THE ADOPTION OF RESEARCH AND PLANNING UNITS
BY AMERICAN MUNICIPAL POLICE DEPARTMENTS

Cory P. Haberman, B.S.

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Committee:
Dr. William R. King, Advisor
Dr. Michael E. Buerger
Dr. John Liederbach
This study takes an organizational perspective to examine the adoption of research and planning units by 58 American municipal police departments. Two rival hypotheses are tested: 1) an organizational complexity hypothesis, 2) an environmental complexity hypothesis. T-test analysis supported the organizational complexity hypothesis and found that large, complex police organizations were more likely to have adopted a research and planning unit. The conclusion of this thesis discusses these findings, describes some problems with researching organizational innovation, and suggests remedies to these problems.
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Although the title page of this thesis lists me as the author, the reality is that this thesis is a product of Bowling Green State University’s entire Criminal Justice faculty. I am proud to be a graduate of BGSU’s Criminal Justice Program, and can only hope that my career in academia will eventually make all of you proud.

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INTRODUCTION

Organizations form when an endeavor requires the concentrated efforts of more than one individual (Wright, 1977). Organizations are responsible for meeting the sophisticated demands of modern society, and these complex demands could not be met without the organized collective efforts of individuals. As society evolves and new demands arise, either innovative organizations are fabricated or existing organizations change in order to fulfill society's needs. These changes in organizations are mirrored in criminal justice and policing.

Klockars (1985) described how the 16th century shift from a mechanistic society to an organic society catalyzed the formation of organized law enforcement. Society’s shift from close-knit communities to less integrated and expanded urban areas diminished the ability of informal social control to deter crime. Over time citizens acknowledged the need for formal law enforcement. Eventually, the early avocational-obligatory forms of law enforcement adopted during the 16th century evolved into vocational policing delivered by bureaucratized organizations.

The majority of research from organizational scholars has emerged from fields other than criminal justice, but society’s reliance upon police organizations to fulfill vital societal needs cries out for further study. Modern law enforcement organizations are responsible for providing crucial services such as; crime fighting, detaining dangerous offenders, maintaining civil order, serving communities, and responding to emergency situations. Since society allocates these tasks almost solely to police organizations, it is essential that criminal justice scholars continue to research and improve police organizations.

Policing scholars typically recognize three distinct eras in the history of police organizations: 1) the political era (pre-1900), 2) the reform era (1900-1970), and the community
policing era (post-1970) (King, 1999; Fogelson, 1977; Kelling & Moore, 1988). Prior to the 1900s, during the political era of policing police organizations were controlled by political machines and notorious for corruption and inefficient practices. The reform era marked a movement towards strategies of crime control and improving the public image of policing organizations (Fogelson, 1977). In short, the reform era sought to ameliorate the political era police organizations by professionalizing policing, shielding police chiefs from political influence, upgrading departmental personnel, and refocusing the role of police on law enforcement.

Although the reform era vastly improved many aspects of the political machine controlled police organizations, additional policing improvements were certainly needed. Civil unrest in urban areas was common after the 1960’s Civil Rights movement. Additionally, results from the Kansas City Preventive Patrol Experiment (Kelling, 1974) and RAND Study of Detectives (Chaiken, Greenwood, & Petersilia, 1983) contradicted the common assumptions about random preventive patrol and detective investigations which were the foundation of modern policing. The pressing need to repair disrupted communities was complicated by empirical studies questioning the efficacy of modern policing. Community policing advocates proposed that successful policing would address the common concerns of citizens as well as engage community members as co-producers of crime reduction and prevention (Kelling & Moore, 1988).

During the 1970s crime rates continued to soar, and the realization that policing was in dire need of improvement was widely recognized by both academics and practitioners (Weisburd and Eck, 2004). By the 1980s many police organizations had adopted some form of community-oriented policing, but the field of policing continued to see the introduction of additional
strategic innovations (Braga & Weisburd, 2008). Strategies such as problem oriented policing (Goldstein, 1979), COMPSTAT (Weisburd et. al., 2004), third party policing (Buerger & Mazzerrolle, 1998), and Intelligence led policing (Ratcliffe, 2008) have all been innovations addressing the shortcomings of traditional reactive policing. Nonetheless, the majority of research on the development and evaluation of police innovations has been conducted by academics. Whereas most respected professional occupations have independently developed educational programs, unique bodies of professional literature, and review systems to adequately monitor the success and misdeeds of its practitioners, law enforcement practitioners have been less involved in the advancement of the aforesaid areas. The implementation of research and planning units, however, could potentially serve as the opportunity for practitioners within police organizations to substantially contribute to the professionalism and improvement of modern policing.

Police organizations assign employees to research and planning units in order to improve the organization’s efficiency. These distinct units may be responsible for duties such as analyzing statistics, researching innovative strategies or equipment, program evaluation, writing grant applications, or developing strategic plans for future demands. Research and planning units have an insider's perspective to improve organizational effectiveness, and by sharing their findings research and planning units could be instrumental in creating the technical body of knowledge needed to further the professionalism of American law enforcement (Sherman, 1998). Therefore, it is important to examine factors influencing the adoption of these units. Identifying structural characteristics that are unique to agencies currently implementing research and planning units may facilitate their adoption by other agencies. Conversely, information regarding environmental stimuli for the implementation of research and planning units may uncover
organizational motives for their adoption.

The present study will address the research question: how do organizational structure, environment, and context affect the implementation of research and planning units by municipal police organizations? This study will examine whether the adoption of research and planning units is the result of a particular organizational structure or of an environmental impetus. The first hypothesis suggests that police organizations with complex structures adopt research and planning units in order to facilitate coordination and cohesion. Alternatively, police organizations may also adopt research and planning units based on environmental stimuli. Police organizations that have diverse and unpredictable environments may utilize research and planning units to keep the organization responsive to its constituents.

Overall, this study will provide insight on a component of law enforcement agencies that has yet to be fully researched. Specifically, examining how organizational structure, environment, and context influences the implementation of research and planning units by law enforcement agencies will be useful for ensuring that these units become ubiquitous among law enforcement organizations. The potential value of research and planning units to improve policing is tremendous, and every attempt should be made to encourage their adoption by other law enforcement agencies.

The first chapter of this manuscript will define organizational innovation and examine important advancements in operationalizing innovations. Chapter 2 will define the relevant components of organizational structure, environment, and context, examine how previous policing scholars have measured these components, and summarize past studies examining organizational determinants of innovation. In chapter 3 the data sources, methodology, variables, and analysis procedures will be discussed. Chapter 4 will present the empirical findings of this
study, and conclude with an interpretation of the findings.
CHAPTER I
RESEARCHING INNOVATION

Although the focus of this study is to discern what factors influence the adoption of research and planning units by municipal police organizations, the adoption of a research and planning unit is also a study of organizational innovation. Therefore, this thesis will start with an examination of the existing organizational innovation literature. The organizational innovation literature is vast, and to make matters worse the definition and measurement of organizational innovation has been criticized extensively. This chapter defines organizational innovation, discusses problems with studying innovation, and reviews remedies proposed by previous organizational scholars to improve innovation research.

Defining Innovation

A complete lack of definitional consistency for organizational innovation has impeded innovation research (Downs & Mohr, 1976). Innovation has been classified into two categories: initiation and implementation. Initiation is the proposal of a new idea, and has quite different implications than implementation, or the actual adoption of a program or procedure (Damanpour, 1987). King (1998) convincingly argued that it is more useful for scholars to research innovations that have already been implemented. Studying innovations that have yet to be implemented only provides an understanding of anticipatory consequences and effects, and examining innovations that have already been adopted provides insight on tangible effects that are currently relevant to adopting organizations. This study will only consider a research and planning unit adopted if the organization is currently utilizing the research and planning units.

Additional debate has taken place as to “what” should be considered an innovation. Some have characterized an innovation as the creation and adoption of something uniquely new to a
field of organizations (Baldridge & Burnham, 1975; Kimberly & Evanisko, 1981). Others have simplified innovation to mean “newness” for the adopting agency, and used other terms such as invention to define the creation of new products or programs (Mansfield, 1963). Studying the implementation of innovations that are state-of-the-art to a field of organizations provides insight into how an entire organizational field is changing (King, 1998). On the other hand, defining innovation as newness to an organization is useful in understanding how individual organizations change. Either definition may be suitable for a researcher; however, it is important for studies to explicitly specify which definition has been used because the findings may not be generalizable if innovation is defined in the opposite manner. The present analysis is only concerned with the fact that the research and planning was new to the organization at the time of its adoption.

Types of Innovations

The aforesaid definition of innovation is a global concept; however, scholars have recognized that not all innovations are similar. Downs and Mohr (1976) described how the contradictory findings of research discerning determinants of innovativeness have been exacerbated by researchers failing to account for different innovation types. For example, the factors influencing the adoption of a program requiring an organization to restructure its labor units are likely different from the factors affecting the adoption of an innovation that only marginally affects one unit within the organization. This point has been reiterated by research showing that large organizations superficially adopt numerous simple innovations whether or not they are useful (Mohr, 1969).

Police innovations have been classified as either radical or incremental (King, 1998). Radical innovations, such as community oriented policing (COP), require extensive change within an organization (Moore et al., 1996). Conversely, incremental innovations do not modify
an organization on such a large scale. The adoption of a K-9 unit would not create the organization wide reform of COP. Although the above section outlines an important distinction between radical and incremental innovations, innovations can be defined by more exclusive categories.

