POLICE CHIEFS' TASKS, TIME, AND CONTINGENCY THEORY: AN EMPIRICAL EXAMINATION

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Kayla L. White

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ABSTRACT

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This study explores variations in the amount of time allocated, by 425 Texas police chiefs, to different workday activities. Prior studies, commonly called time-task studies, have focused mainly on line-level police officers but not police chiefs. Unfortunately, we know relatively little about how local police chiefs allocate their workday tasks, nor the correlates of differences in time use. The data are collected from 425 police chiefs who responded to the Texas Chiefs of Police Panel Project (TCPPP) survey between September of 2013 and July of 2015. The analysis is framed in an organizational view called *structural contingency theory*. The data are first explored with univariate descriptive statistics and factor analysis. Next, the demographic attributes of chiefs (e.g., age, sex, race, education) are introduced as control variables. Then, measures of each chief's police agency (e.g., size, task scope), and their community (e.g., population size, racial diversity, poverty) are introduced as predictors of chiefs' time and task. The findings are framed within this larger organizational perspective.

KEY WORDS: Policing, Structural contingency theory, Time-task, Police chiefs, Daily work activities.

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TABLE OF CONTENTS

Page

LIST OF TABLES

CHAPTER I

Introduction

As of 2008, there were over 12,000 chiefs employed by local police agencies in the United States (Reaves, 2011, Table 1). Chiefs of police are responsible for overseeing the operations of police organizations, and are commended for successes, and held accountable for failures. Their responsibilities can involve directing the activities of ten officers to supervising thousands of officers (International Association of Chiefs of Police, 2008). Being the public face of an organization can be demanding. Not only do officers look up to the chief, the community looks to him or her to lead the local police force to serve and protect. Seeing as this profession is important for the well-being of society, it is important to understand what chiefs do exactly.

Prior studies have explored the different tasks line-level police officers perform and the amount of time they devote to these tasks. Such studies, commonly called time-task studies are helpful for understanding the daily activities of police officers. Heretofore, this methodology has not been applied to police chiefs. Unfortunately, there is a lack of systematic knowledge regarding chiefs' activities. Put simply, we collectively know very little about how chiefs spend their time. This study attempts to fill this gap by presenting data from a study of local chiefs of police concerning the time they allocate to different tasks. Determining how police chiefs spend their time is important for understanding the role they play in society and within their organization.

Prior studies have used contingency theory to help explain variation in police officer activity (Meagher, 1985; Zhao, He, & Lovrich, 2003). Variables such as community size (Meagher, 1985) and the level of local violent crime (Zhao, He, &

Lovrich, 2003) were found to influence the amount of time agencies spent focusing on activities relating to the police functions of service, order maintenance, and crime control. But these are studies of overall, agency-level effort, and they do not assess the relationships among the organization, its environment, and the tasks of chiefs.

The ability to adapt to changing circumstances is crucial to the long-term success of any organization (Zhao et al., 2003). Without this capacity, organizations would not remain competitive. The capability of police organizations to respond to changing community needs and competently handle unexpected challenges contributes to their success, and shapes society's perceptions of them. In order for a police organization to adapt, it must first recognize there is a problem affecting the organization's ability to operate efficiently and effectively (Donaldson, 1995). This study argues that as police chiefs are leaders of their organization and are responsible for overseeing and directing all activities, they are able to recognize these problems and make adjustments in order to remain responsive. These adjustments, as argued in this study, can be found in their weekly schedules. That is, chiefs allocate their time to address the most pressing issues in their organization and its environment.

The purpose of this study is two-fold: (1) to determine how chiefs of police spend their time, and (2) to examine the influence of individual characteristics, organizational factors, and community characteristics on the amount of time police chiefs spend on various tasks. More specifically, does structural contingency theory help explain the behavior of chiefs of police? This project uses data from chiefs of police and the analysis is guided by contingency theory. The data are drawn from the Texas Chiefs of Police

Panel Project (TCPPP) survey, the Texas Department of Public Safety, the Bureau of Justice Statistics, and the United States Census Bureau.

Chapter II presents a review of the literature on structural contingency theory, and time-task analyses of law enforcement. It also introduces many of the variables that will be utilized in the present study. Chapter III provides a description of the methods used in this study. The measurement of the independent and dependent variables is explained, and the statistical methods applied in this study are outlined. Chapter IV examines the results of the statistical methods applied, explaining police chief activities. Chapter V provides a discussion of the findings along with suggestions for future research.

CHAPTER II

Literature Review

This chapter presents a review of the research on contingency theory and time-task analyses of police officers. The reason for focusing on analyses of police officers instead of police chiefs is due to the fact that researchers have not used time task methods to study police chiefs. Determining how and why police chiefs spend their time is beneficial to the advancement of contingency theory. In order to provide a better understanding of the current knowledge on this topic, this chapter offers a general overview of contingency theory, followed by a review of studies that have tested contingency theory. Then, a description of the methodologies used to analyze officer workload is provided along with the results. After the previous studies are reviewed, a summary of the current study is discussed, including the research questions that will be addressed.

