walked off
the job” for four days which resulted in “widespread looting, hundreds of injuries and
seven deaths” with order restored only upon National Guard arrival (DeLord, Burpo,

As citizens and their government try to address this issue rationally, it is
becoming more common to measure law enforcement effectiveness by focusing on
“victimization data and citizens’ satisfaction with law enforcement service” (ICMA, 1991,
p. 381). The accounts from the victim’s perspective and the community at-large on how
well law enforcement is performing in a variety of manners may help better frame the
strengths and weaknesses of the law enforcement organization for which the
community may want further action plans initiated in reducing any weaknesses.

High Performance Organizations (HPOs)

HPOs are defined in many ways, but generally address the ability of the
organization to leverage its collective resources to achieve the highest production value
of products and services produced. Citizens often aspire for their local government
services to recognize their needs and adapt to changes in a timely manner. This high
performance organization trait may be further realized with or without collective
bargaining. The environment exists that certain unions are under further scrutiny and
pressures to justify their existence without regard to performance outcomes. Law
enforcement unions are facing a “global trend of policing reform driven by underlying social and economic factors (e.g., public demand for safety and security services that may not be met through traditional sworn officers)” (DeLord, Burpo, Shannon, and Spearing, 2008, p. 299). It is from these and similar HPO traits and environmental challenges that a privatization movement of HPO arose which has raised the expectation for HPO standards in the public sector (Wooldridge, Amagoh and Menefee, 2002).

Pursuing national accreditation is an HPO trait and achieving such accreditation can be viewed as a requirement for a HPO. For law enforcement, CALEA accreditation standards are not an “assessment in how well a local law enforcement organization has controlled crime or disorder, but rather how the organization has complied with guidelines that CALEA believes are associated with “good administrative practices” and “if these practices produce better performance, the law enforcement leader may claim that their organization is a higher performer as a result of such practices” (ICMA, 1991, p. 391). In leveraging CALEA-type standards into an operational mode, the productivity of law enforcement can be increased through: “1) Improving current policies and practices to the highest level; 2) Allocating resources most efficiently to the varied law enforcement services; 3) Increasing the probability of goal accomplishment; and 4) Leveraging the workforce talents to their full potential” (More, 1979, p. 326).

All of the previous measures and attributes for the HPO need to also be done in a continuous improvement environment, and in the most efficient manner, in order for
HPO attainment and continuum of HPO status. Employees and organizations should develop together the appropriate tools and proactive strategies in adapting to the changing workplace in pursuit of and maintenance of HPO traits. “Managers with an appreciation of the problems of individuals and groups at work and an understanding of possible solutions can utilize their knowledge to facilitate organizational effectiveness” (Steers, 1984, p. 540). In addition, “performance measures can measure the output produced by the organization or the outcomes created in the community which results from organizational output” (Wooldridge, 2007, p. 47). A HPO-type performance measurement strategy can position the law enforcement organization to be proactive in dealing with issues as they arise, rather than reactive strategies hurriedly put together to appease politicians or the public.

**Theoretical Framework – Rational Choice Theory**

The theoretical basis utilized to best help answer the research question for this dissertation was Rational Choice Theory (RCT). Rational Choice Theory is a subset of the neo-classical theories (employee marginal utility and employer profit maximization) whereby individuals through “explanation and prediction” enable a rational choice process to ensue even with the likelihood of “high uncertainty and imperfect information” (Harmon and Mayer, 1986, p. 404). The underlying primary value of Rational Choice Theory is its efficiency in rational goal attainment (Harmon and Mayer, 1986). As the research question is based upon HPO attributes which are dependent upon employee
performance, Rational Choice Theory’s approach to employee motivation is a critical factor to high performance.

The degree of organizational reality attempts to gauge the ability of the manager to “optimize instead of maximize on the quality of their decision” based upon the changing environment around them (Steers, 1984, p71). It is through rational choice process of optimization that viable alternatives emerge and that the selected alternative is appropriate to meet environmental demands (Steers, 1984). It is recognized that an individual’s self-interest goal is to maximize utility; which is correlated to the concept of “ends” previously addressed and positions the individual to make choices to best serve the individual. “Choosing rationality becomes equivalent to maximizing utility” which seeks the “greatest fulfillment of pre-existing passions” (Allingham, 1999, p. 1).

Rational Choice Theory also “maximizes the satisfaction of preferences” by “individual actors” (Hindess, 1988, p. 1). “Narrow rationality” is where individual actions are motivated by “self-interest”; however, that does not necessarily translate to the actions of a group as acting rationally (Hardin, 1982, p. 9). From this perspective, non-collective bargaining traits appear to be more self-interest targeted for narrow rationality to excel. Perhaps a key connection to narrow rationality’s success in law enforcement is whether such employees perform better in a self-interest capacity than in larger groups most traditionally associated with law enforcement unions.

It is perhaps from these rational responses that an environment was created for private sector unions to initially materialize from an idea to a legal standing via the Wagner Act to having the public sector employee also interpret such societal benefits
and higher quality of life for themselves in their advocacy of creating organized public sector unions. Until the ability to form unions existed, individuals may not have had any defined pathway towards coordination. An “absence of assurance and coordination among individuals can make second-best choices rational to all” because a “joint outcome of such choices is a rationally inferior product from the point of view of the participating individuals” (Frohock, 1987, p. 131).

This perhaps sets the possibility that there is neither an absolute social norm that may exist for collective bargaining or non-collective bargaining as these choices, while clear and distinct, may each have a rational basis from an individual’s perspective that is reinforced if that individual is surrounded by similar collective thoughts of other individuals. This also appears to not constrain a HPO (or existing organization seeking HPO status) in developing multiple, but finite courses of action to best position the employee, customer and organization for continuum of HPO success. The result for law enforcement officers is that they will be “happier in their work and more productive when the decisions they are allowed to make for themselves are maximized and the decisions others make for them are minimized” (Maddox, 1975, p. 25).

Future issues in the workplace and organizational behavior can evolve from trend changes in “socio-normative, demographic, economic or technological” and the manner in which leaders (and workers) address these changes and their inherent challenges will determine how HPO traits can be achieved and maintained (Steers, 1984, p. 537). Collective bargaining trends can be influenced by any of these changes. While economic changes may cause more immediate constraints on collective bargaining
during periods of recession, it may be socio-normative changes that impact the workplace for more sustained periods of time. Socio-normative changes could include “work ethic, aspiration levels, attitudes towards authority and trust in organization” that can also be external forces “influencing the nature of the work environment which, in turn, influences how people behave and feel on the job” (Steers, 1984, p. 537).

Perhaps greater awareness of the dynamics in which performance attributes can be enhanced through metrics as noted in this research ultimately will motivate the law enforcement officers further towards a high performance environment. Just as Henry A. Landsberger in *Hawthorne Revisited* (Landsberger, 1958) identified correlations between worker productivity improvement and the greater interest in them as workers from management, perhaps this heightened interest in the law enforcement officer from not just management, but from the community, with their support, can also be that same interest mechanism to yield a higher performing organization.

**Research Design and Methodology**

Through an exploratory cross-sectional study utilizing SPSS, the data collection was a compilation of information generally available for local governments that can be further analyzed. The sample population is derived by using all participants in the National Citizen Survey (NCS). Additional information regarding the sample population
and variables utilized (independent, dependent and control) were previously addressed in this Summary’s Background section.

All data categories were entered into statistical software (e.g., Statistical Package for Social Services (SPSS)) from which applicable statistical data analysis could be performed. The primary manners in which data was analyzed were as follows:

- **Linear Regression Analysis:** In order to determine the t-score, significance of the t test, variance inflation factor (VIF), standardized coefficient and related output from linear regression, correlations can be used to determine if two variables are linearly related to each other (SPSS, 2009).

- **Descriptive Statistics:** In order to ensure that the sample is representative of the population, descriptive statistics (frequency tabulations for variables comprising ordinal or nominal traits and descriptive tabulations for variables comprising scale traits) were statistically performed.

**Validity and Reliability of Sample and Data Variables**

As the data results were accumulated, further efforts were made to re-address validity and reliability of data variables. Validity determines whether the data is measuring what was intended to be measured and reliability determines how accurately the measuring is without the effects of potential bias. Construct validity, through use of independent authoritative sources of performance indicators, appears to be the proper measures. In addition, through the use of descriptive statistics, the sample appears to be representative of the population. Internal validity properly demonstrates the causal
relationship between two variables. With workforce classification as the independent variable and dependent variables of performance, cost and HPRC, through linear regression analysis, the t score and significance of the t test, linear correlations were confirmed to be either positive, negative or neither.

Additional validity aspects accounted for: 1) Maturation via aligned time horizons so similar environmental conditions existed during measurement period; 2) Instrumental (and measurement effect) changes as measurement tools replicated throughout the study; 3) Selection bias mitigated through consistent demographic (control variable) classification and linear regression analysis performed on such variables; and 4) Experimental mortality factors are mitigated by the relative non-transition nature of local governments and collective bargaining agreements.