Damanpour (1991) delineated incremental innovations into types. In Damanpour’s work, a technological innovation is a change in how work is done, whereas an administrative innovation is a modification of organizational structure. In the policing literature, Moore et al. (1996) disaggregated innovations into four types: strategic, technological, administrative, and programmatic. First, strategic innovations represent radical changes in organizational operations. Second, technological innovations represent products or tools in which help laborers perform their jobs. Third, administrative innovations represent alterations in management duties. Lastly, programmatic innovations are new operational programs or methods such as hate crimes units, foot patrols, and victim’s assistance programs (King, 1998). King (2000) used factor analysis to demonstrate that these innovation types can be further deconstructed into additional innovation types. Regardless, the overarching theme is that not all innovation types are the same; especially in regard to the amount of organizational change required for their adoption.

Operationalizing Innovation

Operationalizing innovation as a dependent variable has differed among organizational innovation researchers. A common method of operationalizing innovation is to assign an adoption score for organizations based on the time an innovation was adopted by the organization. This technique can be utilized to examine which stage of adoption certain types of organizations are likely to implement an innovation (Downs & Mohr, 1976). Second, a dichotomous measure of adoption versus nonadoption is another common type of innovation
Scholars can measure the innovativeness of an organization by simply summing the number of implemented innovations within a specific time span for each organization in the study. Nonetheless, Downs and Mohr (1976) suggested that measuring the extent to which an organization has adopted an innovation or the degree of commitment an organization has to an innovation would be the most useful measure of organizational innovation. Studies using this method could not only determine which factors influence innovation adoption broadly, but rather how these factors influence the complete infusion of these innovations. This method has been underutilized in policing literature. Unfortunately, the data for the present study does not allow the researcher to address this issue.

Conclusion

This chapter has reviewed the definitional issues with utilizing innovation as a dependent variable, and methods provided by past organizational researchers to improve organizational innovation research (Downs & Mohr, 1976; Damanpour, 1987; King, 2000). In summation, this chapter provides the foundation for defining innovation as a dependent variable. In the next chapter I will discuss organizational structure, environment, and context, demonstrate how past organizational scholars have operationalized these constructs, and present findings of past organizational innovation studies.
CHAPTER II

RESEARCHING ORGANIZATIONS

Organizational innovation is a complex phenomenon, and there is no shortage of explanations discussing why one organization may be more innovative than another organization. Pierce and Delbecq (1977) categorized these perspectives in the following manner: 1) explanations focusing on organizational structure, environment, and context 2) psychological explanations evaluating the value orientations of elite actors, 3) economic explanations addressing organizational size, resources, and competition, and 4) political explanations attributing innovation to conflict-bargaining activities. Studies examining multiple types of the above influences on innovation have demonstrated that organizational structure, environment, and context are better predictors of organizational innovation (Baldridge & Burnham, 1975; Kimberly & Evanisko, 1981; Hage & Aiken, 1964). Based on the findings of the aforementioned studies, this study will examine the effect of organizational structure, environment, and context on organizational innovation. This study will examine whether the adoption of research and planning units is the result of a need for organizational structural cohesion, or a rational response to external stimuli.

The following section defines elements of organizational structure, environment, and context. In addition, variable operationalizations from past studies are presented. Finally, this section will summarize previous findings examining the determinants of organizational innovation. Although past findings on the effects of organizational structure, environment, and context on organizational innovation may be presented for disparate innovation types, the present study will only use literature examining programmatic policing innovations to guide the analysis.

Open Versus Closed Systems

Until the 1960’s most organizational researchers portrayed organizations as closed
systems, autonomous from exogenous influences (Thompson, 1967); however, organizations are influenced by factors such as markets, clientele, politicians, and legislation, all of which are outside of organizational boundaries. Therefore, in order to gain a more robust understanding of organizational behavior, researchers began to envision organizations as open systems, influenced by factors outside of the organization’s boundaries (Katz & Kahn, 1966; Lawrence & Lorsch, 1967). The majority of modern organizational research has adopted the open systems perspective.

Particularly, the open systems perspective has been popular among police organizational scholars (Cordner, 1978; Langworthy, 1986; Zhao, 1996; King, 1998; Maguire, 2003; Wilson, 2006b). Police organizations routinely interact with outside community members and groups, thus it is intuitive that police organizations are shaped by external factors. Furthermore, exogenous factors such as local governments, economic trends, or new legislation are likely to influence the activities and outputs of police organizations. The current manuscript will utilize an open systems framework for studying the adoption of research and planning units by police organizations.

Organizational Structure

Organizations facilitate the achievement of complex goals by dividing labor into less complicated tasks and coordinating these efforts back into a final product. Organizational structure is the mechanism by which organizations divide labor and maintain task coordination (Scott, 1992). Organizational structure can be sub-divided into two components: complexity and control. Hall, Haas, and Johnson (1967) described complexity as the number of separate parts in an organization. Organizing the work of men requires sub-division (Blau, 1970), but the magnitude of complexity will vary according to the needs of individual organizations. On the
other hand, control represents an organization’s effort to maintain coordination. Organizations incorporate apparatuses to ensure each labor division independently functions in a manner that supports the overall objectives (Hsu, Marsh, Manner, 1983). The subsequent discussion will define the elements of organizational structure to be used in the analysis and examine how these elements have affected organizational innovation in past studies.

Complexity Components of Organizational Structure

**Vertical Differentiation.** Vertical differentiation represents the hierarchical shape of an organization from the top position to lowest level line worker (Hall, Johnson, & Haas, 1967; Pugh et al., 1968; Hsu, Marsh, Mannari, 1983). It is useful to visualize hierarchies as a pyramid. The height of the pyramid from the tip to the base represents the number of positions in the chain of command, and the width of the pyramid represents the number of employees at each command level (Maguire, 2003). Maguire (2003) measured vertical differentiation in the following ways: 1) segmentation, the number command levels, 2) concentration, the number of employees on each level, and 3) height, the social distance from the apex level employee to the line worker; however, other studies have chosen to only use one measure of vertical differentiation. For example, Evers, Bohlen, and Warren (1976) used the term stratification, but measured height by subtracting the lowest paid salary position from the highest paid position. King (2005) demonstrated that different types of hierarchies exist within police organizations. For example, one officer may have seniority for decisions based on length of tenure, but defer to a lower ranking officer in a certain situation that requires rank on a skills hierarchy. Nonetheless, policing scholars have also typically measured vertical differentiation by salary differential (Langworthy, 1986; Maguire, 1997; King, 1999).

Organizational scholars have agreed that innovativeness diminishes as the distance
between lower-tier workers and higher-tier workers increases (Pierce & Delbecq, 1977). But
Daft’s (1978) dual model of innovation suggested that administrative or programmatic
innovations may be less affected by vertical differentiation. In studying programmatic policing
innovations, King (1998) found vertical differentiation in police organizations only affected the
adoption of drug-oriented programmatic innovations. Additional, studies examining other
programmatic policing innovations may help to further understand the effect of vertical
differentiation on innovation.

Functional Differentiation. Functional differentiation, also referred to as horizontal
differentiation, is the division of labor amongst distinct departments or units (Hall, Johnson,
accomplish complex goals requires dividing labor into simpler tasks, and the creation of distinct
units functionally organizes tasks similar in nature. In profit-based organizations labor is often
divided into disparate departments for tasks such as manufacturing, marketing, and sales. An
additive measure of functional differentiation would regard an organization with only
manufacturing and sales departments as less functionally differentiated than an organization with
a manufacturing, marketing, and sales departments. Police departments are notorious for creating
specialized units to deal with problems (Sparrow, Moore, & Kennedy, 1990; Bayley, 1994).
Police scholars have traditionally measured functional differentiation by summing the number of
specialized units a police organization operates (Langworthy, 1986; Maguire, 1997, 2003; King,

Pierce and Delbecq (1977) proposed that functional differentiation should be positively
related to innovation. Baldridge and Burnham (1975) suggested increased functional
differentiation creates knowledgeable employees with narrowly focused skill sets. In other
words, a consistent work role creates job specific experts, and innovation ultimately occurs because employees are constantly determining ways to improve their work efficiency. Nonetheless, functional differentiation has been found to more adequately explain technical innovations than any other innovation type (Damanpour, 1987).

On the other hand, disaggregating labor into distinct units exacerbates the need for an organization to develop methods to control its employees (Baldridge & Burnham, 1975), and may increase the likelihood of administrative innovations. Furthermore, it is reasonable that an organization with higher levels of functional differentiation is more prone to adopt additional units and programs based on its past record of dividing labor; however, neither Zhao (1995) nor King (1998) found a relationship between functional differentiation and policing programmatic innovation. Again, these mixed-findings reiterate the importance of considering innovation type in organizational studies, and warrants further examination.

**Spatial Differentiation.** Organizational scholars refer the geographical dispersion of organizational headquarters, departments, or offices as spatial differentiation (Maguire, 2003). In police organizations spatial differentiation may include the number precinct stations, districts, or patrol beats (Langworthy, 1986). A police organization that has one central location is less spatially differentiated than an organization that disaggregates its organization into individual neighborhood level headquarters.