Theoretical Considerations

According to Donaldson (2001), contingency theory posits that the effectiveness and efficiency of an organization is due to fitting characteristics of the organization (e.g., structure) to contingencies that reflect the organization's environment (Lawrence & Lorsch, 1967; Pennings, 1992; Woodward, Dawson, & Wedderburn, 1965). Lawrence and Lorsch (1967), in one of the first empirical studies to present the idea of contingency theory, concluded that different environments place different requirements on organizations (Scott, 2002). Contingency theory emphasizes the external environment (Hage & Aiken, 1970; Van de Ven & Drazin, 1985). For police agencies, the population served by the police agency, the political system, and the magnitude and form of crime

compose this environment (King, 2005). Advocates of contingency theory argue that the character of this external environment drives organizational changes (Zhao, He, & Lovrich, 2003). Environments are always changing, which means individual organizations must confront and adapt to the best of their abilities. When an organization no longer meets its goals effectively or efficiently, adaptation of its structure must occur, "by moving into fit, in order to restore effectiveness and performance" (Donaldson, 1995, p. 33). In other words, organizations move into fit with their contingencies in order to create an association between the organizations' characteristics and the contingencies (Van de Ven & Drazin, 1985). This "fit" between an organization and its environment must be maintained over time. Donaldson (1995, p. 32) suggests that in order to have an ideal fit, "organizations must be able to adjust their operations as well as their goals."

Contingency theory argues that organizational structure must fit three contingencies in order to remain effective: environment, size, and strategy (Donaldson, 2001). Each of these can affect a specific type of organizational structure: organic, bureaucratic, and divisional, respectively (Donaldson, 2001). Thus, if any of these contingencies change, the analogous structural aspect will change. For example, the following environmental factors can influence organizations:

The status and drift of general economic, political, and social conditions, the mood of customers and clients, the activities and strategies of other organizations in the environment, the quality of personnel available to the organization, the quality of raw materials, the value structure of the community, the degree of support from higher levels of government or industry, stipulations of pertinent tax law, and so forth. (Mohr, 1982, p. 186 as quoted in Maguire, 2009, p. 161).

Police organizations share similar aspects as other types of organization. Scholars and police practitioners have suggested that law enforcement organizations need to adapt to new societal demands in order to find a better fit with their environment (Kelling & Moore, 1987; Oliver, 2000; Trojanowicz & Bucqueroux, 1990). Organizational change within police organizations should lead to new priorities among police functions (Eck & Rosenbaum, 1994), such as the implementation of community-oriented policing. Contingency theory has been invoked to explain such police innovations. The next section will provide a review of studies that have applied contingency theory to the behavior of police organizations.

Applications of Contingency Theory

Studies have examined the influence of contingency factors on structural and behavioral adaptations of police organizations (Chappell, Macdonald, & Manz, 2006; Crank, 1990; Crank & Wells, 1991; Dichter et al., 2011; Eitle, 2005; Katz, Maguire, & Roncek, 2002; Langworthy, 1985; Maguire, 1997; Maguire, 2009; Meagher, 1985; Ostrom, Parks, & Whitaker, 1978; Randol, 2012; Wilson, 1968; Zhao, He, & Lovrich, 2003; Zhao, Ren, & Lovrich, 2010).

Organizational structure and contingency theory. Studies have tested the utility of contingency theory by examining the influence of variables such as population and agency size. In a seminal piece, Langworthy (1985) tested the effect of population size, the complexity of the population, and the political culture of the population on the structure of police departments. He found that population size and agency size correlated strongly while complexity and political culture were not significantly related to the organization of police departments. He concluded these specific conditions had no

significant influence on the structure of police organizations (Langworthy, 1985). Zhao, Ren, and Lovrich (2010) also examined police organizational structure using contingency theory as their conceptual framework. They examined the influence of environmental complexity, agency size, and agency use of technology. Though the authors found that agency size, measured by the number of sworn officers, was the most influential variable in predicting agency structure, measures of environment were important as well.

Maguire (1997) found agency size to be a significant predictor of organizational structures, while Crank and Wells (1991) found that variations in size were associated with changes in structural variables, and the factors that affect the structure of larger agencies may not be generalizable to that of smaller departments.

Organizational behavior and contingency theory. Adaptation is not only structural, but also behavioral. When organizations adapt to changes in their external environment, their behaviors change in addition to their overall structure. For example, James Q. Wilson published a study of police organizational behavior over 40 years ago that suggested three styles of policing: legalistic, watchman, and service. Police agencies using the legalistic style focus almost solely on law enforcement activities, while those utilizing the service style focus on providing services to citizens. Agencies that used the watchmen style viewed order maintenance as their primary function, which resulted in disregarding minor offenses, and taking the path of least resistance. From this, Wilson (1968) identified the key functions of police as service, order maintenance, and crime control. Over the years, these functions have varied in their level of priority within law enforcement agencies. Studies have utilized contingency theory to test the effects of organizational and environmental variables on the prioritization of police functions

(Meagher, 1985; Zhao et al., 2003). Meagher (1985) examined the influence of contingency factors on the variation in police officer activities in a national study of police functions. He surveyed 249 municipal departments of widely varying sizes. It was found that police officers from “small” departments performed service activities more than officers in medium to large departments (Meagher, 1985). Medium-sized departments spent more time dealing with traffic accidents while larger departments had higher arrest rates, and displayed more of a legalistic style in comparison to smaller-sized departments. Little variation was found regarding patrol time (Meagher, 1985).