For external validity, statistical data was computed for the sample and the population in illustrating the sample’s representation through the use of many control variables. For control variables in which the population of all local governments wasn’t easily determined to be correlated, additional analysis was performed to illustrate that the sample was actually representative of local governments that have a certain size and scope to have fully functioning law enforcement organizations. In addition, because the selection of the sample was not volunteers, those external validity concerns are negated.

In addition, the ability to segment similar demographic and socio-economic local governments helps mitigate relative external validity concerns. Confounded treatment
effects were mitigated by focusing on the incremental changes between the dependent variable based upon the independent variable mitigating the risk of generalization of very low or high performance to an entire population of local governments. Situational effects were mitigated as the subjects are local governments and their citizens, all subject to the same scope and duration of study. Effects due to differential mortality were mitigated in a similar manner as noted under internal validity.

Reliability concerns were addressed as what was measured amongst the entire sample and across all of their variables was measured consistently without regard to any other factors. Consistency examples include the same set of survey questions and data sources accessed to ensure that a consistent manner to compile the data was performed throughout the data gathering and analysis process.

The examination of correlation, if any, between law enforcement workforce classification and performance, costs and associated HPRC was performed in Chapter 4 – Findings. Through SPSS linear regression, statistical analysis was performed for each of the dependent variables compared to the independent and control variables.

The control variables were accumulated and analyzed in helping determine the comparability of data amongst the three independent variable classifications (associated with workforce classification): 1) Non-collective bargaining (what the following variables of mediation and arbitration are being compared to); 2) Collective bargaining through mediation (included in the model); and 3) Collective bargaining through mandatory arbitration (included in the model).
The control variables were reviewed to determine the representativeness of the sample to the entire population of local law enforcement organizations. This was accomplished via two manners: Research design control and statistical control. For research design control, a representative cross-section of many types of localities was selected (as the entire data set of National Citizen Survey participants was utilized) so that the results are more generalizable to the whole population of localities. For statistical control, the various control variables were specifically selected (e.g., population, bond ratings, density) and statistically analyzed to ensure that such variables are not linked to the differences between results of the hypothesis being tested (performance, cost, and high performance return on costs).

As the hypotheses are the basis from which this research is conducted and findings are emulated, they are illustrated again below:

- Law Enforcement Performance Hypotheses (1)
  - Hypothesis 1A: Positive relationship between law enforcement workforce classification of arbitration and higher performance attributes when compared to non-collective bargaining
  - Hypothesis 1B: Positive relationship between law enforcement workforce classification of mediation and higher performance attributes when compared to non-collective bargaining

- Law Enforcement Cost Hypotheses (2)
  - Hypothesis 2A: Positive relationship between law enforcement workforce classification of arbitration and higher costs when compared to non-collective bargaining
  - Hypothesis 2B: Positive relationship between law enforcement workforce classification of mediation and higher costs when compared to non-collective bargaining

- Law Enforcement Higher Performance Return on Costs Hypotheses (3)
Hypothesis 3A: Positive relationship between law enforcement workforce classification of arbitration and higher performance return on costs composite measure when compared to non-collective bargaining

Hypothesis 3B: Positive relationship between law enforcement workforce classification of mediation and higher performance return on costs composite measure when compared to non-collective bargaining

As part of the findings, the results may be based upon the result of random chance rather than an actual relationship between the variables; therefore the hypothesis is neither proven nor rejected as part of this research. Because the research is focused on correlation (positive or negative relationship) and not causation, the hypothesis cannot be confirmed as definitively true or false (SPSS, 2009). Rather, a null hypothesis (no relationship) is formulated that will either be rejected or fail to be rejected as that is the only manner of supporting a hypothesis – by refuting (nullifying) a null hypothesis (McDonald, 2009). A deductive valid rejection of a null hypothesis may occur, yet not achieve a deductively valid affirmation of it. The examination of how all of these variables are possibly correlated or not is the goal of this research and possible considerations of future research if certain correlations emerge. Therefore, the following null hypotheses have been formulated:

- Law Enforcement Performance Null Hypotheses (1)
  - Null Hypothesis 1A: No relationship between law enforcement workforce classification of arbitration and higher performance attributes when compared to non-collective bargaining
  - Null Hypothesis 1B: No relationship between law enforcement workforce classification of mediation and higher performance attributes when compared to non-collective bargaining

- Law Enforcement Cost Null Hypotheses (2)
Null Hypothesis 2A: No relationship between law enforcement workforce classification of arbitration and higher costs when compared to non-collective bargaining
Null Hypothesis 2B: No relationship between law enforcement workforce classification of mediation and higher costs when compared to non-collective bargaining

- Law Enforcement Higher Performance Return on Costs Null Hypotheses (3)
  - Null Hypothesis 3A: No relationship between law enforcement workforce classification of arbitration and higher performance return on costs composite measure when compared to non-collective bargaining
  - Null Hypothesis 3B: No relationship between law enforcement workforce classification of mediation and higher performance return on costs composite measure when compared to non-collective bargaining

Hypothesis 1A and 1B: Findings and Null Hypothesis Testing

Hypothesis 1A: Positive relationship between law enforcement workforce classification of arbitration and higher performance attributes when compared to non-collective bargaining

- Null Hypothesis 1A: No relationship between law enforcement workforce classification of arbitration and higher performance attributes when compared to non-collective bargaining

Hypothesis 1B: Positive relationship between law enforcement workforce classification of mediation and higher performance attributes when compared to non-collective bargaining

- Null Hypothesis 1B: No relationship between law enforcement workforce classification of mediation and higher performance attributes when compared to non-collective bargaining

As noted in Chapter 3 – Research Design and Methodology, the composite performance measure (includes survey, crime rates (violent and property) and accreditation factors) was calculated for each of the local governments in the sample.
This composite performance measure was then analyzed via SPSS linear regression.

Table 5.1: Composite Performance Measure illustrates the following:

- **Model Summary** – r square: .603 which indicates on average the model's predictions are 60% better than guessing the mean. The small variance between the r square (.603) and adjusted r square (.580) are also indicative of good model of data producing results (adjusted r square is 3.8% less than r square).
- **ANOVA** – F value: 26.223 and significance of .000 which indicates that the overall model produces better results than simply guessing the mean.
- **VIF**: The variance inflation factor examines the underlying relationship amongst the variables. Low scores indicate that the independent variables are not heavily inter-correlated. High inter-correlation can impact the standard errors.
- **Coefficients:**
  - Significant (<.05): Median household income, density, age, survey quality, city and mediation all appear to be significant.
  - Standardized coefficient – Beta and t-statistic (of those noted as significant) are listed in the following order of greatest relationship:
    - Median household Income ($000) (beta .389 and t-statistic 5.985) with an unstandardized coefficient B of .24 indicates that for every unit change of $1000 in the median household income (mean 59.0 ($000) or $59,000), there is a .24 increase in the composite performance index (mean 46.5).
Survey Quality of Life (beta .363 and t-statistic 5.354) with an unstandardized coefficient B of 30.363 indicates that for every unit change of 1 in the survey – quality of life score (mean .76); there is a 30.363 increase in the composite performance index (mean 46.5). A better way to illustrate is for every unit change of .1 (10%) in survey quality of life score, there is a 3.0 increase to the composite performance index.

Age (beta .170 and t-statistic 3.461) with an unstandardized coefficient B of 24.5 indicates that for every unit change of 1 in age 15-24% (mean .16); there is a 24.5 increase to the composite performance index (mean 46.5). A better way to illustrate is for every unit change of .1 (10%) in age 15-24%, there is a 2.5 increase to the composite performance index. This result may appear to be counter-intuitive as it was previously noted a correlation of this age bracket and higher probability for crimes committed. However, other mitigating circumstances may lend themselves to higher performance. Examples could include: 1) Higher proportion in an older age bracket; or 2) More citizen-friendly survey responses for those in portion of age bracket (21-25).

City (beta -.155 and t-statistic -3.036) with an unstandardized coefficient B of -5.2 indicates that cities, on average, have a 5.2
lower composite performance index (mean 46.5) when compared to towns.

- Density (beta -.146 and t-statistic – 2.977) with an unstandardized coefficient B of -.001 indicates that for every unit change of 1 in density (mean 2378.7); there is a decrease to the composite performance index (mean 46.5) of -.001. A better way to illustrate is for every unit change of 100 in density there is a decrease to the composite performance index of -.1.

- Mediation – Hypothesis 1B (beta -.126 and t-statistic -2.247) with an unstandardized coefficient B of -3.49 indicates that mediation localities, on average, have a 3.49 lower composite performance index (mean 46.5) when compared to non-collective bargaining localities and 4.98 lower composite index when compared to arbitration and its 1.49 increased composite performance index.