In general, Pierce and Delbecq (1977) predict that spatially differentiated organizations are more likely to adopt innovations. Wilson (2006b) found that spatial differentiation had no effect on the radical implementation of COP. Additional findings from the doctoral dissertations of Zhao (1995) and King (1998) show that spatial differentiation of police organizations was not related with the implementation of programmatic innovations.
Control Components of Organizational Structure

**Formalization.** Organizational formalization is the extent to which organizations have codified procedures, roles, rules, or operating directives (Hall, Johnson, & Haas, 1967; Pugh et al., 1968, Hsu, Marsh, & Mannari, 1983). In the policing literature, the amount of discretion police officers possess while performing everyday duties has been frequently noted (Klockars, 1985; Walker, 1993). A patrol officer’s job is almost completely autonomous, and officers are required to make split second decisions in highly volatile situations. In order to avoid scrutiny for decisions made during stressful situations, police organizations have instituted numerous policies describing the appropriateness of discharging a firearm, pursuing suspects in automobiles, arresting specific types of offenders, etcetera (Walker, 1993; Mastrofski, 2004). Clearly, formalization serves a vital role in police organizations. In prior policing studies, King (1998), Maguire (2003), and Wilson (2006b) have all measured formalization by creating additive indexes based on organizational responses to questions regarding whether or not an agency has adopted a formal policy on a particular concept.

Pierce and Delbecq (1977) predict that formalization in organizations restricts innovation. Hage and Aiken (1967) supported this assertion while studying programmatic innovation in public services agencies. Their findings showed that low job codification was associated with higher levels of innovation, and organizations with strict rule manuals were less innovative. Again, these findings were reconfirmed in a three year study of programmatic innovation adoption by health and welfare organizations (Hage & Dewar, 1973). Nonetheless, research in police organizations on programmatic innovations has not returned consistent findings. Only King (1998) found formalization to only affect the implementation of drug-focused programmatic innovations.
**Professionalism.** Professionalism is the extent of technical knowledge an organization’s members possesses (Damanpour, 1987). Organizational members become more professional by pursuing higher levels of formal education, reading literature relevant to their field, or attending professional meetings (Hage & Dewar, 1973). In a study of library innovativeness, professionalism was measured as the number of certified librarians within the organization (Damanpour, 1987). The attainment of a particular degree has been another useful measure of organizational professionalism (Daft, 1972). King (1998) measured police professionalism as the highest education level required for new recruits and also by summing the number of classroom and field training hours required for new recruits.

It is reasonable that professionalism increases innovation because it demonstrates a commitment towards advancement from employees, instills a sense of self confidence in employees, and introduces employees to different areas of a given field (Pierce & Delbecq, 1977). Overall, professionalism has been a better predictor of technological innovations (Daft, 1978; Damanpour, 1987). Additionally, neither Zhao (1995) nor King (1998) found any relationship between professionalism and programmatic innovations.

**Organizational Environment & Context**

**Organizational Environment.** An organizational environment is comprised of the external factors that affect an organization. Contingency theorists contend that organizations rationally seek effectiveness, and effectiveness is achieved by strategically structuring an organization in best fit with its environment (Donaldson, 1995). Conversely, Institutional theorists Meyer and Rowan (1977) argued that myths from an organization’s institutional environment better predicted organizational structure.

Regardless of theoretical orientation, over time scholars have concisely defined
organizational environments. Early organizational scholars simply contrasted environmental uncertainty and environmental stability (Lawrence & Lorsch, 1967; Thompson, 1967). Environmental uncertainty deals with an organization’s ability to predict relevant environmental influences, whereas environmental stability is the fluctuation of relevant environmental factors. Later work expanded the concept of environment into a multi-dimensional construct to allow for a more parsimonious operationalization of environmental variables (Jurkovich, 1974; Aldrich, 1979; Dess & Beard, 1984).

Policing organizational scholars have measured organizational environment by using U.S. Census data to create measures of social disorganization and environmental heterogeneity (King, 1999; Maguire, 2003; Wilson, 2006b). Social disorganization theory suggests that crime is not randomly distributed, but rather concentrates in areas with higher concentrations of ethnic heterogeneity and citizens from low socioeconomic standing (Shaw & McKay, 1942). Therefore, police organizations in socially disorganized environments are likely to operate differently than police organizations in non-socially disorganized jurisdictions. Measures of social disorganization from prior police organizational studies include: city size, population mobility, unemployment rates, percentage of families below the poverty line, proportion of married households, and proportion of high school graduates within an organizational environment (King, 1999; Maguire, 2003; Wilson, 2006b). Conversely, heterogeneity measures are used to demonstrate the predictability of an organization’s environment. Organizations in heterogeneous environments may not be able to adequately shape organizational operations in order to stay in balance with exogenous demands because a higher degree of diversity likely means a wider range of expectations for an organization. Past measures of environmental heterogeneity have been concerned with age, race, occupation, educational attainment, and income (King, 1999;
Uncertainty in an organization’s environments is likely to be positively associated with the adoption of innovations (Pierce & Delbecq, 1977). Organizations in unpredictable environments are not able to become comfortable in their practices, and constantly look for ways to enhance operations. Essentially, environmental uncertainty provides a stimulus to initiate innovativeness (Mohr, 1969). Baldridge and Burnham (1975) examining innovativeness in different school districts found a positive relationship with environmental heterogeneity, but no discernible relationship between innovation and measures of environmental change.

The policing literature shows relationships between environmental factors and organizational innovation. Wilson (2006b) examined the radical adoption of COP amongst large American police agencies and found that population mobility influenced COP implementation. King (1998) found that the percentage of married persons in the population had an effect on programmatic innovations. Furthermore, Zhao (1995) found that city population, percentage of homeowners, percentage of nonwhites, and higher unemployment rates all associated with programmatic innovations. These findings not only suggest that organizational environments play a significant role in predicting innovation, but also how the adoption of different innovation types may be influenced by different variables.

**Organizational Age.** Organizational age is most often created by subtracting the current year from an organization’s founding year (King, 1999; Maguire, 2003; Wilson, 2006b). Although organizational scholars have examined relationships between organizational age and a myriad of outcomes, the majority of research has focused on the effects of organizational age on organizational structure; however, research findings have been inconclusive (Meyer and Brown 1978; Brown and Schneck, 1979; Marsh and Mannari, 1981).
Similarly, studies examining organizational age in police organizations have mostly been concerned with the effects of organizational age and structure (King, 1999; Maguire, 2003; Wilson, 2006b). King (1999) determined that organizational age had no relationship with most elements of organizational structure except for a significant inverse relationship between organizational age and the proportion of civilian employees. Wilson (2006b), studying community-oriented policing implementation, also reported no relationship between organizational age and structural complexity or control. Conversely, Maguire (2003) found a positive relationship between organizational age and both vertical differentiation and spatial differentiation.

Nonetheless, general organizational researchers have predicted an inverse relationship between age and innovation. For example, Pierce and Delbecq's (1977) model of organizational innovation predicts that organizational age will be negatively related to innovation; however, this conclusion is based on the operationalization of organizational age as the length of tenure for key organization members. This measure of organizational age better describes the individuals within an organization than the organization itself. Kimberly and Evanisko (1981) operationalized age as the number of years an organization existed, and found organizational age to be a significant predictor of technical innovation adoption, but not administrative innovations. In the policing literature, organizational age has been found to be a significant predictor in explaining the implementation of programmatic innovations (King, 1998; Wilson, 2006b). A common adage is that people grow wiser as they age, and it is likely that this notion is applicable to organizations. Therefore, it should be expected that as organizations age they become more innovative based on their past experiences.

Organizational Size. Some studies have categorized organizational size as a structural
variable, but most organizational scholars classify organizational size as a context variable (Maguire, 2003). Hall, Johnson, and Haas (1967) measured organizational size as the total number of paid employees in an organization. Evers, Bohlen, and Warren (1976) also measured organization size by summing the number of employees in local farming cooperatives; however, they used a logarithmic transformation on their size variable based on the advice of Child (1973). Hsu, Marsh, and Mannari (1983) measured size using a logarithmic transformation of the total number of employees, and also as the total amount of fixed assets. Nonetheless, policing scholars have used the total number of full-time employees, both sworn and civilian (Langworthy, 1986; King, 1999; Maguire, 2003; Wilson, 2006b).

While some have scholars have argued that size does not affect organizational innovation (Mohr, 1969; Utterback, 1974), numerous other studies have identified organizational size as a significant factor in organizational innovation (Aiken & Hage, 1971; Moch & Morse, 1977). Explanations for the positive relationship between organizational size and the adoption of innovations are numerous. Hage and Aiken (1967) suggested that increasing organizational size increases organizational differentiation and the amount of available resources, and that those factors ultimately facilitate innovation adoption. Baldridge and Burnham (1975) demonstrated that size influences the adoption of innovations, but attribute this finding to the presumption that organizational size increases occupational specialization, and as a result, occupational experts initiate more innovations. These explanations suggest that size technically influences other organizational structural variables which in return influence innovation (Pierce & Delbecq, 1977).

Regardless, Damanpour (1987) hypothesized that increasing organizational size will significantly influence all innovation types, but his analysis only finds organizational size to
influence the adoption of administrative innovations. Although policing organizational scholars have examined the effect of organizational size on innovation, few studies have examined the relationship between organizational size and programmatic innovations. King (1998) found that crime oriented programmatic innovations were influenced by size, but the same relationship was not found with other sub-types of programmatic innovation. Conversely, Wilson (2006b) found that organizational size was not related to radical COP implementation. The importance of organizational size may differ by innovation type, and further research is warranted to examine this conundrum.