Zhao, He, and Lovrich (2003) observed the effect of the level of violent crime reported to the local police, the number of commissioned officers available for deployment, and city size on crime control, order, and service activities. They found that crime control functions were rated the highest priority while service functions were rated the lowest. In the same study, they examined the same variables, but on the changes in organizational priorities of 200 American police agencies from 1993 to 2000. It was found that the core functional priorities of the police did not change over this time period. However, when local crime rates increased, agencies spent less time focusing on services and order maintenance when compared to crime control. Randol (2012) drew data from The Law Enforcement Management and Administrative Statistics survey to determine if organizational factors correlated with a department’s terrorism preparedness. He found that organizational size, budget per capita, and functional differentiation were positively related to terrorism preparedness, while factors such as formalization and spatial differentiation were negatively related.

Crank (1990) compared the influence of environmental and organizational factors on arrest rates in large and small police departments. Factors included cultural-racial heterogeneity, economic conditions, the number of ranks within the organization, and supervisory ratio, among others. The variation in these rates among communities was used as a measure of policing styles, where higher arrest rates insinuated a legalistic police style. Both environmental and organizational factors influenced arrest rates in both rural and urban communities, however, the impact was greater in rural than in urban departments. Chappell, Macdonald, and Manz (2006) studied arrests more closely by looking at officers' decision to arrest in large cities. They examined the influence of variations in police organizational structures to see if they affected overall differences in police arrest decisions. They found that crime rate was the strongest predictor for both overall and violent arrests, while other variables such as number of officers per 100,000 persons, racial heterogeneity, and implementation of community-oriented policing were related to increases in arrest, but did not approach statistical significance.

Exploring the effects of organizational structure on child sexual abuse case attrition, Maguire (2009) found that none of the variables (measures of organizational context, organizational structure, and specific organizational structure variables related to an agency's response to child sexual abuse cases)[1] influenced the rate of cases being designated as founded (allegation was supported according to state law or policy), however, the size and height of police agencies in addition to the rate of cases being designated as founded both influenced the arrest rates for these cases.

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[1] Specifically, these variables were size, demand, and region of an agency, functional differentiation, vertical differentiation, occupational differentiation, administrative intensity, formalization, specialization in child sexual assault, interagency partnerships for child sexual assault, formal policy for child abuse, founded rates, and arrest rates.

Studies have examined the influence of police organizational variables as well as community factors on Intimate Partner Violence arrest decisions (Dichter et al., 2011; Eitle, 2005). Dichter et al. (2011) found that agency type, percentage of sworn officers that were female, population size, percentage urban, and poverty were all significantly related to the likelihood of an arrest. Eitle (2005) found that crime rate, spatial differentiation, and level of formalization were predictive of arrest risk in domestic violence cases. Eitle (2005) also found that having a mandatory arrest policy influenced the arrest risk, concluding that employing one may promote responding to domestic violence cases in an equitable manner.

In sum, empirical research has demonstrated a relationship between contingency theory and the time officers spend on tasks, which reflects the functions (service, order maintenance, and/or crime control) that agencies give top priority. Research has also revealed that the environment influences the structure and behavior of police departments. Therefore, it is expected the environment will also effect how chiefs spend their time. This study will use several of the measures of contingency theory, including environmental factors discussed above.

The reason contingency theory can be applied to chiefs' time spent on different tasks is because they are leaders and they direct the activities of other police officers. Chiefs of police can recognize problems within their agencies, and can make the appropriate adjustments in order for the organization to adapt. These adjustments can be found in the chiefs' weekly schedules. Where they decide to focus most of their time is a reflection of what they believe needs the most attention. This attention is applied to what they recognize as major problems in their environment. Due to the absence of research on

time-task analyses involving chiefs of police, a review of time-task studies of police officers using surveys or systematic social observations will conclude this chapter.

Review of Time-Task Analyses

Most police time task studies employ one of two methodologies to evaluate how officers spend their time: surveys or systematic social observations. In this review studies that used activity reports, which are a summary of activities performed over a period of time, are grouped into the survey category, as officers had to fill in the reports on their own, and did not have a third party observe them. Other forms of methodologies exist, such as dispatch records and calls for service, however, studies utilizing these procedures as well as those that focus exclusively on police-citizen interactions are not discussed. Although these involve time and activities, they focus solely on a specific area in police work (generally police-citizen interactions), not the typical workday.

Systematic Social Observations. Invented by Reiss (1971), Systematic Social Observation (SSO) has been used to observe officers for decades (Cordner, 1978; Famega, Frank, & Mazerolle, 2005; Frank, Brandl, & Watkins, 1997; Kelling, Pate, Dieckman, & Brown, 1974; Liederback & Frank, 2003; Parks, Mastrofski, Dejong, & Gray, 1999; Smith, Novak, & Frank, 2001; Whitaker, 1982). In one of the first observational studies, Kelling, Pate, Dieckman, and Brown (1974) attempted to determine how police officers spent their uncommitted time. Uncommitted time was classified into activities (“stationary,” “mobile,” and “contacting personnel in field”). It was found that 60 percent of their time was uncommitted, while 22.1 percent of their time was spent on non-police related mobile and stationary activities. Whitaker (1982) reviewed the previous literature regarding patrol work and found that answering assigned

calls and conducting general surveillance were the top two time-consuming activities. However, in his own observational study, Whitaker discovered that officers devote less than half of their time to assigned calls and field-initiated encounters. It was concluded that, contrary to popular belief, the police deal with many kinds of non-crime related activities.