As median household incomes, survey – quality of life scores or age 15-24% of population increases, the composite performance score of law enforcement services also increase. This means some combination of higher favorable rating on law enforcement survey questions on how safe does a citizen feel, lower violent or property crimes; or law enforcement national accreditation pursuit or attainment has occurred. This may be due to overall abilities of higher income and quality of life attributes mitigate crime from occurring and/or enable law enforcement to perform at a higher level.
whereas the age factor may also represent a more family-friendly area in deterring crime. The inverse relationship exists for density in that as population density increases, the composite performance score of law enforcement decreases. This may be due to the challenges of performance for higher density areas in the calls for service that may result from citizens interacting in closer proximity. There also appears to be a contrast between cities and counties with cities decreasing the composite measure score when compared to towns. This may be due to how citizens are exposed to law enforcement and its ability to deter crime at a greater rate in the towns than in the cities. However, further research would need to be done in order to further isolate determining factors for why these relationships of variables to increased or decreased composite performance measures exist.

In regards to workforce classification, mediation (Hypothesis 1B) has a decreased composite performance measure. All of the other variables were not significant enough to warrant any further analysis in regards to relationship to composite performance measure. There may be some determining factor localities with a mediation possess to warrant a decreased composite performance measure (e.g., workforce constraints to adopt low crime rate strategies; accreditation pursuit lacking; and/or engaging and informing their citizens of safety-quality measures and related survey question measures). As an example, law enforcement organizations with mediation workforce classification may not have gained the confidence of their citizens in addressing crime as well as non-collective bargaining or arbitration localities. This may be because the general population of such localities does not share the same
workforce classification status as those in the law enforcement organization and therefore, may not empathize as well in how such challenges are addressed. While it may be a challenge to control these factors, surveys may gauge the sentiment of citizens in mediation and non-mediation localities to determine what may be correlation of mediation to lower composite performance index. Rational Choice Theory attributes (e.g., employee motivation) may also be less present in mediation localities. However, further research would need to be done in order to further isolate determining factors for why this relationship of mediation to decreased composite performance measure exists.

In addition, arbitration (Hypothesis 1A) is positive with its increased composite performance measure, even though it was above the .05 significance threshold set for further review. This means that arbitration is viewed more favorably than mediation and non-collective bargaining, and while arbitration is not statistically different from non-collective bargaining, it does appear to be statistically different from mediation.
Table 5.1: Composite Performance Measure

<table>
<thead>
<tr>
<th>Model Summary</th>
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<tbody>
<tr>
<td>Model</td>
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<tr>
<td>-------</td>
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<tr>
<td>1</td>
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</tbody>
</table>

a. Predictors: (Constant), Arbitration, Survey-Quality of Life, Age15to24%, County Local Govt, Bond Rating Adj Scale, Density, Population (000), City Local Govt, Unemployment Rate, Meditation, Right-to-Work State, High School Graduates, Median HH Inc (000)

<table>
<thead>
<tr>
<th>ANOVA&lt;sup&gt;a&lt;/sup&gt;</th>
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</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>Regression</td>
</tr>
<tr>
<td>1 Residual</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Performance Composite
b. Predictors: (Constant), Arbitration, Survey-Quality of Life, Age15to24%, County Local Govt, Bond Rating Adj Scale, Density, Population (000), City Local Govt, Unemployment Rate, Meditation, Right-to-Work State, High School Graduates, Median HH Inc (000)
Based upon the preceding statistical tests, which illustrated a correlation of mediation to a lower composite performance measure, it would appear that the null hypothesis 1B can be rejected as there appears to be a relationship between law enforcement workforce classification of mediation and higher (or lower) performance attributes. Rejection of the null hypothesis does not confirm the hypothesis. For hypothesis 1A, because there was no such statistically significant correlation as it
pertains to arbitration and higher (or lower) performance attributes, the null hypothesis 1A cannot be rejected.

**Hypotheses 2A and 2B: Findings and Null Hypothesis Testing**

**Hypothesis 2A:** Positive relationship between law enforcement workforce classification of arbitration and higher costs when compared to non-collective bargaining

- **Null Hypothesis 2A:** No relationship between law enforcement workforce classification of arbitration and higher costs when compared to non-collective bargaining

**Hypothesis 2B:** Positive relationship between law enforcement workforce classification of mediation and higher costs when compared to non-collective bargaining

- **Null Hypothesis 2B:** No relationship between law enforcement workforce classification of mediation and higher costs when compared to non-collective bargaining

Whereas hypotheses 1 were capturing the correlation, if any, between the classification of the workforce and a variety of performance measure attributes, hypotheses 2 captures the correlation between classification of the workforce and law enforcement costs per capita. Table 5.2: Law Enforcement Costs per Capita illustrates the following via SPSS linear regression:

- **Model Summary - r square:** .187 which indicates on average the model's predictions are 18% better than guessing the mean; which is considered a low prediction rate (note Hypothesis 1 had a 60% rate). The variance between the r square (.187) and adjusted r square (.139) is actually a large variance (unfavorable), with adjusted r square 25.7% below r square (whereas Hypothesis 1 had a variance of 3.8%). This may be correlated to the number of insignificant variables being examined as part of this analysis as the greater number of
variables added, the greater the chance of a larger spread between r-square and adjusted r-square. Based upon this low r square and large variance, another regression was conducted removing those insignificant variables that had a significance factor > .250 in hopes that such significance variables were impacting the adjusted r square. However, this resulted in only slightly improved results - r square (.181) and adjusted r square (.152) with a high 16.0% variance. Based upon this large variance, additional regression analyses were conducted changing variables (e.g., lowering significance factor further to remove other variables, changing composite of variables included in analysis) in hopes that certain variables were impacting the results in producing a large variance between r square and adjusted r square. However, there was an inability to make improvements to the adjusted r square variance. Based upon these factors, the model is not necessarily parsimonious from a statistical analysis (i.e., only slightly better than guessing the mean). Therefore, the output for hypotheses 2 results carry caveat of low r square and poor model and should not be overly relied upon as part of a statistical analysis.

- **ANOVA – F value:** 3.95 and significance of .000 which indicates that the overall model produces better results than simply guessing the mean.

- **VIF:** The variance inflation factor examines the underlying relationship amongst the variables. The low scores indicate that the independent variables are not heavily inter-correlated. High inter-correlation can impact the standard errors.
- Coefficients:
  - Significant (<.05): Non-right-to-work state, county and arbitration all appear to be significant.
  - Standardized coefficient – Beta and t-score (of those noted as significant) are listed in the following order of greatest relationship:
    - Non-right-to-work state (beta .340 and t-statistic 4.190) with an unstandardized coefficient B of 66.6 indicates that for non-right-to-work states there is a $66.62 increased cost to the law enforcement cost per capita (mean $236.30) when compared to right-to-work states.
    - Arbitration – Hypothesis 2A (beta -.254 and t-statistic -2.701) with an unstandardized coefficient B of -51.43 indicates that arbitration localities, on average, have a $51.43 deceased cost to law enforcement costs per capita (mean $236.30) when compared to non-collective bargaining localities and $72.67 decreased cost when compared to mediation and its $21.24 increased cost to law enforcement costs.
    - County (beta -.189 and t-statistic -2.413) with an unstandardized coefficient B of -78.24 indicates that counties have a $78.25 decreased cost to law enforcement costs per capita (mean $236.30) when compared to towns.
Therefore, for localities that have arbitration for law enforcement when compared to the other workforce classifications or are a county when compared to towns, there is a relationship to either of those statuses and decreased law enforcement costs per capita. For non-right-to-work states, there is a relationship to increased law enforcement costs. All of the other variables were not significant enough to warrant any further analysis in regards to relationship to law enforcement costs.