Conclusion

In this chapter, I have demonstrated that the literature regarding the determinants of organizational innovation is highly contradictory. As scholars begin to recognize the importance of distinguishing among innovation types, it will become more possible to predict which factors are likely to aide or impede specific innovations. Additionally, this chapter has shown that the adoption of programmatic innovations by police organizations (the innovation type of research and planning units) has been affected by organizational structure, environment, and context, but the mixed findings warrant further study. Zhao (1995) reported that city population size, percent of homeowners, percent nonwhite, and percent unemployed are all positively related to the adoption of programmatic innovations. King (1998) reported that organizational age, size, specialization, vertical differentiation, and formalization were all related to at least one sub-type of programmatic innovation. The following chapter will utilize the literature from this chapter to guide the present analysis. I will outline the data, variables, expected relationships, methods, and limitations for the empirical assessment of research and planning unit implementation by police organizations.
CHAPTER III
DATA & METHODS

The present analysis is concerned with the adoption of research and planning units by municipal police departments employing at least 100 full-time sworn officers. Data utilized in this study was derived from several sources: 1) the 2000 Bureau of Justice Statistics’ Census of State and Local Law Enforcement Agencies (Law Enforcement Census), 2) the Bureau of Justice Statistics’ 2003 Law Enforcement Administrative and Management Statistics survey (LEMAS), 3) the 2000 decennial U.S. Census, and 4) a survey I conducted from January 2009 until May 2009 regarding research and planning units within law enforcement agencies employing a minimum of 100 full-time sworn officers (Haberman Survey).

Although none of the variables for this study are available from one particular pre-existing dataset, by combining all of the above data sets I was able to derive measures of organizational structure, environment, and context. The rest of this chapter will provide additional background on these data sources, describe the sample for the present study, define the independent and dependent variables, predict how these variables will interact, describe the analysis procedure, and acknowledge limitations of this study.

Data Sources

Law Enforcement Census. Since 1992, the Bureau of Justice Statistics has conducted the Census of State and Local Law Enforcement agencies. The current study integrates data from the 2000 Law Enforcement Census into the analysis. Although Maguire et. al. (1998) pointed out the difficulty in locating the number of law enforcement agencies in the U.S., the law enforcement census is the most comprehensive dataset available. Therefore, the sample for this study was derived using this dataset and integrated with other datasets in order to obtain
adequate measures for each of the variables in the present analysis.

**LEMAS.** Every two to three years since 1987 the Bureau of Justice Statistics has sponsored a survey of American law enforcement agencies. The survey includes questions on the responding agency’s size and structure, salary levels, jurisdiction, etcetera. The present study utilizes the 2003 version of LEMAS. The data was downloaded via the Inter-University Consortium for Political and Social Science Research web-site. Although the LEMAS data is an integral part of the present data set, many of the variables tested in the current analysis are not available when downloading the dataset. When applicable, the independent variables section will outline specifically how the LEMAS data were manipulated in order to create certain variables.

**U.S. Census.** The U.S Census Bureau conducts the U.S. census every 10 years. The U.S census data on general, social, and economic demographics will be used to construct measures of organizational environment. As discussed in the next paragraph, data for the present analysis was collected in 2009. Therefore, the present study will use the 2000 U.S Census’ data to ensure enough temporal lag between independent and dependent variables.

**Haberman Survey.** The Haberman survey was conducted from January 2009 until May 2009. The survey was sent to a random sample of 671 municipal police departments, sheriff’s offices, and state police agencies employing 100 or more full-time sworn officers. After only one mailing, 102 agencies of the original 671 returned completed responses by May 2009, a 15% response rate. The Haberman survey asked specific questions about the structure, operations, and workload of research and planning units.

**Sample**

The sample was derived from respondents to the Haberman survey. The Haberman survey was a random sample of municipal police departments, sheriff’s offices, and state police
agencies employing 100 or more full-time sworn officers from the 2000 Law Enforcement Census (n=671). The response rate for the entire survey sample was 15% (n=102). Although the Haberman survey was also sent to sheriff offices and state police agencies, the overall sample of 671 only comprised of 400 municipal police agencies. The response rate for municipal police agencies was also 15% (n=60/400). The Los Angeles Police Department and the Chicago Police Department are statistical outliers in the dataset, and were eliminated from the present analysis. The final sample includes 58 municipal police departments employing over 100 full-time sworn officers.

**Dependent Variable**

The dependent variable in the current study is the implementation of research and planning units (a programmatic innovation) by municipal police departments. The Haberman study asked agencies to state dichotomously whether or not their organization assigned employees to a separate unit for researching and planning duties. The answer provided by responding agencies to that question will be utilized for the dichotomous variable. For the 58 municipal police departments in the sample, 34 indicated having a separate research and planning unit.

**Independent Variables**

**Functional Differentiation.** When studying organizations, the number of separate units or departments that an organization creates to disaggregate labor is referred to as functional differentiation. I created a measure of functional differentiation by using an additive index for the number of separate units each agency reported to operate in the 2003 LEMAS survey. The LEMAS survey asked agencies to indicate whether or not it had a distinct unit for 22 separate possibilities; however, one possible response category was whether or not an agency had adopted
a research and planning unit and this response was not included in the present index. Eliminating it from the functional differentiation index was appropriate because the adoption of an entity is not useful in explaining the implementation of that same entity. Therefore, the final functional differentiation index’s possible range was from 0 to 21. The actual variable ranges from 0 to 21 and has a mean value of 9.07. Descriptive statistics for all structural independent variables are provided in Table 1.

**Vertical Differentiation.** Vertical differentiation represents the distance from the highest-level employee to the lowest-level line worker. The present analysis derived a measure of vertical differentiation from the 2003 LEMAS data. In LEMAS agencies are asked to indicate the maximum possible salary for the top police executive as well as the minimum possible salary for patrol officers. Vertical differentiation was calculated by subtracting the lowest paid position’s salary from the highest salary and dividing that value by the lowest paid officer’s salary in order to create a standardized measure across all police organizations. The resulting value would represent how much more the top executive earned than the lowest level worker. This variable ranges from 1.0 to 5.35 and has a mean of 2.34. For the entire sample, on average the top executive makes 2.34 times the amount the lowest paid officer receives.

**Spatial Differentiation.** Spatial differentiation represents the geographical dispersion of an organization’s headquarters or offices. Police organizations spatially differentiate by creating either sub-headquarter stations or community policing neighborhood stations. LEMAS data contains counts for the number of separate permanent headquarters police organizations operate, and these numbers were used for an indicator of spatial differentiation. The spatial differentiation variable for the current data set has a mean of 4.93 and ranges from 0 to 24 permanent headquarters; however this variable was not found to be normally distributed. In order to prevent
this variable from affecting the analysis a logarithmic transformation was performed on this variable (Child, 1973; Maguire, 2003). The resulting values ranges from 0 to 3.18, and has a mean of 1.17.

**Formalization.** An organization is considered more formalized than another organization when it has adopted more formal policies to constrict the actions of its workers. The 2003 LEMAS survey provides 15 possible topics in which an agency is to indicate whether or not it has adopted a formal policy. Utilizing an additive index, the mean number of formalized policies adopted by agencies in the current sample was 13.45 policies. Formalization ranged from minimum of 9 policies to some organizations adopting all 15 policies.

**Professionalism.** The current study employs two separate measures of professionalism. For each of these measures, a higher requirement for education and/or training is considered more professionalized. First, LEMAS asks policing organizations to indicate the minimum degree requirement for new recruits. The possible answers include: 1) four year college degree, 2) two year college degree, 3) some college 4) high school diploma or equivalent, 5) no formal education requirement. Second, professionalism is measured by the sum of classroom and field training hours required for new recruits. The mean number of hourly requirements for new recruits is 1,403.3 hours; with the fewest number of required hours being 424 and greatest number of required training hours being 3,432.

**City Size.** The data for city size was found in the U.S. Census. City population from the 2000 U.S Census was used to describe city size. The most populous city in the current study is San Antonio, Texas with a population of 1,144,646. Conversely, Fort Pierce, Florida is the least populous city in the sample with a population of 37,516. The mean population for the present sample is 185,792.9. The city population variable is not normally distributed, so it was
logarithmically transformed to impose normality. The resulting range is from 10.53 to 13.95 with a mean of 11.73.

Table 1. Descriptive Statistics for Organizational Structure Independent Variables (n=56)

<table>
<thead>
<tr>
<th>Concept</th>
<th>Measures</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRUCTURE</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Functional Differentiation</td>
<td>Number of full time special units</td>
<td>0.00</td>
<td>21.00</td>
<td>9.07</td>
<td>8.50</td>
<td>4.70</td>
</tr>
<tr>
<td>Vertical Differentiation</td>
<td>Height (Pay difference in org.)</td>
<td>1.00</td>
<td>5.35</td>
<td>2.34</td>
<td>2.19</td>
<td>0.83</td>
</tr>
<tr>
<td>Spatial Differentiation+</td>
<td>Number of permanent districts, precincts, divisions, and neighborhood stations</td>
<td>0.00</td>
<td>3.18</td>
<td>1.17</td>
<td>1.10</td>
<td>0.92</td>
</tr>
<tr>
<td>Formalization</td>
<td>Number of written policies on 15 possible issues</td>
<td>9.00</td>
<td>15.00</td>
<td>13.45</td>
<td>14.00</td>
<td>1.55</td>
</tr>
<tr>
<td>Professionalism (Education)</td>
<td>Minimum education level for new recruits</td>
<td>1.00</td>
<td>4.00</td>
<td>1.52</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>0 = no requirement</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>1 = high school/equivalent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>2 = some college</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>3 = two year degree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 = four year degree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professionalism (Training)</td>
<td>Number of classroom and field training hours for new recruits</td>
<td>424.00</td>
<td>3432.00</td>
<td>1403.30</td>
<td>1326.50</td>
<td>433.18</td>
</tr>
</tbody>
</table>


*Logarithmically Transformed

**Age Heterogeneity.** A Gibbs-Martin D was used to compute age heterogeneity from U.S. Census data. The Gibbs Martin D formula is:

\[ D = 1 - \sum p_i^2 \]

In short, \( p_i \) represents the proportional value for each individual category within a construct. The maximum value for a range of data using a Gibbs Martin D is one minus the inverse number of categories that the data has been coded into (Gibbs & Martin, 1962). The 2000 U.S. Census defines age into 13 categories, so the possible values for the age heterogeneity Gibbs-Martin D ranges from 0 to 1- 1/13 (0 to .92). The current sample has a minimum value of
.87, a maximum value of .92, and a mean of .90. These values suggest that the cities in the sample do not vary much in terms of age heterogeneity. Descriptive statistics for environmental and context independent variables are presented in Table 2.