Examining how officers spend their discretionary time, Famega, Frank, and Mazerolle (2005) observed patrol officers and found that 81 percent of their time was unassigned. Vehicle patrol was the most frequent activity, followed by problem-focused activities. The authors concluded that officers have a lot of discretionary time and directed activities are rare. In other words, activities conducted during assigned time were more often self-initiated than not. Liederbach and Frank (2003; 2006) conducted two observational studies of police officers. The first compared small-town/rural officers and their urban counterparts. Rural officers were found to encounter situations that their urban counterparts would most likely not come across. Examples included performing house checks for citizens on vacation, and animal-related problems. The second study compared the work routines and citizen interactions of deputy sheriffs with county-level officers. Deputy Sheriffs spent over twice as much time driving to locations than local officers while local officers spent more time performing administrative tasks.

Other observational studies of police officers have compared traditional (“beat”) officers with community (neighborhood) officers. Community officers have been found to perform different daily activities than traditional officers (Frank, Brandl, & Watkins, 1997; Parks, Mastrofski, Dejong, & Gray, 1999; Smith, Novak, & Frank, 2001). Parks, Mastrofski, Dejong, and Gray (1999) found that community policing entailed less “face

time" with the public and more "behind the scenes." These results align with Smith, Novak, and Frank's (2001) finding that COP officers spend more time on community-based service, information gathering activities, and meetings with non-police service providers, while traditional officers spend more time face-to-face with citizens overall. Cordner (1978) utilized a combined methods approach of both observation and surveys to evaluate officer workload. He found that 55 percent of an officer's patrol time was uncommitted, and 39 percent of this time involved breaks. Checking and enforcing traffic were the main tasks during day shift while checking businesses and suspicious people were the main tasks during night shift. Not surprisingly, crime-related portions of patrol consumed less than 15 percent of the time.

Surveys. Not all studies employ a systematic social observational approach when examining police officer workload. Martin and Wilson (1968) examined activity reports of 7,000 officers in 12 provincial police forces in England. A majority of time was spent in maintaining civil order (40%), followed by crime-related matters (30%), traffic matters (20%), and administrative work (10%). More specifically, these tasks included patrolling (31%), general duties (20%), and crime investigation (18%). Other studies that have used activity reports have found that 33-43 percent of officers' time involved patrolling (Arkell & Knight, 1975; Miller and Weeks, 1972; O'Neill & Bloom, 1972). In 2005, Famega compared the methodologies and findings of 11 police officer workload studies published between 1970 and 2001 that have contributed to what is known about officer "downtime" (time not responding to citizen calls for service). She concluded that patrol officers always have had, and continue to have, a lot of downtime available for restructuring.

Sanders (1997) collected data from almost 2,000 police officers who participated in the Ohio Peace Officer Task Analysis Project of 1981-82. She examined the influence of individual, organizational, and community characteristics on the job of policing. A variety of variables such as age, race, education, and agency size were found to make a difference to police activities (Sanders, 1997). Travis and Sanders (1998) compared these data to data collected in the 1996 Ohio Peace Officer Task Analysis Project in an attempt to determine if the work activities of community policing officers differ from those of traditional police officers. This comparison controlled for implementation of community policing, commitment to community policing, and officer assignment. Officers assigned exclusively to community policing spent more time engaged in interactions with citizens and in crime-prevention efforts than traditional police officers. Assigning officers to community policing reduced the amount of time other officers were involved in the community. These frequencies were related to an agency's commitment to community policing.

Job task analyses of entry-level law enforcement officers have been completed in numerous states. For example, the staff of the California Commission on Peace Officer Standards and Training (POST) conducted a task analysis survey of 1713 uniformed radio-car patrol officer officers. Identified in the survey were 317 core tasks, the most frequently performed being patrol activities, traffic, writing, weapons, and arrest, search and seizure (California Commission on POST, 1998). Another job analysis study, conducted in the state of North Carolina, identified the tasks performed by more than 1,500 entry-level law enforcement officers in order to revise and update the content of the current basic law enforcement-training program (BLET). These types of time-task studies

are important for understanding the role police officers play in society as well as within their agency. Previous research has mainly focused on the activities of street-level officers. Studying chiefs of police will bridge gaps in the research previously discussed.

Current Study

The current study seeks to examine some of the individual, organizational, and community factors that influence Chiefs' time spent on tasks. Adherents of contingency theory have argued that successful organizations are rational entities, adjusting their structures and activities to achieve specific goals more effectively and efficiently (Katz et al., 2002). For example, activities that focus on crime control, such as conducting patrol or arresting offenders, may be viewed as a rational response to an increase in crime rates. The discussion of structural contingency theory presented here serves as a broad theoretical backdrop against which the variation in the work of police chiefs, measured by the time police chiefs allocate to different tasks, can be understood. The analysis is guided by structural contingency theory, but is not a full test of all the elements of the theory.

In the following analysis, the variables tested were derived from the social environment of police organizations together with the demographics of the chiefs. The research questions addressed are worded in accordance with expectations derived from contingency theory. These include: 1) To what extent do Chief of Police activities vary; and 2) To what extent do the variables tested in this study explain this variation?

By drawing on individual-, organizational-, and community-level variables, the current study seeks to explain variation in police chief activities. The following section will outline the data and methods used to answer these questions.