Reasons supporting a lower cost environment for arbitration could be attributable to sensitivity to union-negotiated practices regarding compensation and benefits that other facets of operations (e.g., vehicle replacements, equipment, training) may be lower than other localities. There may also be practices existing in arbitration localities that through their empowered union, they may not be as susceptible to political or other distractions in provision of law enforcement services and its related costs (e.g., hiring additional personnel). Rational Choice Theory attributes (e.g., efficiency in rational goal attainment) may also be more present in arbitration localities. There may also be reasons for non-right-to-work states that support a higher cost environment and counties that support a lower cost environment (e.g., states with greater union-friendly practices may have higher service costs whereas counties may be able to run more efficiently without urban challenges). However, further research would need to be done in order to further isolate determining factors for why this relationship of arbitration to decreased law enforcement costs per capita exists as well as the relationships of non-right-to-work states and counties.
Table 5.2: Law Enforcement Costs Per Capita

<table>
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<th>Model</th>
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<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
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<td>1</td>
<td>.432a</td>
<td>.187</td>
<td>.139</td>
<td>90.755</td>
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a. Predictors: (Constant), Arbitration, Survey-Quality of Life, Age15to24%, County Local Govt, Bond Rating Adj Scale, Density, Population (000), City Local Govt, Unemployment Rate, Meditation, Right-to-Work State, High School Graduates, Median HH Inc (000)

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<th>Model</th>
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<th>F</th>
<th>Sig.</th>
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<td>3.952</td>
<td>.000b</td>
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<td></td>
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<td></td>
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<tr>
<td>Total</td>
<td>2268113.731</td>
<td>237</td>
<td></td>
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</tbody>
</table>

a. Dependent Variable: Law Enfor Exp per Capita
b. Predictors: (Constant), Arbitration, Survey-Quality of Life, Age15to24%, County Local Govt, Bond Rating Adj Scale, Density, Population (000), City Local Govt, Unemployment Rate, Meditation, Right-to-Work State, High School Graduates, Median HH Inc (000)
Based upon the preceding statistical tests, which illustrated a correlation of arbitration to decreased law enforcement costs per capita, it would appear that the null hypothesis 2A can be rejected as there appears to be a relationship between an element of law enforcement workforce classification (arbitration) and law enforcement costs per capita (does not confirm the hypothesis). Because of the inability of the statistical tests to illustrate a correlation of mediation to increased (or decreased) law enforcement costs per capita.
enforcement costs per capita, it would appear that the null hypothesis 2B cannot be rejected.

As noted, because of the low $r^2$ and large variance to adjusted $r^2$, the variability amongst the data has given rise to a model that may be only slightly better than guessing the mean; even after removing low significance variables from data output analysis in attempting to lower the variance between $r^2$ and adjusted $r^2$. Therefore, the results appropriately disclose this challenge to the model and would require further research to best ascertain other variables, if any, that may produce a more parsimonious model. However, such low $r^2$s may also be indicative of a null hypothesis that may fail to be rejected on the underlying data.

**Hypotheses 3A and 3B: Findings and Null Hypothesis Testing**

**Hypothesis 3A:** Positive relationship between law enforcement workforce classification of arbitration and higher performance return on costs composite measure when compared to non-collective bargaining

- **Null Hypothesis 3A:** No relationship between law enforcement workforce classification of arbitration and higher performance return on costs composite measure when compared to non-collective bargaining

**Hypothesis 3B:** Positive relationship between law enforcement workforce classification of mediation and higher performance return on costs composite measure when compared to non-collective bargaining

- **Null Hypothesis 3B:** No relationship between law enforcement workforce classification of mediation and higher performance return on costs composite measure when compared to non-collective bargaining
The goal of the hypothesis 3 is to calculate and then analyze a high performance return on costs (HPRC) from the data variables in the two previous hypotheses. From the HPRC quantified factor for each locality (composite performance measure/law enforcement costs per capita), a statistical analysis can be performed of this factor and the classification factor of the workforce.

In performing the statistical analysis initially using the same control variables in the prior hypothesis tests, many of these variables resulted in high “significance” results which indicate high correlations of inapplicability of such variables amongst the data set. This may have also given rise to large variance between adjusted r square and r square (81.8%). Appendix H – Hypotheses 3 Full Variable Result Table provides the result of such initial statistical analysis. In trying to negate the effects of such irrelevant variables, the statistical analysis for hypotheses 3 was refined to include those control variables with a lower rate of risk on the analysis. A threshold of significance use for a revised set of control variables, included in this section’s analysis, included only those below a significance of .250 (high school graduates, median household incomes, non-right-to-work states and county government).

Table 5.3: High Performance Return on Costs illustrates the following via SPSS linear regression:

- Model Summary - r square: .056 which indicates on average the model’s predictions are 5% better than guessing the mean. This a very low percentage which reflects that there is not much difference between predictions and guessing the mean. The variance between the r square (.056) and adjusted r
square (.031) is actually a large variance (unfavorable), with adjusted r square 44.6% below r square (whereas Hypotheses 1 had a variance of 3.8%, but an improvement from the initial Hypotheses 3 variance of 81.8% as noted in Appendix H). This may be correlated to the number of variables being examined as part of this analysis as the greater number of variables added, the greater the chance of a larger spread between r-square and adjusted r-square. Based upon this large variance, additional regression analyses were conducted by changing variables (e.g., lowering significance factor further to remove other variables, changing composite of variables included) in hopes that certain variables were impacting the results in producing a large variances between r square and adjusted r square. However, there was an inability to make improvements to the r square and adjusted r square variance. Based upon these factors, the model is not necessarily good from a statistical analysis (i.e., only slightly better than guessing the mean). Therefore, the output for hypothesis 3 results carry caveat of low r square and high variance with adjusted r square; which results in a model that is not robust and should not be overly relied upon as part of a statistical analysis.

- **ANOVA** – F value: 2.268 and significance of .038 which indicates that the overall model produces better results than simply guessing the mean.
- **VIF**: The variance inflation factor examines the underlying relationship amongst the variables. The low scores indicate that the independent variables are not heavily inter-correlated. High inter-correlation can impact the standard errors.
Coefficients:

- Significant (<.05): Median household income and county appears to be significant.

- Standardized coefficient – Beta and t-score (of those noted as significant) are listed in the following order of greatest relationship:
  - Median Household Income ($000) (beta .190 and t-statistic 2.400) with an unstandardized coefficient B of .314 indicates that for every unit change of $1000 in the median household income (mean 59.0 ($000) or $59,000), there is a .314 increase in the HPRC index (mean 27.28).
  - County (beta .159 and t-statistic 2.426) with an unstandardized coefficient B of 24.156 indicates that counties have a 24.156 increase in the HPRC index (mean 27.28) when compared to towns.

Therefore, as median household incomes increases, the HPRC index for law enforcement services also increases. This may indicate that higher median household income localities enable a lower costing law enforcement organization to also perform better as there are less opportunities for crime to occur, more time dedicated to accreditation and/or a higher survey satisfaction rate. This may also be the result that higher median household incomes also may follow better practices of crime reduction strategies (e.g., securing their households and vehicles better; contacting law enforcement about suspicious activity or crime alert hotline tips; or be less positioned to
commit crimes because of higher incomes). There is also a correlation of counties having an increased HPRC index when compared to other (e.g., towns). This may be the result of counties without the urban challenges faced in many cities or towns being able to perform better at a lower cost. Further research would be necessary to determine what, if any, of these potential underlying scenarios for median household incomes and counties could yield HPRC. All of the other variables were not significant enough to warrant any further analysis in regards to relationship to HPRC.

Table 5.3: High Performance Return on Costs

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Arb, Median HH Inc (000), County Local Govt, High School Graduates, Med, Non Right-to-Work State

<table>
<thead>
<tr>
<th>ANOVA&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Regression</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

a. Dependent Variable: HPRC
b. Predictors: (Constant), Arb, Median HH Inc (000), County Local Govt, High School Graduates, Med, Non Right-to-Work State
<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>(Constant)</td>
<td>61.968</td>
<td>36.739</td>
<td></td>
<td>1.687</td>
<td>.093</td>
</tr>
<tr>
<td>High School Graduates</td>
<td>-58.975</td>
<td>44.875</td>
<td>-.102</td>
<td>-1.314</td>
<td>.190</td>
</tr>
<tr>
<td>Median HH Inc (000)</td>
<td>.314</td>
<td>.131</td>
<td>.190</td>
<td>2.400</td>
<td>.017</td>
</tr>
<tr>
<td>Non Right-to-Work State</td>
<td>-7.748</td>
<td>6.046</td>
<td>-.108</td>
<td>-1.282</td>
<td>.201</td>
</tr>
<tr>
<td>County Local Govt</td>
<td>24.156</td>
<td>9.957</td>
<td>.159</td>
<td>2.426</td>
<td>.016</td>
</tr>
<tr>
<td>Med</td>
<td>.354</td>
<td>6.094</td>
<td>.005</td>
<td>.058</td>
<td>.954</td>
</tr>
<tr>
<td>Arb</td>
<td>5.356</td>
<td>7.294</td>
<td>.072</td>
<td>.734</td>
<td>.464</td>
</tr>
</tbody>
</table>

Based upon the preceding statistical tests, which did not illustrate a correlation of workforce classification to change in HPRC index, it would appear that the null hypotheses 3 (both 3A and 3B) cannot be rejected.

As noted, because of the low r square and large variance to adjusted r square, the variability amongst the data has given rise to a model that may be only slightly better than guessing the mean; even after removing high significance variables from data output analysis in trying to lower the variance between r square and adjusted r square. Therefore, the results appropriately disclose this challenge to the model and would require further research to best ascertain other variables, if any, which may produce a better and more robust model. However, a low r-square indicates a weak model overall therefore it is difficult to draw strong conclusions even if the null hypothesis could be rejected, it would be with caution.
Hypothesis Results Summarized

Based upon the preceding statistical results, findings for each of the hypothesis can be stated (also summarized in Table 5.4: Null Hypotheses Findings).