**Racial Heterogeneity.** A Gibbs Martin D was also used to calculate a measure of racial heterogeneity for each of the organizational environments in the sample. The U.S. Census codes race into 5 categories: 1) White, 2) African American or Black, 3) American Native or Alaska Native, 4) Native Hawaiian or Pacific Islander, 5) Other. The possible range of values for racial heterogeneity using a Gibbs-Martin D is from 0 to .80; however, the actual racial heterogeneity values for the present sample ranges from .07 to .64. The mean for racial heterogeneity is .39. This suggests the environmental racial composition varies extensively across the sample.

**Occupational Heterogeneity.** Occupational heterogeneity represents the number of different job categories in a locale. The 2000 U.S. Census classified occupations into 13 categories: 1) farming, fishing, hunting, or mining, 2) construction, 3) manufacturing, 4) wholesale trade, 5) retail trade, 6) transportation or utilities, 7) information, 8) finance or real estate, 9) professional, scientific, or management services, 10) education, health, or social services, 11) arts, entertainment, recreation, or food services, 12) public administration, 13) other. Using the same Gibbs-Martin D approach from before, the occupational heterogeneity of the present sample had a minimum value of .79, a maximum value of .90, and a mean of .88. This suggests all the environments in the present study have a consistently high level of heterogeneity.

**Educational heterogeneity.** In the U.S Census, education is provided in 7 categories: 1) Less than 9th grade, 2) 9th to 12th grade, no diploma, 3) High school graduate or equivalence, 4) Some college, 5) Associate degree, 6) Bachelor degree, 7) Graduate or professional degree. Again, the measure of educational heterogeneity was created using a Gibbs-Martin D calculation.
The maximum value for educational heterogeneity based on a 7 category classification is .86. The current sample’s educational heterogeneity ranged from a minimum of .67 to a maximum of .84. This range suggests that educational heterogeneity varies only slightly across the sample.

**Income Heterogeneity.** Income measures from the 2000 U.S. Census are provided in 10 categories. The categories include 1) Less than $10,000, 2) $10,000 to $14,999, 3) $15,000 to $24,999, 4) $25,000 to $34,999, 5) $35,000 to $49,999, 6) $50,000 to $74,999, 7) $75,000 to $99,999, 8) $100,000 to $149,999, 9) $150,000 to $199,999, 10) $200,000 or more. After calculating a Gibbs-Martin D for income heterogeneity, the mean value is .86. The lowest value for heterogeneity is .85 with the highest ranging to .88. Clearly, the environments in the present sample have minimal variance for income heterogeneity.

**Percent Unemployment.** The 2000 U.S. Census readily provides a percentage of unemployed citizens 16 years or older within a locale. It is a common belief in criminological literature that unemployment and poverty exacerbates crime problems. A higher percentage of unemployment would be indicative of a higher amount of social disorganization. Unemployment ranges from 1.6% to 6.7% with a mean value of 3.96% for the organizations’ cities in the sample.

**Poverty.** Poverty is measured as the percentage of households whose income falls below the poverty line out of the total number of households in a city. This data is easily obtainable from the 2000 U.S. Census. The mean value for poverty is 10.76% and ranges from a minimum value of 1.6% to a maximum value of 25.4%.

**Married Households.** The percentage of non-married households was taken from the 2000 U.S. Census. The number of non-married households in the current study ranges from 30.8% to 72.5% of all households within a city. The mean number of married households is 53.61%. This variable has a wide range of variance, and is normally distributed.
High school graduates. The U.S Census tracks the percentage of citizens 25 and older who at minimum have attained a high school diploma or equivalence certificate. The present study is concerned with the percentage of non-high school graduates as a proxy measure of social disorganization. In the current sample, the mean percentage of non-high school graduates is 20.28%, and the variable ranges from 3.7% to 56.8%.

Organizational Age. Organizational age in the present study is operationalized as the total number of years the organization reports being in operation. The law enforcement census asks agencies to indicate the year their organization began operating, and this year was subtracted from the current year, 2009, to calculate the total years the organization was in operation (King, 1999). The mean age of police organizations in the current sample is 109.51 with the youngest organization being 7 years old and the oldest organization being 195 years old.

Organizational Size. Although other measures of organizational size have been used by previous organizational researchers, the present study summed the actual number of full-time employees to compute organizational size. These measures were obtained from the 2003 LEMAS data. The organizational size mean is 511.82 employees, and ranges from 111 to 2,583 employees, but the variable was not found to be normally distributed. Again, a logarithmic transformation was performed on the variable to give the resulting mean of 5.81, and a range from 4.71 to 7.86.
Table 2. Descriptive Statistics for Organizational Environment & Context Independent Variables

<table>
<thead>
<tr>
<th>Concept</th>
<th>Measures</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVIRONMENT</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City Population+</td>
<td>2000 Population</td>
<td>10.53</td>
<td>13.95</td>
<td>11.73</td>
<td>11.49</td>
<td>0.85</td>
<td>58</td>
</tr>
<tr>
<td>Population Mobility</td>
<td>Percent of persons 5+ years old living in a different house in 1995</td>
<td>31.90</td>
<td>66.40</td>
<td>49.73</td>
<td>49.65</td>
<td>7.30</td>
<td>58</td>
</tr>
<tr>
<td>Age Heterogeneity</td>
<td>Gibbs-Martin D of age</td>
<td>0.87</td>
<td>0.92</td>
<td>0.90</td>
<td>0.91</td>
<td>0.01</td>
<td>58</td>
</tr>
<tr>
<td>Racial Heterogeneity</td>
<td>Gibbs-Martin D of race</td>
<td>0.07</td>
<td>0.64</td>
<td>0.39</td>
<td>0.43</td>
<td>0.14</td>
<td>58</td>
</tr>
<tr>
<td>Occupational Heterogeneity</td>
<td>Gibbs-Martin D of occupations</td>
<td>0.79</td>
<td>0.90</td>
<td>0.88</td>
<td>0.88</td>
<td>0.02</td>
<td>58</td>
</tr>
<tr>
<td>Educational Heterogeneity</td>
<td>Gibbs-Martin D of education</td>
<td>0.67</td>
<td>0.84</td>
<td>0.80</td>
<td>0.81</td>
<td>0.03</td>
<td>58</td>
</tr>
<tr>
<td>Income Heterogeneity</td>
<td>Gibbs-Martin D of income</td>
<td>0.85</td>
<td>0.88</td>
<td>0.86</td>
<td>0.86</td>
<td>0.01</td>
<td>58</td>
</tr>
<tr>
<td>Unemployment</td>
<td>Percent 16+ year olds in workforce unemployed</td>
<td>1.60</td>
<td>6.70</td>
<td>3.96</td>
<td>3.95</td>
<td>1.28</td>
<td>58</td>
</tr>
<tr>
<td>Poverty</td>
<td>Percent of households below the poverty line</td>
<td>1.60</td>
<td>25.40</td>
<td>10.76</td>
<td>10.30</td>
<td>6.64</td>
<td>58</td>
</tr>
<tr>
<td>Married Households</td>
<td>Percent of households not married</td>
<td>30.80</td>
<td>72.50</td>
<td>53.61</td>
<td>54.10</td>
<td>10.10</td>
<td>58</td>
</tr>
<tr>
<td>High School Graduates</td>
<td>Percent of 25+ year olds who did not graduate from high school</td>
<td>3.70</td>
<td>56.80</td>
<td>20.28</td>
<td>19.90</td>
<td>10.32</td>
<td>58</td>
</tr>
<tr>
<td>CONTEXT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational Size*+</td>
<td>Actual Number of full time employees</td>
<td>4.71</td>
<td>7.86</td>
<td>5.81</td>
<td>5.60</td>
<td>0.87</td>
<td>56</td>
</tr>
<tr>
<td>Organizational Age**</td>
<td>2009 minus the year of organizational formation</td>
<td>7.00</td>
<td>195.00</td>
<td>109.51</td>
<td>112.00</td>
<td>35.59</td>
<td>55</td>
</tr>
</tbody>
</table>

+Logarithmically Transformed

Hypotheses

The operationalization of the aforesaid variables is consistent with past policing innovation research, so this literature will be used as guide to hypothesize the expected effect of the independent variables. Although far more police innovation studies exist, the present study will only use Zhao (1995) and King (1998) as a guide for the present analysis. Other studies
have examined innovations types that are not analogous to research and planning units, and the earlier sections of this manuscript have made it clear that much of the discrepancy amongst innovation research is rooted in the failure for researchers to acknowledge innovation type.