CHAPTER III

Data & Methods

The current study uses a sample of 425 Chiefs of Police in the state of Texas. Data were collected from four sources: the 2013-2015 wave of the Texas Chiefs of Police Panel Project (TCPPP) survey, the Texas Department of Public Safety, the United States Census Bureau, and the Bureau of Justice Statistics.

The first major data source, the Texas Chiefs of Police Panel Project (TCPPP) survey, was administered to Texas police chiefs who participated in the Texas Police Chief Leadership Series (TPCLS) program. TPCLS is conducted by the Law Enforcement Management Institute of Texas (LEMIT). TPCLS is a state mandated continuing education and professional development program for Texas police chiefs, which occurs on a two-year cycle. Every chief of a local or special policy agency, such as park, Transit police, or Independent School District (ISD) police, must complete the program once every two years.[2] The respondents were drawn from the 2013-2015 cycle of TPCLS and TCPPP[3] that started in the fall of 2013 and ended in the summer of 2015. The chiefs eligible to attend this training work in agencies that serve communities with populations less than 100,000.

The original sample included 1027 Texas police chiefs who attended the LEMIT TPCLS training within the two-year cycle. Of the 1027 who attended, 612 responded to the survey (59.69 percent response rate). The sample included chiefs working in a local agency (n=434), a category that includes city, town, village, township, etc., agencies,

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[2] Sheriffs and constables do not attend TPCLS. Chiefs from the 30 largest police departments (agencies that serve communities with populations greater than 100,000) attend a different leadership series conducted by LEMIT.

[3] TPCLS and TCPPP run simultaneously on the same two-year cycle.

because they serve a fixed population indicated by census data, which can influence how chiefs of police spend their time. Chiefs working for state police, Independent School District police, and special police, such as university, park, wildlife, airport, and port were excluded, as they do not serve a fixed population that can be enumerated by the U.S. Census. Chiefs reporting more than 356 full-time actual employees in their agency on the TCPPP survey were removed (n= 9), as they were outliers and skewed the data. The final sample size for this study is 425 Texas Chiefs of Police.

The surveyed chiefs completed a pencil and paper survey with several components including demographics, agency characteristics, and a list of activities. Chiefs provided information about their age, race, gender, professional experience, etc. They also answered questions about their agency (size, community served). Finally, chiefs reported about their daily activities, which was used to create the dependent variables.

The total number of crimes committed (in 2012) in the communities in the sample of Texas police chiefs were drawn from the Texas Department of Public Safety, the second major data source. The crime rate per 1,000 persons was calculated to provide an estimate of crime. Data from 2012 were chosen in order to lag the crime data since the independent variables (e.g., crime rates) must precede the dependent variable (chiefs' time spent on activities). The lag of one to three years gives chiefs time to adapt.

The third major source of data comes from the United States Census Bureau. The 2010 U.S. Census population data and the 2012 American Community Survey estimate were collected for the communities served by chiefs in this sample. These data were used to create indicators of racial heterogeneity and social disorganization.

The fourth and final major data source is the Bureau of Justice Statistics Census of State and Local Law Enforcement Agencies. These data were used to calculate the percent civilian employees within each department. Measures of agency size, task scope, and interagency collaboration were also collected from the Bureau of Justice Statistics.

Dependent Variables

The purpose of this study is to examine the influence of individual, organizational, and community characteristics on the variation in police chief activities. Therefore, the dependent variable is the amount of time police chiefs perform a variety of tasks, such as time arresting offenders, conducting criminal investigations, participating in professional organizations, conducting in-service training, responding to citizen complaints, meeting with supervisory and line officers, and interacting with judges. Frequency was measured based on time spent per week using a scale from 0-10, with 0 being equivalent to “no time spent” and 10 being equivalent to “a large amount of time.” Responses were coded 0-10 in order to standardize them across participants. This was to prevent respondents from overestimating the amount of time they perform each task. From there, scores were converted into real time (hours) by summing their responses to each activity. Their reported total number of hours worked in a single week was divided by that sum to create a number that was identified as their “hours per time score.” A respondent’s “hours per time score” was an indication of how much time, in hours, a response of 1 was equivalent to on the 0-10 scale. From there, each of their responses was multiplied by their own “hours per time score” to generate real time (hours).

Independent Variables

The independent variables included organizational factors and community characteristics.

Organizational factors. Derived from contingency theory, agency size is used to explain variation in police chief functions. Organizations can differ greatly by size. Maguire (2003) suggested that the number of employees within an agency is the most common operationalization. Subsequently, agency size is measured using the total number of full-time sworn employees, and full-time civilian employees, as reported by the Bureau of Justice Statistics. The size of each agency ranged from one to 233 employees. The BJS data (2008) were used to measure agency size (instead of the TCPPP survey (2013-2015)) because it was gathered prior to the time task data, so it lags the effects of organizational structure on police chief activities. The natural log for this variable is used to correct for the nonnormal distribution of the data. Task scope is measured by the number of possible services each agency performs, with a total of 39 possible tasks. Interagency collaboration is measured based on an agency's participation in any of the five possible task forces. These include human trafficking, drug trafficking, gangs, antiterrorism, and violent crime. Another organizational factor to be included is the percent civilian employees within the department. This is measured using the 2008 Census of State and Local Law Enforcement Agencies (CSLLEA), collected by the Bureau of Justice Statistics (BJS), and ranges from zero to 62.33 percent civilian.