- **Hypothesis 1A**: Positive relationship between law enforcement workforce classification of arbitration and higher performance attributes when compared to non-collective bargaining
  
  o The null hypothesis of no relationship failed to be rejected (no potential relationships identified in this research).
  
  o For control variables, potential relationships exist with median household income (positive), density (negative), age (positive), survey quality (positive) and city (negative). This applies to hypothesis 1B also.

- **Hypothesis 1B**: Positive relationship between law enforcement workforce classification of mediation and higher performance attributes when compared to non-collective bargaining

  o The null hypothesis of no relationship was rejected (mediation (negative)) when compared amongst non-collective bargaining as results indicate potential relationship.
• **Hypothesis 2A:** Positive relationship between law enforcement workforce classification of arbitration and higher costs when compared to non-collective bargaining

  o The null hypothesis of no relationship was rejected (arbitration (negative)) when compared amongst non-collective bargaining as results indicate potential relationship.

  o For control variables, potential relationships exist with non-right-to-work state (positive) and county (negative). This applies to hypothesis 2B also.

  o However, because of low r squares and large variance between r square and adjusted r square, the model's output is only slightly better than guessing the mean. Even after removing variables with high significance or other traits in a variety of analysis, the variance between r square and adjusted r square were not improved. Therefore, because of the model's limitations in not being parsimonious, the preceding results may not be as valid as data output and analysis that yielded a higher r square and a lower variance to adjusted r square. This applies to hypothesis 2B also.

• **Hypothesis 2B:** Positive relationship between law enforcement workforce classification of mediation and higher costs when compared to non-collective bargaining

  o The null hypothesis of no relationship failed to be rejected (no potential relationships identified in this research).
• **Hypothesis 3A:** Positive relationship between law enforcement workforce classification of arbitration and higher performance return on costs composite measure when compared to non-collective bargaining

  o The null hypothesis of no relationship failed to be rejected (no potential relationships identified in this research).
  
  o For control variables, potential relationships exist with median household income (positive) and counties (positive). This also applies to hypothesis 3B.
  
  o However, because of low r squares and large variance between r square and adjusted r square, the model's output is only slightly better than guessing the mean. Even after removing variables with high significance or other traits in a variety of analysis, the variance between r square and adjusted r square were not improved. Therefore, because of the model's limitations in not being parsimonious, the preceding results may not be as valid as data output and analysis that yielded a higher r square and a lower variance to adjusted r square. This also applies to hypothesis 3B.

• **Hypothesis 3B:** Positive relationship between law enforcement workforce classification of mediation and higher performance return on costs composite measure when compared to non-collective bargaining

  o The null hypothesis of no relationship failed to be rejected (no potential relationships identified in this research).
While two of the six null hypotheses were rejected, there are observations of these research findings worthy of further discussion. As indicated in Chapter 1 – Introduction, the advocacy groups with strong opinions about the high costs of unions and low performance results is contrasted by those advocacy groups that attribute unions as an inherent trait needed to meet a worker’s needs and provide for a safe and productive workplace towards a high performing organization. These sentiments and related research helped give rise to the problem statement, research question and hypothesis development. Because the null hypothesis was rejected two out of six times, there appears to be a possible correlation from this research between workforce classification and a law enforcement organization’s ability to perform better and at a lower cost, but no correlation in regards to higher performance return on costs (HPRC).
Table 5.4: Null Hypotheses Findings

<table>
<thead>
<tr>
<th>Null Hyp 1: (Positive – higher performance; Negative lower performance) – GOOD MODEL</th>
<th>Null Hyp 2: (Positive – higher cost; Negative lower cost) – POOR MODEL</th>
<th>Null Hyp 3: (Positive – higher HPRC; Negative lower HPRC) – POOR MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Relationship – Dependent Variable</td>
<td>No Findings</td>
<td>No Findings</td>
</tr>
<tr>
<td>Negative Relationship - Dependent Variable</td>
<td>Rejected - Mediation (1B)</td>
<td>Rejected - Arbitration (2A)</td>
</tr>
<tr>
<td>Positive Relationship – Control Variable</td>
<td>Median HH Inc Age 15-24 (% of people) Survey- Quality</td>
<td>Non-right to Work State</td>
</tr>
<tr>
<td>Negative Relationship - Control Variable</td>
<td>Density City</td>
<td>County</td>
</tr>
</tbody>
</table>

Comparison of Results to Other Studies

Chapter 4 – Findings provided a summary of other studies in high performance organizations and related HPRC, collective bargaining and law enforcement services. There were no expectations with regards to any of the results, although from an initial review of the literature and related research, there were attributes of higher personnel costs associated with collective bargaining and higher performance measures associated with more educated and higher median income areas. While there was no one research study found to cover all three subject areas, Freeman and Ichinowski...
(1988) compared teacher unions with greater and lesser unionization with the result that
collective bargaining correlated to higher teacher salaries and generally higher
educational performance. Comparison of different types of workers (teacher vs. police
officer) with different training and related needs to perform their job function is
challenging and would be subject to validity concerns. However, additional research
may be needed across professions to see if there are any similar outcomes of workforce
classification and HPRC and if so, are there traits between professions that contribute to
such similarity.

For those studies in which law enforcement was the research topic, the studies
(example: Feuille, Delaney and Hendricks (1985)) that illustrated a correlation between
a collective bargaining atmosphere and greater workforce influence, it appears that
such measures in these studies do not necessarily reference high performance
organization or HPRC traits, but rather other matters of workforce influence (e.g., higher
pay and benefits, job protection, workplace environment conditions). This research
project did not correlate workforce classification to the array of workplace topics
deemed to be “influential” as its focus was on HPRC.

For those studies (example: Zhao and Lovrich (1997)) that determined higher
compensation and benefits to the law enforcement worker with collective bargaining
abilities, no such correlation was determined as part of this research. As the law
enforcement costs for this research used the total costs of the law enforcement
organization, it was not possible to determine the salaries and benefit costs that could
be better compared to other research in this area. Perhaps if other studies indicate positive correlations of salaries and benefits to levels of workforce classification and the researched performed as part of this study indicate higher overall (salaries, benefits, operating and capital) law enforcement costs per capita for non-collective bargaining and mediation, but lesser costs per capita for arbitration, then perhaps variances exist between the non-salaries and benefits expenses to offset the higher salaries and benefits. Note that mediation did illustrate higher costs per capita, so further research may be needed to determine variations between these two forms of workforce classification.

Further Research in Workforce Classification and HPOs

Further research on this problem statement should incorporate some aspect of longitudinal studies to determine the effect of trends and data over time and if the same correlations (or lack of correlations) result. A significant contribution of this study is that it seeks to not focus on just costs, but to put any costs in context with performance for local government law enforcement services. The ability to know whether there is a result or not of collective bargaining as it pertains to a law enforcement HPO can help to include that variable in future discussions; and if there is no correlation, then it is appropriate to not include that variable in future discussions. The introduction of a new composite measure, high performance return on costs (HPRC), also adds to the significance of the study as such calculation can potentially correlate costs to
performance and enable such calculations to be uniformly compiled, compared and contrasted.

Additional manners in how HPRC could be calculated and assigning different weight to the criteria and its outcome on the HPRC score would also benefit from research. Eventually each organization, public and private, should develop some metric in knowing how well it is performing. Comparison of similarly designed and data captured metrics amongst peers further illustrates how well one organization is doing when compared to another and to industry benchmarks. Because some organizations may have a variety of professions that are motivated in maximizing the utility (rational choice theory) via different manners, the development of universal metrics is challenging in any organization. Perhaps multiple metric development and research of varying metrics and their outcomes in motivating the workforce to perform at HPO level would also benefit the profession.

Additional research will also be need to be performed with clearance rates that localities submit to the FBI, but are not captured in a manner that appears to be consistent to the underlying crimes cleared nor shared in a public manner to lend itself to developing comparative peer calculations or industry standards based upon socio-economic profile of the local government. The compilation of peer local governments with similar socio-economic and demand factors would greatly benefit research.

As an example of other demand factors besides population that are worthy of further consideration in determining proper indices (e.g., crime rate) of the demands
placed upon law enforcement would include tourism and business activities. These activities may not correlate to a local government’s population proportionally, therefore making comparative crime indices that much more challenging. Unfortunately, data availability for such factors (e.g., number of hotel rooms, number of employees) by local government are not readily available and in many cases, not publicly shared.

Current implications for practice and policy as a result of this research could focus upon the following:

• Positioning the local government for a higher performance return on costs (e.g., developing strategies to improve the median household incomes) based upon variables with high correlation between increasing in value and positively impacting the HPRC ratio.

• Local government participation in national citizen surveys with comparable benchmarks can help determine performance attributes (e.g., “how safe do you feel”).