This study will discern whether organizational structure or organizational environment is a better predictor of research and planning unit adoption. Therefore, the first hypothesis states that organizations with large, complex structures will be more likely to adopt research and planning units. The second hypothesis states that organizations with more heterogeneous and socially disorganized environments will more likely to adopt research and planning units. This study will analyze the adoption of research and planning units with each independent variable separately. The rest of this section will outline the expected relationship for each individual independent variable.

Wilson (2006a) found that organizational structural complexity could not accurately be aggregated into one measure. The present study has three structural complexity independent variables: 1) vertical differentiation, 2) functional differentiation and 3) spatial differentiation. First, vertical differentiation is thought to impede organizational innovation. King’s (1998) paper is the only policing organizational study to find a relationship between vertical differentiation and programmatic innovations. King found that vertical differentiation increased the likelihood for an organization to adopt drug-oriented programmatic innovations. In the present analysis it is hypothesized that vertical differentiation will be positively related to the adoption of research and planning units. As the distance between the administration and line level employees increases, the need for mechanisms to increase organizational cohesion increases. This suggests that research and planning units may be more beneficial for vertically segmented organizations.

Second, functional differentiation will be positively related to the adoption of research
and planning units. Even though Zhao (1995) and King (1998) found no relationship between functional differentiation and innovation adoption, the implementation of a research and planning unit represents an increase in functional differentiation. Thus, organizations that have greater numbers of special units should be more likely to create additional units as the need arises.

Finally, spatial differentiation should also be positively related to the implementation of research and planning units. Again, Zhao (1995) and King (1998) found no effect between spatial differentiation and programmatic innovation adoption. Regardless, it is logical that an organization with a high magnitude of spatial differentiation would require a greater number of procedures to retain organizational cohesion. A research and planning unit would be a logical step towards creating organizational knowledge and cohesion. In summation, all three measures of organizational structural complexity should be positively related to the adoption of research and planning units.

Organizational structural control in the present study is measured by formalization and professionalism. Formalization is typically believed to impede innovation within organizations: however, the present study predicts that formalization will be positively related to the implementation of research and planning units. Police officers exercise more discretion than any other occupation, and formalized policy is designed to decrease discretion in order to improve decision-making by officers. In other words, police organizations that are more formalized are actually organizations that have rationally sought to improve officer performance. Moreover, research and planning units are an innovation to improve organizational effectiveness. Since formalization in police organizations is one effort to improve organizational efficiency, it is likely to predict the adoption of a research and planning units, or another attempt to increase
Professionalism has not been found to be related to the adoption of programmatic policing innovations (Zhao, 1995; King, 1998). Nonetheless, if any relationship between professionalism and the adoption of research and planning units by police organizations is found in the present analysis, then it is likely to be a positive relationship. Pierce & Delbecq (1977) suggested that professionalism introduces employees to different areas of a given field and creates more knowledgeable employees. Furthermore, employees that have achieved higher education levels exhibit a commitment to their field, and are more likely to contribute its advancement. In short, the current study predicts that both measures of organizational structural control will be positively associated with the adoption of research and planning units.

First, it is expected that all organizational environment variables will be positively related to the adoption of research and planning units. It is assumed that the rationale for adopting a research and planning unit is to improve organizational efficiency and the more tumultuous an organization’s environment, the more likely a research and planning unit is needed to address problems. Zhao (1995) found positive relationships for the environmental variables city size, percentage of home owners, percentage of nonwhites, and unemployment rate. King (1998) only found a statistically significant relationship between percentage of unmarried persons and programmatic innovations. Nonetheless, all of organizational environment variables should be positively related to the adoption of research and planning units.

Pierce and Delbecq (1977) suggested that organizational age will be inversely related to innovation. Conversely, King (1998) found that organizational age was a significant determinant in the adoption of programmatic community policing innovations. As organizations age they become more aware of effective practices, and as a result become more likely to adopt
innovations to increase organizational effectiveness. Research and planning units are efforts to increase organizational effectiveness. Therefore, I hypothesize that organizational age will be positively related to the adoption of research and planning units.

Literature addressing the relationship between organizational size and programmatic innovation is scarce. For crime-oriented programmatic innovations, King (1998) found a significant positive relationship between organizational size and innovation adoption; however, this relationship was not found with other programmatic innovation types. I expect organizational size to be positively related to the adoption of research and planning units. Intuitively, larger organizations require more efforts to continue efficient operation. Therefore, the usefulness of a research and planning unit is greater for an organization as its size increases.

Analysis Procedures

The present study will use the independent samples T-test statistic to analyze the data. A T-test can determine whether the mean difference between two nominal categories is statistically significant by accounting for the variability in each sample’s distribution. The T-test calculates a T-value which is then compared to a standardized table to determine statistical significance. The present analysis utilizes the Statistical Package for the Social Sciences computer program to evaluate the data.

Limitations

No study is exempt from limitations. The low sample size in this study is the most obvious limitation. A sample size of 58 municipal police departments makes the findings of this study hard to generalize to all American municipal police departments. Unfortunately, financial constraints inhibited a second wave of survey mailings. Regardless, the sample for this study was randomly generated from all known law enforcement organizations meeting the study’s criterion.
Therefore, although the findings from this study should be interpreted with caution, they are still methodologically correct and may serve as a framework for future studies. Ultimately, the limitation of having a small sample size does not automatically render this study futile.

Additionally, this study only examines one type of innovation: a programmatic innovation. I have explicitly stated in this thesis that studies examining the determinants of organizational innovation have been plagued by researchers failing to recognize the type of innovation in their study. Therefore, the findings of this study must be interpreted with caution. Research and planning units are a unique type of innovation and the determinants of their adoption may not apply to all other types of innovation. Although the type of innovation in this study limits the generalizability of these findings to other innovations types, the findings from this study are still important for encouraging the future adoption research and planning units.

Finally, the adoption of research and planning units is a multivariate phenomenon; however, a bivariate statistic was used in the present analysis\(^1\). While the T-test analysis will provide some insight into the adoption of research and planning units, additional attempts to use multivariate statistics should be made in the future. This study will set the foundations for scholars to study this phenomenon using more advanced methodologies in the future. After recognizing these limitations, I still believe the findings of this study to be fruitful.

Conclusion

In this chapter, the data was described, the independent and dependent variables were operationalized, the statistical model was presented, and limitations of this study were acknowledged. In summation, this chapter has provided the framework for the discussion in the subsequent chapter. Chapter 4 of this study will present the analysis findings, and will conclude with a discussion of these findings.

\(^1\) This notion is discussed in detail on page 38.
CHAPTER IV
ANALYSIS & CONCLUSION

The overarching purpose of this study is to discern whether the adoption of research and planning units is better predicted by an organization’s need to coordinate its complex organizational structure or as a response to a heterogeneous and unpredictable organizational environment. This study utilizes the independent samples T-test to test these competing hypotheses. Organizational researchers would typically employ regression statistics to evaluate multivariate phenomenon; however, attempts to use ordinary least squares and logistic regression on the present data produced inconsistent results. Essentially, the models would produce statistically significant results for some variables, but when additional variables were introduced into the models those variables would no longer remain statistically significant. Additionally, variables that were not previously statistically significant would begin to demonstrate statistical significance. Unfortunately, there was no clear pattern as to how the variables were affecting the models and the attempts to use regression analyses were discarded. Future research with more robust samples should employ a multivariate statistic in order to determine which variables explain the most variance in the adoption of research and planning units. Nonetheless, utilizing a T-test in the present analysis may still provide insight in the adoption of research and planning units by police organizations.

Organizational Structure

Multiple organizational structure variables were found to be statistically significant. Table 3 presents the analysis results for all organizational structure variables. The T-Test analysis found organizational complexity variables to be significantly related to the adoption of research and planning units. Specifically, functional differentiation and spatial differentiation are statistically
significant predictors of research and planning unit adoption by police organizations. For functional differentiation, the T-value of -2.65 is statistically significant at the .01 level. In other words, police organizations that utilize more specialized units were more likely to have adopted research and planning units. Next, spatial differentiation has a T-value of -2.14 and is statistically significant at the .05 level. Police organizations that have a greater number of permanent headquarters or stations are more likely to adopt research and planning units. Overall, police organizations with complex structures are more likely to have a research and planning unit.

**Table 3. Organizational Structure T-test Results**

<table>
<thead>
<tr>
<th>Concept</th>
<th>Mean</th>
<th>t</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STRUCTURE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functional Differentiation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with R&amp;P Unit</td>
<td>10.44</td>
<td>-2.65</td>
<td>0.011**</td>
</tr>
<tr>
<td>without R&amp;P Unit</td>
<td>7.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical Differentiation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with R&amp;P Unit</td>
<td>2.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>without R&amp;P Unit</td>
<td>2.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spatial Differentiation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with R&amp;P Unit</td>
<td>1.41</td>
<td>-2.14</td>
<td>0.037*</td>
</tr>
<tr>
<td>without R&amp;P Unit</td>
<td>0.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formalization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with R&amp;P Unit</td>
<td>13.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>without R&amp;P Unit</td>
<td>13.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professionalization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Education)</td>
<td>0.833</td>
<td></td>
<td>0.408</td>
</tr>
<tr>
<td>with R&amp;P Unit</td>
<td>1.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>without R&amp;P Unit</td>
<td>1.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professionalization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Training)</td>
<td>-0.229</td>
<td></td>
<td>0.82</td>
</tr>
<tr>
<td>with R&amp;P Unit</td>
<td>1414.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>without R&amp;P Unit</td>
<td>13.87.88</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant at .05 Level
** Significant at .01 Level

**Organizational Environment**

The T-test results for the organizational environment variables are in Table 4. Organizational environment was not found to be statistically related to the adoption of research and planning units by municipal police departments. The only variable that demonstrated
statistical significance is city population. The T-value for city population is -2.21 and the variable is statistically significant at the .05 level. However, it should be acknowledged that city population and organizational size are significantly correlated (r = .96) and any interpretations of the relationship between city population and research and planning unit adoption should be interpreted with caution (discussed in the following paragraph).