Community characteristics. The prior literature has commonly separated data regarding an agency's local population into indicators of social disorganization and heterogeneity (Zhao, 1995). Brinser and King (2016) followed Maguire's (2003)

procedure in order to create these variables. Percentage of population less than 18 years of age, percentage of Hispanic, and median household income were included as measures of social disorganization in their study, and will be used for this project as well. Resembling Brinser and King (2016), this study will also include one measure of racial heterogeneity, the Gibbs-Martin D. Gibbs-Martin D uses the proportion of five different racial groups in a population to mathematically create a single measure of heterogeneity. A perfectly homogenous population would have a score of 0, while a perfectly heterogeneous population would have a score of 1. Scores in this sample range from zero to 0.71, with higher scores corresponding with greater heterogeneity in the community (Maguire, 2003).

Community population is measured using the 2012 U.S. Census population estimate, and ranged from 108 to 118,887 persons. Percent population change is measured between the years of 2010 and 2012 and ranges from -13.72 to 66.05. The last community-level variable, total crime rate, was calculated per 1,000 persons using the Texas Department of Public Safety data as well as the population data from the United States Census Bureau. The crimes included in these data are murder, rape, assault, burglary, larceny, and auto theft. Crime rates ranged from zero to 244.82 per 1,000 persons. It is reasonable to assume that an increase in the total crime rate in any community creates a problem in their environment (Zhao et al., 2003).

Control Variables

Individual characteristics. These comprise all of the demographic data collected on the chiefs, including gender (0= female; 1= male), age, race, highest level of education attainment, marital status, length of time in law enforcement, and prior military

experience. Age was measured by asking chiefs how old they were at the time of the survey.

Race was measured by asking chiefs which of the seven categories they identified themselves in. These choices comprised of White, Black/African American, Hispanic/Latino, Asian, Pacific Islander, Native American, Bi-racial or Other. If they checked the Biracial or Other category, they were asked to specify what that encompassed.

Years of education was measured by asking chiefs to report the highest level of education they had completed at the time of the survey. The choices included high school diploma or GED, some college, but less than an Associate's degree, Associate's degree, Bachelor's degree, graduate certificate, Master's degree, PhD, and JD. Marital status was measured by asking chiefs if they were married, single (never married), divorced, widowed, or separated.

In order to determine the influence length of service had on variation in activities, chiefs were questioned about their time in law enforcement. Length of service was measured by asking officers to list the years and months they had worked in law enforcement. Prior military service was measured by asking chiefs if they had any experience in the military. The answers "yes" and "no" were coded as 1 and 0, respectively. Table 1 provides a summary of the independent variables, including the source, and the operationalization of the variables.

Table 1

Summary of Independent Variables

Variable	Source	Operationalization
Organizational structure		
Agency size	BJS CSLLEA[1]	Number of full-time sworn employees, and full-time civilian employees
Civilianization	BJS CSLLEA	Percentage civilians employed by the agency
Task scope	BJS CSLLEA	Number of possible services performed
Interagency collaboration	BJS CSLLEA	Participation in five possible task forces (human trafficking, drug trafficking, gangs, antiterrorism, and violent crime)
Environment (social disorganization)		
Juvenile population	2010 U.S. Census population data	Percentage of population less than 18 years of age
Hispanic population	2010 U.S. Census population data	Percentage of Hispanic
Household income	2010 U.S. Census population data	Median household income
Environment (heterogeneity)		
Racial heterogeneity	2010 U.S. Census population data, 2012 American Community Survey estimate	Gibbs-Martin D

(continued)

Variable	Source	Operationalization
Environment (population)		
Community population	2012 U.S. Census population data	Total population of community served by chief
Population change	Bureau of Justice Statistics	Percent population change between 2010 and 2012
Crime rate	United States Census Bureau, Texas Department of Public Safety	(Total number of crimes/population) x 1,000
Chiefs' demographics		
Gender	TCPPP[2] survey	Gender of chief
Age	TCPPP survey	Age of chief at the time of the survey
Race	TCPPP survey	Race of chief
Highest level of education attainment	TCPPP survey	Highest level of education at the time of the survey
Marital status	TCPPP survey	Marital status of chief at the time of the survey
Length of time in law enforcement	TCPPP survey	Years and months worked in law enforcement
Prior military experience	TCPPP survey	Yes or no

[1] Bureau of Justice Statistics, Census of State and Local Law Enforcement Agencies
[2] Texas Chief of Police Panel Project

Analytical Strategies

The data are first explored with univariate descriptive statistics and factor analysis. The descriptive statistics included the mean and standard deviation of each variable and the frequencies for the variables that were dichotomized. This study also

employs both bivariate and multivariate analyses. A correlation matrix of the independent variables was included to examine correlations in order to look for multicollinearity. Bivariate correlations were tested between the dependent variables and the independent variables in order to examine their relationships. A multivariate analysis was conducted to find out which of the independent variables explains variation in the dependent variables: chiefs' time spent performing activities. Through multivariate analysis, any relationship between the dependent variables and each independent variable can be examined while controlling for the other independent variables. The next chapter is a discussion of the findings resulting from these analyses.