• National law enforcement accreditation practices should be researched by more local governments with pursuit of accreditation considered.
Conclusion

The research addressed in this analysis is an example to not merely focus on the results of performance and costs; but also recognize that there are internationally established rights of workers that need to be respected so that any short-term accomplishments (lower costs) do not result in lower performance. Conversely, increased costs without an improvement to performance need to also be gauged to ensure that the tax burden is leveraging the best relative array of services in a high performing manner.

The importance of this issue is justified from the perspective that public sector collective bargaining is a topic that continues to be raised as to what the return on taxpayer investment (performance) accrues for the benefits bestowed on protected employees. As local governments are becoming further scrutinized by taxpayers to have an appropriate array of high performing services in both effective and efficient manners, workforce classification (via collective or non-collective bargaining) can be isolated as an independent variable to determine if it has any impacts or effect upon high performing results. In addition, while effectiveness measures (output, outcome) of performance are one attribute of correlation to performance, the comparison and contrast to the relative cost (efficiency measures) is another key attribute of performance. Together these effectiveness and efficiency measures need to both excel for a HPO.
The importance of this issue from a citizen’s perspective is that the more safe and secure their community is, the higher their quality of life in relation to a variety of factors (CNBC, 2012). For example, higher crime areas may adversely affect property values as evidenced by a decrease in home property values of 10% for areas with a higher crime rate of one standard deviation (Gibbons, 2004). This is where HPOs in the public sector distinguish themselves from the private sector. For the private sector, the HPO may garner a more secure customer base and yield greater profits; however, for the public sector entity, the HPO factors translate into positive quality of life attributes for citizens and productive environment for businesses; all with a reasonable tax burden that maximizes the potential of return on investment of such tax burden.

If additional costs can yield higher performance, then it would be appropriate to best gauge the high performance return on costs of such additional cost and the incremental marginal utility rewards. From an economic perspective, there will be a point at which such marginal utility is diminished to the point that such additional cost investment does not provide a return on such investment (Hicks, 1935); or in this case a higher performance return on costs. From a public sector perspective, this point may be debated as there can be subjective determinants as to what is defined as “return” as there may exist more qualitative factors in the public sector than private sector. However, if agreed-upon objective measures of performance can be assembled together with a consistent cost basis by which such services are performed, then correlations of costs to higher performance can possibly be calculated, analyzed and further discussed.
As certain variables illustrated relationships to performance, costs and HPRC, many variables exhibited no relationship. Median household incomes and counties provided the only relationship to HPRC. For median household incomes, this may illustrate the wealth factor that provides the means to demand less upon their law enforcement services while yielding high survey results, for which the costs provided for such service are low enough to generate a high HPRC. For counties, this may illustrate the abilities of counties to have an environment more conducive to higher performance and lower costs that may not exist in more urban areas. The findings rejected the null hypothesis in two of the six separate tests in determining whether or not there was a correlation between workforce classification (independent variable) and 1) Performance (mediation was lower performance); 2) Costs (arbitration was lower costs) and 3) High performance return on costs (no rejection of null). There may be underlying factors that determined these correlations to arise in performance and cost; including some of the motivation factors addressed in Rational Choice Theory. These findings should only serve those with strong advocacy opinions on either side of this political debate that further research is needed in this area and less rhetoric.
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APPENDIX A - RESEARCH IDENTITY MEMO

LOCAL GOVERNMENT LAW ENFORCEMENT SERVICES:
RELATIONSHIPS BETWEEN PERFORMANCE AND COST IN
COLLECTIVE AND NON-COLLECTIVE BARGAINING WORKFORCES

Joseph P. Casey            March 21, 2012

There have been prior experiences I have had that are relevant to this topic or setting. I was raised in a household with a very pro-union parent who leveraged the power of her teacher’s union to keep pace with other collective bargaining professions which were perceived to be of less educational or technical demand (e.g., solid waste collection). In my own career, I work for a local government in Virginia where non-union forces have resulted in a workforce that is perceived to be of equal merit and receives equal compensation increases and benefits.

Beginning in 2008, I closely monitored Federal legislative proposals that would mandate collective bargaining to all public safety workers in every state. The names of these proposals were titled “Employee Free Choice Act” and Public Safety Employer-Employee Cooperation Act.” While this legislation did not prevail, it was heavily scrutinized from a local government management perspective as the Federal government’s intrusion into a state’s existing “right-to-work” laws. In addition, such legislation, if passed, would have changed the scope of my job as a component of the job would be devoted to collective bargaining agreements and potential for higher wages and benefits being negotiated for public safety workers that would be greater than the rest of the local government workforce.

There are certain assumptions that have resulted from these experiences. One assumption is that it should be the decision of local government officials and the community whether the merits of a union would result in better services at a reasonable cost. Secondly, although I have not been in a union, I have had experience with “mandatory dues” and other practices that coerce the worker into actions that they otherwise would not take on their own free will.

There are also goals that have emerged from these experiences, some of which have become important. An overarching goal is to have an unbiased perspective in determining if there is a differentiation between performance, cost and collective bargaining. Also, it is important to respect that the evolution of certain unions was the direct result of poor working conditions, adverse actions on the rights of employees and below market compensation and benefits. Finally, through leveraging various contacts to gather information and potentially observe and interview both organizations is critical in collecting background information that can better frame the data population to be analyzed.

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The experiences and assumptions mentioned previously and goal to address this topic in an unbiased perspective helped shape my decision to choose this topic. It is important to me to determining if there is a cause-effect between unions and performance and cost. The potential advantages in this study would include a balanced background and experiences which will enable the gathering of accurate information to be analyzed impartially. A potential disadvantage is that many audiences to such information and results have their own bias and assumptions that traditionally are hard to overcome; even when presented with fresh information prepared in non-biased manner.
APPENDIX B – NATIONAL CITIZENS SURVEY

LAW ENFORCEMENT SERVICES QUESTIONS

Please rate how safe or unsafe you feel from the following in ABC:
- Violent crime (e.g., rape, assault, robbery)
- Property crimes (e.g., burglary, theft)
- Environmental hazards, including toxic waste

Please rate how safe or unsafe you feel:
- In your neighborhood during the day
- In your neighborhood after dark
- In ABC’s downtown area during the day
- In ABC's downtown area after dark

During the past twelve months, were you or anyone in your household the victim of any crime?
- If yes, was this crime (these crimes) reported to the police?

Please rate the quality of each of the following services in ABC:
- Police services
- Crime prevention
- Traffic enforcement
APPENDIX C – ICMA COMPARATIVE PERFORMANCE MEASUREMENT PROGRAM

The ICMA Comparative Performance Measurement Program includes several hundred indicators and descriptors, but for the purpose of this research, the law enforcement indicators were selected as a population of potential performance measures to consider in dependent and control variables (ICMA, 2011). The indicators utilized in this research are noted with “UTILIZED.” Refer to Chapter 3 - Research Methodology and Design for the descriptions and process for selecting final indicators used for performance and the control variables that best represent comparability amongst local law enforcement organizations. Indicators and descriptors not selected for variables to compile were due to the strength and representativeness of variables selected or the limited data available amongst localities in the sample population (e.g., information not recorded by locality, survey constraints of time, effort and responsiveness to gather such information). In addition, There were additional variables utilized for this research that were not part of ICMA's Comparative Performance Measurement Program. Refer to Chapter 3 – Research Methodology and Design for a complete list of such variables utilized.

Performance Measures (Dependent Variable Consideration)

Deterrence/Patrol Indicators

- Number of crimes per 1000 population - UCR Part 1 Crime Rate (UTILIZED)
- Number of crimes per 1000 population - Property Crime Rate (UTILIZED)
- Number of police calls per patrol officer
- Calls handled by means other than dispatch
- Total calls to 911 police
- Percent of commissioned personnel dedicated to patrol services (actual)
- Average patrol time utilization per officer
- Response time to emergency calls
- Juvenile arrest rate

Service Provider Descriptors

- Actual annual operating expenditures (UTILIZED)
- Staff by type
- Department cost
- Specialized units (e.g., search and rescue)
  - Provided by department
  - Provided by other
  - Dedicated unit
- Total Cost by unit

Apprehension/Investigation Indicators
- Crimes cleared - UCR Part I Crimes reported
- Crimes cleared - Violent crimes
- Crimes cleared - Property crimes
- Investigative personnel
- Total department cost per arrest made
- Total cost per crime cleared
- Crimes against persons per investigator
- Crimes against property per investigator
- Investigation cost

Community Policing Descriptors
- Do you have a community policing definition?
- What constitutes your community policing?
- Do you have dedicated community policing teams?

Miscellaneous Indicators
- Number of Injury-producing traffic accidents per 1000 population

Control Variable Consideration

Service Area Descriptors
- Population served (UTILIZED)
- Square miles served (UTILIZED)
- Median household income (UTILIZED)
- Percentage below poverty level
- Median age of population (UTILIZED, modified slightly to % age 15-24)
- Juvenile population
- Unemployment rate (UTILIZED)
- Number of households
APPENDIX D: PROPOSAL COMMON QUESTIONS AND PRELIMINARY ANSWERS

- What contribution does your study make to the literature on this topic?
  - Enables a perspective to focus on performance and not solely on costs as many studies do in regards to collective bargaining.