Table 4. Organizational Environment T-test Results

<table>
<thead>
<tr>
<th>Concept</th>
<th>Mean with R&amp;P Unit</th>
<th>Mean without R&amp;P Unit</th>
<th>t</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVIRONMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City Population</td>
<td>-2.21</td>
<td>11.93</td>
<td>0.031*</td>
<td></td>
</tr>
<tr>
<td>Population Mobility</td>
<td>0.218</td>
<td>49.56</td>
<td>0.828</td>
<td></td>
</tr>
<tr>
<td>Age Heterogeneity</td>
<td>-0.955</td>
<td>0.9</td>
<td>0.344</td>
<td></td>
</tr>
<tr>
<td>Racial Heterogeneity</td>
<td>-0.315</td>
<td>0.39</td>
<td>0.754</td>
<td></td>
</tr>
<tr>
<td>Occupational Heterogeneity</td>
<td>0.253</td>
<td>0.88</td>
<td>0.801</td>
<td></td>
</tr>
<tr>
<td>Educational Heterogeneity</td>
<td>-0.592</td>
<td>0.8</td>
<td>0.556</td>
<td></td>
</tr>
<tr>
<td>Income Heterogeneity</td>
<td>0.131</td>
<td>0.86</td>
<td>0.897</td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td>0.977</td>
<td>4.19</td>
<td>0.104</td>
<td></td>
</tr>
<tr>
<td>Poverty</td>
<td>0.226</td>
<td>11.66</td>
<td>0.22</td>
<td></td>
</tr>
<tr>
<td>Married Households</td>
<td>-0.724</td>
<td>54.41</td>
<td>0.472</td>
<td></td>
</tr>
<tr>
<td>High School Graduates</td>
<td>-0.34</td>
<td>10.23</td>
<td>0.973</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at .05 Level  
** Significant at .01 Level
Organizational Context

The organizational context variables for the present analysis include organizational age and organizational size. T-test results for organizational context variables are presented in Table 5. The T-test analysis revealed that organizational size is statistically significant at the .01 level. The T-value for organizational size is -2.83. In short, larger organizations are more likely to have adopted research and planning units. As mentioned before, the only environmental variable that was statistically related to the adoption of research and planning units is city population. Furthermore, the variables city population and organizational size are significantly related (r = .96). Therefore, I submit that organizational environment (city population) is not an adequate predictor in the adoption of research and planning units. This assumption is based on the fact that no other environmental variables are statistically related to the adoption of research and planning units, and multiple organizational structural variables were found to be statistically significant. Nonetheless, organizational structure appears to be a better predictor in the adoption of research and planning units.

<table>
<thead>
<tr>
<th>Concept</th>
<th>Mean</th>
<th>t</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTEXT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational Size</td>
<td>-2.828</td>
<td>0.007**</td>
<td></td>
</tr>
<tr>
<td>with R&amp;P Unit</td>
<td>6.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>without R&amp;P Unit</td>
<td>5.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational Age</td>
<td>-0.443</td>
<td>0.659</td>
<td></td>
</tr>
<tr>
<td>with R&amp;P Unit</td>
<td>11.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>without R&amp;P Unit</td>
<td>106.48</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at .05 Level  
** Significant at .01 Level

Discussion

There are two competing explanations for the adoption of research and planning units. The first perspective suggests that police organizations adopt research and planning units based
on their organizational structure. Organizations with more elaborate structures need research and planning units to ensure that their organizations operate efficiently. Conversely, the second perspective assumes that police organizations adopt research and planning units based on cues from its environment. Police organizations with socially disorganized and heterogeneous environments need research and planning units in order to help the organization respond to exogenous influences. The results from this analysis support the structural perspective.

T-test analysis found organizational size, functional differentiation, spatial differentiation, and city population to be statistically significant predictors of research and planning units. In short, large police organizations with complex structures are more likely to adopt research and planning units. The positive relationship between structural complexity and the adoption of research and planning units is intuitive. Large-geographically dispersed organizations that operate a greater number of specialized units require extensive planning and coordination. In these organizations, the top executive cannot independently direct such a complex organization and fulfill the numerous other obligations he or she is expected to complete. Therefore, these organizations employ research and planning units to ensure their complex organization operates efficiently.

But this explanation assumes that police organizations rationally adopt research and planning units to perform tasks that guide and improve organizational operations. Scholars have found that organizational size is positively related to structural complexity (Blau, 1970; Evers, Bohlen, & Warren, 1976), and some may argue that the results from this study may be an artifact of the organizational size-complexity phenomenon. Therefore, in order to understand “why” research and planning units are adopted future researchers should examine the tasks these units actually perform. If research and planning units are adopted by large complex organizations to
ensure organizational cohesion and efficiency, then the tasks performed by research and planning units will reflect these efforts. For example, research and planning units that are adopted to improve their organizations will continually be evaluating the organization’s performance on success indicators (i.e., city crime rates, citizen satisfaction, number of complaints against officers), anticipating future demands on the organization, examining budget issues, introducing innovative equipment or strategies, and evaluating and improving the organization’s operating strategies.

Conversely, perhaps police organizations have implemented research and planning units, but these units do very little to improve the organization’s functioning. Superficially adopted research and planning units in other organizations may simply spend their time analyzing crime statistics for annual reports, overseeing the organization’s accreditation status, or simply serving as additional administrative assistants. Instead of examining the organization’s operations and providing useful modifications to improve organizational effectiveness, these units exist to legitimate and ease the organization’s existence. This perspective does not cynically purport that this type of research and planning unit is created consciously, but rather the tasks performed by these research and planning units fail to proactively improve the organization. In other words, these valuable organizational assets become underutilized.

Future Research

While I found support for the organizational structural complexity perspective, it appears that studying the adoption of research and planning units requires methodologies and measurements that go beyond a simple cross-sectional dichotomous measure of adoption. Moreover, this concern applies to all studies of organizational innovation. Downs and Mohr (1967) pointed out that all innovations are not equal. Different innovations types require
different amounts of resources and organizational change for their adoption. Furthermore, innovations differ by the extent that an organization adopts particular innovations. The aforementioned section described two different research and planning units that may exist within police organizations. Measuring the adoption of research and planning units (or any other innovation) dichotomously fails to compensate for the extent of innovation adoption, thus undermining the ability of the researcher to adequately explain an innovation’s adoption. Simply put, identifying whether an organization has implemented an innovation is only half of the story, and scholars should begin to operationalize innovation implementation based on the extent that an organization utilizes an innovation.

Moreover, organizational change occurs as a process (King, 2009), and innovation should not be reduced to a single instance in time. King (2009) suggested that organizations should be studied utilizing a life-course perspective. Specifically, scholars should consider the history and temporal components when studying organizational change. I agree with this notion because the adoption of an innovation is likely the result of numerous events and decisions over time.

Consider the following hypothetical adoption of a well functioning research and planning unit. At the time of the unit’s inception the organization may have only implemented an ad hoc research and planning unit to analyze its environmental demand and prepare for a future reduction of financial resources. But after the unit performed laudably for its initial assignment, organizational administrators decide that the unit’s members have the ability to benefit the organization in the future. Without examining this hypothetical research and planning unit over time, a researcher would explain the adoption of the unit as a result of environmental stimuli (reduction in funding); however, the adoption of this unit was not only a result of environmental stimuli, but also superb performance by the unit’s member. Clearly, organizational change occurs
over time, and organizational scholars should begin to acknowledge the temporal component of change in their research methodologies. Future organizational innovation studies should employ a life-course perspective that accounts for the innovation process’s temporal component (King, 2009).

Conclusion

This study utilized an organizational perspective to examine the adoption of research and planning units by American municipal police organizations. The adoption of research and planning units from a sample of 58 American municipal police organizations was better explained by organizational structure than organizational environment. Police organizations that adopted research and planning units were larger, more spatially differentiated, and employed a greater number of specialized units. In summation, police organizations with complex organizational structures implement research and planning units in order to maintain coordination and cohesion within their organization; however, this study used a cross-sectional research design that failed to account for the difference in which disparate organizations actually utilize an adopted innovation. Future organizational innovation scholars should take heed of the shortcoming of the current study.

First, organizational innovation scholars should methodologically account for the extent of innovation adoption among organizations. A key component to explaining organizational innovation lies in understanding how organizations adopt the same innovation differently. Second, scholars should begin to incorporate temporal elements when examining organizational innovation. King (2009) offered an organizational life-course perspective that can begin to serve as a guide for organizational researchers.

Regardless, it is important for police scholars to continue to further their understanding of
research and planning units. While research and planning units in some police organizations may be instrumental in improving the organization’s operations, the research and planning units of other organizations may only bear the title. By furthering our understanding of what research and planning units do, and how successful units have become engrained within adopting organizations, their success can be replicated in other policing organizations. Realistically, policing as a science is in its infancy, but policing scholars should continue to improve research methodologies in order to better understand current police organizations, and eventually improve future police organizations. Eventually, the research of police scholars will debunk the myth that “nothing works.”
References


This survey involves research and planning. Please have the research and planning unit’s manager/commander complete the survey. To ensure accuracy on the questions that ask about the past research process on specific innovations it may be necessary for additional respondents who were directly involved with this process to complete that section. Simply circle the number, or complete your answer in the blank provided. Information provided in this survey will remain confidential. Please answer the following questions about your agency’s research and planning unit.