CHAPTER IV

Analysis & Results

Dependent Variable

The dependent variable for this study was the amount of time that chiefs of police spend on 47 different tasks. This was measured on a scale from zero to 10, with zero being equivalent to "no time spent," and 10 being equivalent to "a great amount of time." In some instances, respondents put values greater than ten when asked how often they performed each task. These out of range responses were rare (out of range responses occurred 262 times out of a possible 19,975 (425 x 47) responses, or 1.31 percent of the time). Any responses greater than ten were changed to ten. Within the responses from each participant for each task, there were some missing values. Specifically, some chiefs (of local agencies with less than 357 full-time actual employees) in the sample (n = 425) would leave one (n = 64) or two (n =17), or more responses blank. In total, 151 responses had between one and 47 missing fields in the data. To increase the number of usable cases, the mean response value was calculated for each variable. From there, cases with one or two responses had the individual mean score substituted for the missing values. A total of 98 responses (64 + (17x2)) were changed. If a respondent had three or more missing (98 responses) values, no substitutions were made for the missing values. This mean substitution accounted for 98 responses changed out of a possible 19,975 (425 x 47) responses. Once this was completed, the chiefs' reported scores for each task were converted into hours.[4]

[4] Scores were converted into real time (hours) by summing their responses to each activity, and dividing the reported total number of hours worked in a single week by that sum to create a number that was identified as their "hours per time score." A respondent's "hours per time score" was an indication of

Table 2 reports the full list of activities, and the amount of time chiefs spend on each. In summary, chiefs perform a variety of tasks, ranging from law enforcement duties, to time spent in meetings, to administrative duties. Some of these tasks include conducting patrol, evaluating agency performance, and meeting with the mayor or city manager. The amount of time they average performing any one of these activities ranges from 5 minutes to 3.5 hours.

Table 2

Police Chiefs' Time Spent on Tasks (In Hours)

Activity	Mean (Hours)	Standard Deviation	Range (Hours)
Inside police buildings outside of public view	3.41	2.23	0.00-10.71
Outside police buildings in public	3.11	1.93	0.00-8.76
Evaluating general agency performance	2.34	1.68	0.00-14.81
Meeting with the mayor/city manager	2.08	1.33	0.00-8.00
Meetings with supervisory officers	2.07	1.44	0.00-7.19
Outside police buildings outside of public view	2.06	1.75	0.00-8.94
Meetings with line officers	1.99	1.38	0.00-8.49
Interacting with nonsworn employees	1.81	1.49	0.00-8.64
Conducting patrol	1.66	1.92	0.00-14.40
Working on your agency budget	1.63	1.21	0.00-6.70
Analyzing crime statistics for your community	1.47	1.08	0.00-6.42
Interacting with other local government agencies	1.45	1.28	0.00-14.40
Reviewing, writing, and/or modifying agency policies	1.45	1.11	0.00-7.20

(continued)

how much time, in hours, a response of 1 was equivalent to on the 0-10 scale. From there, each of their responses was multiplied by their own "hours per time score" to generate real time (hours).

Activity	Mean (Hours)	Standard Deviation	Range (Hours)
Responding to citizen complaints related to your agency	1.21	0.99	0.00-6.05
Interacting with the community in public meetings arranged by the agency	1.18	0.97	0.00-4.72
Conducting criminal investigations	1.17	1.55	0.00-8.45
Meeting with the city council or city council members	1.12	1.05	0.00-8.00
Responding to citizen complaints about other community members	1.12	1.05	0.00-6.99
Responding to employee complaints	1.11	0.94	0.00-6.13
Conducting performance evaluations of supervisors/command staff/officers	1.10	0.94	0.00-6.72
Conducting performance evaluations of supervisors/command staff/officers	1.10	0.94	0.00-6.72
Interacting with the community in public meetings arranged by the public	1.01	0.97	0.00-7.85
Reading professional policing publications (e.g. Police Chief Magazine)	0.86	0.78	0.00-4.53
Attending in-service training	0.82	0.81	0.00-4.89
Interacting with the prosecutor's office	0.80	0.72	0.00-4.72
Meeting with other police chiefs	0.77	.69	0.00-3.92
Participating in professional organizations	0.75	0.72	0.00-4.45
Conducting in-service training	0.73	0.83	0.00-4.32
Attending roll call	0.72	0.99	0.00-6.77
In areas not publicly visible such as jails or courts	0.71	0.91	0.00-6.11
Involvement in community fundraisers to benefit local community groups	0.69	0.74	0.00-4.45
Interacting with judges	0.68	0.80	0.00-8.00
Spent interacting with the media	0.64	0.65	0.00-3.25
Reporting crime stats (UCR or other)	0.63	0.76	0.00-4.76

(continued)

Activity	Mean (Hours)	Standard Deviation	Range (Hours)
Arresting offenders	0.54	0.93	0.00-6.57
Participating in internal investigations of officers	0.54	0.65	0.00-4.25
Participating in promotion/demotion activities related to individual officers	0.51	0.64	0.00-3.47
Interacting with courtroom personnel	0.49	0.86	0.00-8.00
Involvement in community fundraisers to benefit the agency	0.46	0.72	0.00-5.05
Writing grant applications	0.45	0.82	0.00-7.06
Participating in studies by completing surveys or interviews	0.43	0.46	0.00-2.89
Conducting personal errands	0.40	0.48	0.00-2.86
Participating in task forces	0.32	0.71	0.00-6.99
Conducting accident investigations	0.31	0.62	0.00-3.78
Executing search warrants	0.29	0.53	0.00-3.78
Interacting with community corrections	0.19	0.43	0.00-3.28
Interacting with CRB (Citizen Review Board)	0.11	0.33	0.00-1.91
Conducting fire investigations	0.07	0.30	0.00-3.38