- What are the practical policy implications from this study?
  - If there are correlations between performance and collective bargaining, then future policy changes can be considered in regards to the benefits or detriments of collective bargaining on performance.

- How does this study contribute to our understanding of policy (or policy-making or policy implementation) in this area?
  - With focus on narrow field of law enforcement, policy implications can also be narrowly focused with considerations of additional fields of collective bargaining and their correlations to performance.

- What are the limitations of your study design for answering your research question?
  - Other variables extrinsic to the workplace will not be measured (e.g., quality of life attributes for workers, workers satisfaction rating with workplace) or general gauge of support or non-support of unions by the local residents being served.

- What alternative research designs might you use to address those limitations?
  - Determine if statistics are available to measure citizen composition of unionized workers (via census possibly) or worker satisfaction (e.g., turnover ratios); although even turnover ratios may be difficult to compare if the collective bargaining localities pay higher wages and/or make it more difficult to leave one local government for a similar position in another local government.

- What are the next studies you would recommend to learn more about your research question?
  - Compare other collective bargaining positions in local government using similar methodology and varying methodology to determine if replications of results occur.

- How do you explain …this pattern…in your findings? What alternative explanations might exist to explain these findings?
  - Question can be answered upon compilation of results.
APPENDIX E – LAW ENFORCEMENT PERFORMANCE – ARBITRATION COMPARED TO MEDIATION

In order to account for the independent variable amongst all the possibilities of comparisons, Table 4.2: Composite Performance Measure was subject to a second iteration. The one differential in how the data was analyzed was to compare arbitration directly to mediation. Other variables subject to the analysis in Chapter 4 were not repeated in this appendix because the underlying data and results for these other variables is the same as the underlying data and results subject to this additional statistical analysis. The hypothesis by which the comparison of arbitration to mediation would be framed to be tested and the related null hypothesis tested would be stated as follows:

- **Hypothesis:** Positive relationship between law enforcement workforce classification of arbitration and higher performance attributes when compared to mediation
  - **Null Hypothesis:** No relationship between law enforcement workforce classification of arbitration and higher performance attributes when compared to mediation

Based upon the results in the following table, the null hypothesis result is as follows: The null hypothesis of no relationship was rejected (arbitration (positive)) when compared to mediation as results indicate potential relationship.

- **Significance <.05:** Arbitration appears to be significant
- **Arbitration Standardized Coefficient beta .181 and t-statistic 3.083 with an unstandardized coefficient B of 4.97 indicates that arbitration localities, on average, have a 4.97 higher composite performance index (mean 46.5) when compared to mediation.

In regards to workforce classification, arbitration has an increased composite performance measure when compared to mediation. There may be some determining factors localities with arbitration possess to warrant an increased composite performance measure (e.g., less workforce constraints to adopt low crime rate strategies; accreditation pursuit encouraged; and/or engaging and informing their citizens of safety-quality measures and related survey question measures). However, further research would need to be done in order to further isolate determining factors for
why this relationship of arbitration to increased composite performance measure exists when compared to mediation.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>9.073</td>
<td>10.949</td>
<td>-</td>
<td>.829</td>
<td>.408</td>
</tr>
<tr>
<td>Population (000)</td>
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<td>0.004</td>
<td>-0.015</td>
<td>-.300</td>
<td>.764</td>
</tr>
<tr>
<td>Bond Rating Adj Scale</td>
<td>0.602</td>
<td>0.865</td>
<td>0.032</td>
<td>.696</td>
<td>.487</td>
</tr>
<tr>
<td>High School Graduates</td>
<td>2.828</td>
<td>13.427</td>
<td>0.013</td>
<td>.211</td>
<td>.833</td>
</tr>
<tr>
<td>Median HH Inc (000)</td>
<td>0.238</td>
<td>0.040</td>
<td>0.389</td>
<td>5.965</td>
<td>.000</td>
</tr>
<tr>
<td>Density</td>
<td>-0.001</td>
<td>0.000</td>
<td>-0.146</td>
<td>-2.977</td>
<td>.003</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>-27.107</td>
<td>27.396</td>
<td>-0.055</td>
<td>-.989</td>
<td>.324</td>
</tr>
<tr>
<td>Survey-Quality of Life</td>
<td>24.451</td>
<td>7.065</td>
<td>0.170</td>
<td>3.461</td>
<td>.001</td>
</tr>
<tr>
<td>Non Right-to-Work State</td>
<td>30.363</td>
<td>5.670</td>
<td>0.363</td>
<td>5.354</td>
<td>.000</td>
</tr>
<tr>
<td>Non Col Bargain (v. Med)</td>
<td>-0.957</td>
<td>1.504</td>
<td>-0.036</td>
<td>-.636</td>
<td>.525</td>
</tr>
<tr>
<td>City Local Govt</td>
<td>-5.158</td>
<td>1.699</td>
<td>-0.155</td>
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<td>.003</td>
</tr>
<tr>
<td>County Local Govt</td>
<td>5.272</td>
<td>3.066</td>
<td>0.094</td>
<td>1.720</td>
<td>.087</td>
</tr>
<tr>
<td>Arb (v. Med)</td>
<td>4.971</td>
<td>1.612</td>
<td>0.181</td>
<td>3.083</td>
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<tr>
<td>Non-Col Bargain (v. Med)</td>
<td>3.485</td>
<td>1.551</td>
<td>0.119</td>
<td>2.247</td>
<td>.026</td>
</tr>
</tbody>
</table>

a. Dependent Variable: PerformComposite
APPENDIX F - LAW ENFORCEMENT COSTS – ARBITRATION COMPARED TO MEDIATION

In order to account for the independent variable amongst all the possibilities of comparisons, Table 4.3: Law Enforcement Costs per Capita was subject to a second iteration. The one differential in how the data was analyzed was to compare arbitration directly to mediation. Other variables subject to the analysis in Chapter 4 were not repeated in this appendix because the underlying data and results for these other variables is the same as the underlying data and results subject to this additional statistical analysis. The hypothesis by which the comparison of arbitration to mediation would be framed to be tested and the related null hypothesis tested would be stated as follows:

- **Hypothesis**: Positive relationship between law enforcement workforce classification of arbitration and higher costs when compared to mediation
  - **Null Hypothesis**: No relationship between law enforcement workforce classification of arbitration and higher costs when compared to mediation

Based upon the results in the following table, the null hypothesis result is as follows: The null hypothesis of no relationship was rejected (arbitration (negative)) when compared to mediation as results indicate potential relationship.

- **Significance <.05**: Arbitration appears to be significant
- **Arbitration Standardized Coefficient beta**: -0.361 and t-statistic -4.291 with an unstandardized coefficient B of -73.17 indicates that arbitration localities, on average, have a $73.17 deceased cost to law enforcement costs per capita (mean $236.30) when compared to mediation localities.