1. Does your department assign employees to a specialized unit for research and planning?
   ___ YES   ___ NO

2. If yes, indicate the number of employees assigned to the research and planning unit in each of the following.
   _____ Unit Commanders   _____ Full Time Sworn Officers   _____ Full Time Civilian Employees
   _____ Total Unit Members   _____ Part Time Sworn Officer   _____ Part Time Civilian Employees

3. Please indicate the number of employees in your unit that possess the following education levels.
   Total number of responses should equal the above number of responses.
   ___ High School   ___ Some College   ___ Two-year degree   ___ 4 Year degree
   ___ Master’s degree   ___ J.D.   ___ Doctorate degree

4. Please indicate the percentage of time annually that your research and planning unit spends on the following duties. The total should equal 100%.
   ___ Compiling & Analyzing Statistics   ___ Producing Crime Maps
   ___ Researching Innovative Equipment   ___ Researching Innovative Strategies
   ___ Budget Forecasting   ___ Strategic Planning (Anticipating future demands)
   ___ Resource Allocation Research   ___ Writing Grants
   ___ Updating Department Policy Manual   ___ Program Evaluation
   ___ Other: ______________________   ___ Other: ______________________________________

5. How are research and planning topics assigned to the research and planning unit? Please check all that apply.
   ___ Police Chief   ___ Citizen Suggestions, Requests, or Complaints
   ___ Supervisory Managers   ___ Discretion of Research & Planning Unit Leader/Manager
   ___ Command Rank Managers   ___ Discretion of Research & Planning Unit Member Collaboration
   ___ Line Officers   ___ Political Requests

6. Please indicate up to 5 innovations (a new program/or product) that your research and planning unit was responsible for researching & implementing in the year of 2008. Innovations could range anywhere from new equipment for officers (e.g. TASERS, in-car computers), operational tactics (e.g. crime analysis, problem oriented policing), department accreditation, managerial improvements, crime prevention plans, or anything else new to your agency. Please indicate who initiated the project (e.g. Chief, Line Officer, R&P unit, etc). Additional sheets may be attached if necessary.
   1. ____________________________________________________________
   2. ____________________________________________________________
   3. ____________________________________________________________
   4. ____________________________________________________________
   5. ____________________________________________________________

7. Please indicate how much training/education the average member of your unit has had for each of the research subjects below.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Enough</th>
<th>More Needed</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Design</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Statistics</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Cost-Benefit Analysis</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Operations Research</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Evaluation Research</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Crime Mapping</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

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8. The following is a list of possible academic sources of information about law enforcement innovations. Please place an “X” in the first column if your agency is likely to use the source for researching a new innovation. In the second column, please rate all the sources: 1 (not useful) to the 5 (highly useful).

<table>
<thead>
<tr>
<th>Use?</th>
<th>Rating</th>
<th>Academic Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Academic Journals (Police Quarterly, Criminology)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Books</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Federal Government Documents (NIJ Publications, BJS Publications)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>State Government Documents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>University Faculty Partnerships</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other:</td>
</tr>
</tbody>
</table>

9. The following is a list of possible professional law enforcement sources of information about law enforcement innovations. Please place an “X” in the first column if your agency is likely to use the source for researching a new innovation. In the second column, please rate all the sources: 1 (not useful) to the 5 (highly useful).

<table>
<thead>
<tr>
<th>Use?</th>
<th>Rating</th>
<th>Professional Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Professional Journals (FBI Law Enforcement Bulletin, Police Chief Magazine)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other Police/Sheriff Departments</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Federal Law Enforcement Agencies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information from National Law Enforcement Professional Organizations/Meetings (International Association of Chiefs of Police, National Sheriffs Association)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information from State/Regional Law Enforcement Professional Organizations/Meetings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Professional Law Enforcement Organization Websites</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expertise of Department Personnel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other:</td>
</tr>
</tbody>
</table>

10. Please indicate the single most useful source of information for researching law enforcement innovations.______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

11. Contacting another agency often proves useful because of their knowledge on a particular innovation. If your agency has a specific method or protocol for contacting other agencies please indicate it below.

(Please check all that apply)

___ Our agency contacts one particular agency.
___ Our agency belongs to a consortium of agencies (Please specify) __________________________
___ Our agency contacts/surveys multiple agencies with good reputations for the particular innovation (If any, please indicate minimum # required) ______
___ Other: (Please Specify) ________________________________________________
___ NONE: Our agency has no specific method or protocol for getting information from other agencies.

If your agency frequently contacts other police/sheriff departments during it research process please write the name of the agency to the right. Beside each agency rate the quality of the information received: 1 (not useful) to the 5 (highly useful). 1. ______________________________ 2. ______________________________ 3. ______________________________ 4. ______________________________ 5. ______________________________

12. What method(s) of communication is used most often when contacting other agencies?

(Please check all that apply)

___ Telephone   ___ Letter   ___ Other: __________________________ (Please Specify)
___ Fax   ___ Survey   ___ Personal Visit   ___ Electronic Mail

13. How many times per month does your research and planning unit contact other agencies?

___ Less than 5   ___ 5-10 times   ___ 10-15 times   ___ 20 or more times

14. How many times per month do other agencies contact your unit for information?

___ Less than 5   ___ 5-10 times   ___ 10-15 times   ___ 20 or more times

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15. How often does your research and planning unit respond to information requests from other agencies?
___ Always  ___ Almost Always  ___ Sometimes  ___ Never  ___ When time permits

Section II: The following questions pertain to the research and planning of your agency prior to the implementation of TASERS Questions 16 - 22 should only be answered by an employee that was directly involved with the research process for TASERS.

16. Does your agency currently use TASERS?
___ YES Our agency implemented TASERS on ___/_____(mm/yyyy)
___ NO  (If no, but your agency has researched TASERS continue the survey.  
(If no and your agency has not researched TASERS, please skip to question 22)

17. If your agency conducted research on TASERS, but decided against their implementation please explain why your agency did not adopt TASERS. Additional sheets may be attached if necessary.

_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________

18. Prior to implementing TASERS, did your agency secure external funding to support the implementation of TASERS?
___ YES  Please Identify External Funding Source for TASERS___________________________________________
___ NO

19. The following is a list of possible academic sources of information about implementing TASERS. Please place an "X" in the first column if your agency used the source to gather information when considering the implementation of TASERS. In the second column, please rate all the sources: 1 (not useful) to the 5 (highly useful).

<table>
<thead>
<tr>
<th>Use?</th>
<th>Rating</th>
<th>Academic Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Academic Journals (Police Quarterly, Criminology)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Books</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Federal Government Documents (NIJ Publications, BJS Publications)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>State Government Documents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>University Faculty Partnerships</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other:</td>
</tr>
</tbody>
</table>

20. The following is a list of possible professional sources of information about implementing TASERS. Please place an "X" in the first column if your agency used the source to gather information when considering the implementation of TASERS. In the second column, please rate all the sources: 1 (not useful) to the 5 (highly useful).

<table>
<thead>
<tr>
<th>Use?</th>
<th>Rating</th>
<th>Professional Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Professional Journals (FBI Law Enforcement Bulletin, Police Chief Magazine)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other Police/Sheriff Departments</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Federal Law Enforcement Agencies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information from National Law Enforcement Professional Organizations/Meetings (International Association of Chiefs of Police, National Sheriffs Association)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information from State/Regional Law Enforcement Professional Organizations/Meetings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Professional Law Enforcement Organization Websites</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expertise of Department Personnel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Equipment Catalogues (Galls Catalogue)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Equipment Company's Documentation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other:</td>
</tr>
</tbody>
</table>

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If your agency contacted other police/sheriff departments during it research process for TASERS please write the name of the agency to the right. Beside each agency rate the quality of the information received: 1 (not useful) to the 5 (highly useful).

1. ________________________________
2. ________________________________
3. ________________________________
4. ________________________________
5. ________________________________

21. On average how many times did you contact each agency?
   ___ Once   ___ Less than 5 times   ___ 5-10 times   ___ 10-15 times   ___ 20 or more times

22. Please indicate the importance of the following on your decision to contact the aforementioned agencies for information.

<table>
<thead>
<tr>
<th></th>
<th>Very Important</th>
<th>Important</th>
<th>Not Important</th>
<th>Did Not Consider</th>
</tr>
</thead>
<tbody>
<tr>
<td>These agencies are the same size as our agency.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>These agencies are geographically close to our agency.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>These agencies have the same problems as our agency.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>These agencies have already implemented TASERS.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>These agencies were also researching TASERS at the time.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>These agencies could provide quick and reliable information.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>These agencies are considered prestigious law enforcement agencies.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>These agencies have a reputation for being innovative.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>We have previously contacted these agencies for other information.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>These agencies had a history of successful TASERS usage.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>A member from our research and planning team personally knows a member of the contacted agency.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>These agencies had previously contacted our agency for information.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Agencies that are already using TASERS could tell our agency about legal problems associated with their usage.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Agencies that are already using TASERS could tell our agency if they were useful or not.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Additional Comments about your agency’s research and planning unit or the role of inter- organizational contacts in your agency’s research process are greatly appreciated. Additional sheets may be attached if necessary.

_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________

Thank You!
Bowling Green State University
Criminal Justice Program
222 Health Center
Bowling Green, OH 43402

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