In regards to workforce classification, arbitration has a lower cost per capita than mediation. There may be some determining factors localities with arbitration possess to warrant a lower cost per capita (e.g., sensitivity to union-negotiated practices regarding compensation and benefits that other facets of operations (e.g., vehicle replacements, equipment, training) may be lower than other localities, not as susceptible to political or other distractions in provision of law enforcement services and its related costs). However, further research would need to be done in order to further isolate determining factors for why this relationship of arbitration to decreased law enforcement costs per capita exists.
### Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Tolerance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>201.958</td>
<td>115.790</td>
<td></td>
<td>1.744</td>
<td>.082</td>
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<td></td>
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<tr>
<td>Population (000)</td>
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<td>0.043</td>
<td>-0.039</td>
<td>1.503</td>
<td>.134</td>
<td>0.571</td>
<td>0.758</td>
</tr>
<tr>
<td>Bond Rating Adj Scale</td>
<td>13.747</td>
<td>9.149</td>
<td>0.098</td>
<td>-0.568</td>
<td>.571</td>
<td>0.758</td>
<td>0.758</td>
</tr>
<tr>
<td>High School Graduates</td>
<td>36.611</td>
<td>141.990</td>
<td>0.023</td>
<td>0.258</td>
<td>.797</td>
<td>0.443</td>
<td>1.255</td>
</tr>
<tr>
<td>Median HH Inc (000)</td>
<td>-0.220</td>
<td>0.421</td>
<td>-0.049</td>
<td>-0.522</td>
<td>0.602</td>
<td>0.416</td>
<td>1.255</td>
</tr>
<tr>
<td>Density</td>
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<td>0.004</td>
<td>0.080</td>
<td>1.142</td>
<td>0.255</td>
<td>0.733</td>
<td>1.365</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>352.208</td>
<td>289.719</td>
<td>0.097</td>
<td>1.216</td>
<td>0.225</td>
<td>0.568</td>
<td>1.760</td>
</tr>
<tr>
<td>Age15to24%</td>
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<td>74.717</td>
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<td>-1.348</td>
<td>0.179</td>
<td>0.730</td>
<td>1.369</td>
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<tr>
<td>Survey-Quality of Life</td>
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<td>59.966</td>
<td>-0.004</td>
<td>-0.037</td>
<td>0.971</td>
<td>0.385</td>
<td>2.598</td>
</tr>
<tr>
<td>Non Right-to-Work State</td>
<td>66.629</td>
<td>15.902</td>
<td>0.340</td>
<td>1.140</td>
<td>0.225</td>
<td>0.616</td>
<td>1.816</td>
</tr>
<tr>
<td>City Local Govt</td>
<td>-24.269</td>
<td>17.963</td>
<td>-0.099</td>
<td>-1.351</td>
<td>0.178</td>
<td>0.677</td>
<td>1.478</td>
</tr>
<tr>
<td>County Local Govt</td>
<td>-78.245</td>
<td>32.424</td>
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<td>-2.137</td>
<td>0.017</td>
<td>0.595</td>
<td>1.682</td>
</tr>
<tr>
<td>Arb (v. Med)</td>
<td>-73.171</td>
<td>17.052</td>
<td>-0.361</td>
<td>-4.291</td>
<td>0.000</td>
<td>0.513</td>
<td>1.949</td>
</tr>
<tr>
<td>Non-Col Bargain (v. Med)</td>
<td>-21.736</td>
<td>16.401</td>
<td>-0.101</td>
<td>-1.325</td>
<td>0.186</td>
<td>0.630</td>
<td>1.586</td>
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</tbody>
</table>

a. Dependent Variable: LE Exp per Capita
APPENDIX G - LAW ENFORCEMENT HIGH PERFORMANCE RETURN ON COSTS – ARBITRATION COMPARED TO MEDIATION

In order to account for the independent variable amongst all the possibilities of comparisons, Table 4.4: High Performance Return on Costs was subject to a second iteration. The one differential in how the data was analyzed was to compare arbitration directly to mediation. Other variables subject to the analysis in Chapter 4 were not repeated in this appendix because the underlying data and results for these other variables is the same as the underlying data and results subject to this additional statistical analysis. The hypothesis by which the comparison of arbitration to mediation would be framed to be tested and the related null hypothesis tested would be stated as follows:

- **Hypothesis**: Positive relationship between law enforcement workforce classification of arbitration and higher performance return on costs composite measure when compared to mediation
  - **Null Hypothesis**: No relationship between law enforcement workforce classification of arbitration and higher performance return on costs composite measure when compared to mediation

  Based upon the results in the following tables, the null hypothesis result is as follows: The null hypothesis of no relationship was not rejected when compared to mediation as results do not indicate potential relationship.

- Significance <.05: Arbitration does not appears to be significant
<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
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<td>36.173</td>
<td>1.723</td>
<td>.086</td>
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<tr>
<td>High School Graduates</td>
<td>-58.975</td>
<td>44.875</td>
<td>-.102</td>
<td>-.102</td>
<td>1.314</td>
</tr>
<tr>
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<td>.131</td>
<td>.190</td>
<td>2.400</td>
<td>.017</td>
</tr>
<tr>
<td>1 Non Right-to-Work State</td>
<td>-7.748</td>
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<td>-.108</td>
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</tr>
<tr>
<td>County Local Govt</td>
<td>24.156</td>
<td>9.957</td>
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<td>.016</td>
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<td>Arb (v. Med)</td>
<td>5.001</td>
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<td>.067</td>
<td>.790</td>
<td>.430</td>
</tr>
<tr>
<td>Non-Col Bargain (v. Med)</td>
<td>-.354</td>
<td>6.094</td>
<td>-.004</td>
<td>-.058</td>
<td>.954</td>
</tr>
</tbody>
</table>

a. Dependent Variable: HPRC
APPENDIX H: HYOTHESES 3 FULL VARIABLE RESULT TABLE

As identified in Chapter 4 – Findings, the initial statistical output for all variables resulted in many variables having a very high significance factor which increased the risk that the output results could not be evaluated as well. Therefore, a second analysis was performed for refined control variables that were below a significance of .250 with such results available in Chapter 4 – Findings for the Hypotheses 3. The following is the initial statistical output performed, of which, the initial observations are also included.

High Performance Return on Costs illustrates the following via SPSS linear regression:
- Model Summary - r square: .066 which indicates on average the model's predictions are 6% better than guessing the mean; essentially the model is no better than guessing the mean. The large variance between the r square (.066) and adjusted r square (.012) are also indicative of poor model of data producing results.
- ANOVA – F value: 1.219 and significance of .266 which indicates that the overall model produces better results than simply guessing the mean.
- VIF: The variance inflation factor examines the underlying relationship amongst the variables. The low scores indicate that the independent variables are not heavily inter-correlated. High inter-correlation can impact the standard errors.
- Coefficients:
  - Significant (<.05): Median household income appears to be significant
  - Standardized coefficient – Beta and t-score:
    - Median household income ($000) (beta .217 and t-statistic 2.17) with an unstandardized coefficient B of .36 that for every unit change of $1000 in the median household income (mean 59.0 ($000) or $59,000), there is a .36 increase in the high performance return on costs composite performance index (mean 27.3)

Therefore, as median household incomes increases, the high performance return on costs scores for law enforcement services also increase. All of the other variables were not significant enough to warrant any further analysis in regards to relationship to HPRC.

Based upon the preceding statistical tests, which illustrated no relationship basis for non-collective bargaining, mediation or arbitration, it would appear that the null hypotheses 3A and 3B cannot be rejected as there appears to be no relationship between these elements of law enforcement workforce classification and high performance return on costs for law enforcement services.
## Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.257</td>
<td>.066</td>
<td>.012</td>
<td>35.72022</td>
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</table>

a. Predictors: (Constant), Arb, Survey-Quality of Life, Age15to24%, County Local Govt, Bond Rating Adj Scale, Density, Population (000), City Local Govt, Unemployment Rate, Med, Right-to-Work State, High School Graduates, Median HH Inc (000)

## ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
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<td>13</td>
<td>1555.943</td>
<td>1.219</td>
<td>.266</td>
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<tr>
<td>1 Residual</td>
<td>285809.196</td>
<td>224</td>
<td>1275.934</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>306036.450</td>
<td>237</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a, Dependent Variable: HPRC

b. Predictors: (Constant), Arb, Survey-Quality of Life, Age15to24%, County Local Govt, Bond Rating Adj Scale, Density, Population (000), City Local Govt, Unemployment Rate, Med, Right-to-Work State, High School Graduates, Median HH Inc (000)
<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Tolerance</td>
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<td>(Constant)</td>
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<tr>
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<td>.684</td>
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<tr>
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<td>.008</td>
<td>.119</td>
<td>.905</td>
</tr>
<tr>
<td>High School Graduates</td>
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<td>55.886</td>
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<td>-1.405</td>
<td>.162</td>
</tr>
<tr>
<td>Median HH Inc (000)</td>
<td>.359</td>
<td>.166</td>
<td>.217</td>
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<td>.031</td>
</tr>
<tr>
<td>Density</td>
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<td>.003</td>
<td>.038</td>
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</tr>
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<td>Unemployment Rate</td>
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<td>Age15to24%</td>
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<td>.928</td>
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</tr>
<tr>
<td>Survey-Quality of Life</td>
<td>-8.157</td>
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<td>.730</td>
</tr>
<tr>
<td>City Local Govt</td>
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<td>-.847</td>
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<td>County Local Govt</td>
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</tr>
<tr>
<td>Med (v. NCB)</td>
<td>2.173</td>
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<td>.737</td>
</tr>
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<td>Arb (v. NCB)</td>
<td>5.392</td>
<td>7.496</td>
<td>.072</td>
<td>.719</td>
<td>.473</td>
</tr>
</tbody>
</table>

a. Dependent Variable: HPRC
VITA

Joseph Patrick Casey was born April 28, 1964 in Washington DC and is an American citizen. He graduated North Brunswick Township High School, North Brunswick, New Jersey in 1982. He graduated with a Bachelor of Science from University of Richmond, Virginia in 1986 and with a Masters in Public Administration from Virginia Commonwealth University, Richmond, Virginia in 1995. He is currently employed as a Deputy County Manager with County of Henrico, Virginia; a county he has worked since January 2013. Previously he was employed from 1986 – 1990 rising to a senior accountant with KPMG; an international accounting firm and from 1990 – 2013 rising to a Deputy County Administrator with the County of Hanover, Virginia. He currently resides in Mechanicsville, Virginia with his wife Suzanne and three sons, Harrison, Patrick and Jackson.