*All activities listed are from the Texas Chief of Police Panel Project (TCPPP) Survey

Due to the large number of activities, an exploratory factor analysis was conducted to identify any underlying constructs of police chief activities. An oblique rotation was used[5], and after examining the scree plot and initial eigenvalues, six factors were identified, which explained 37.5 percent of the variance, and 34 out of the 47 activities remained, as they loaded above the .4 cutoff. These six factors include law

[5] Choosing a rotation depends on whether or not the underlying factors would theoretically be related to one another. A direct oblimin rotation was utilized instead of the common varimax rotation because it was assumed the underlying factors would, in fact, be associated with each other.

enforcement duties, community service/ organizational maintenance, preventing and addressing negative incidents, meetings, time out of the office, and local sovereigns, and serve as the dependent variables in this study. Table 3 presents the 34 activities and groups them based on their factor loadings.

Table 3

Factor Analysis of Police Chief Activities with Cronbach's Alpha

Variables: Time Spent	Law Enforcement Duties **(0.731)**	Community Service Organizational Maintenance **(0.700)**	Preventing and Addressing Negative Incidents **(0.590)**	Meetings (Internal and External) **(0.634)**	Time Spent Out of Office **(0.600)**	Local Sovereigns **(0.593)**
Arresting offenders	.771					
Conducting criminal investigations	.713					
Conducting accident investigations	.690					
Executing search warrants	.656					
Conducting patrol	.593				.407	
Interacting with community corrections	.329					
Interacting with the prosecutor's office	.325	.319				
Conducting fire investigations	.323					
Involvement in community fundraisers to benefit local community groups		.710				
Participating in professional organizations		.667				
Involvement in community fundraisers to benefit the agency		.653				
Participating in studies by completing surveys or interviews		.462				
Spent interacting with the media		.461				

(continued)

Variables: Time Spent	Law Enforcement Duties **(0.731)**	Community Service Organizational Maintenance **(0.700)**	Preventing and Addressing Negative Incidents **(0.590)**	Meetings (Internal and External) **(0.634)**	Time Spent Out of Office **(0.600)**	Local Sovereigns **(0.593)**
Conducting in-service training		.387			-.359	
Attending in-service training		.379			-.342	
Responding to employee complaints			-.673			
Responding to citizen complaints related to your agency			-.638			
Participating in internal investigations of officers			-.557			
Responding to citizen complaints about other community members	.368		-.456			
Reviewing, writing, and/or modifying agency policies			-.334			
Participating in promotion/demotion activities related to individual officers			-.310		-.412	
Interacting with the community in public meetings arranged by the agency				-.635		
In meetings with supervisory officers				-.623		
Interacting with the community in public meetings arranged by the public				-.603		
In meetings with line officers				-.570		
Interacting with nonsworn employees				-.561		
Attending roll call				-.497		
Inside police buildings outside of public view	-.486				.426	
Outside police buildings outside of public view					.540	
Outside police buildings in public					.665	
Meeting with the city council or city council members			-.401			.687

(continued)

Variables: Time Spent	Law Enforcement Duties **(0.731)**	Community Service Organizational Maintenance **(0.700)**	Preventing and Addressing Negative Incidents **(0.590)**	Meetings (Internal and External) **(0.634)**	Time Spent Out of Office **(0.600)**	Local Sovereigns **(0.593)**
Interacting with judges						.666
Interacting with courtroom personnel						.633
Meeting with mayor/city manager						.549

Table 4 displays the descriptive statistics of the dependent variables utilized in this study. On average, chiefs spent the greatest amount of time in meetings at 9.05 hours per week, with a range of 0-29.66 hours, and the least amount of time interacting with local sovereigns at 4.47 hours per week, with a range of 0-32.00 hours.

Table 4

Dependent Variables, Time Spent per Task, per Week, in Hours

Dependent Variables	N	Mean	SD	Range
Law enforcement duties	331	5.28	4.74	0-27.58
Community service/organizational maintenance	331	4.74	2.97	0-19.09
Preventing and addressing negative incidents	332	6.14	3.15	0-17.57
Meetings (internal and external)	330	9.05	4.35	0-29.66
Time spent out of office	330	8.65	4.43	0-26.29
Local sovereigns	331	4.47	2.77	0-32.00

Independent and Control Variables

The independent variables utilized in this study were categorized into organizational, and community-level or environmental variables. The control variables were the individual-level measures of the chiefs. Table 5 presents the descriptive statistics of the independent and control variables utilized in this study.

Table 5

Independent and Control Variable Descriptive Statistics

Variables	N	Mean (%)	SD	Range
Independent Variables				
Agency size	335	32.17	42.72	1-233
Log agency size	335	1.18	.56	0-2.37
Percent civilianization	335	17.53	13.59	0-62.33
Task scope	334	20.47	4.143	8-31
Interagency collaboration				
No[1]	169	(39.8)		
Yes	165	(38.8)		
Population estimate (2012)	343	13175.80	20258.84	108-118,887
Percent population change	343	2.71	5.51	-13.72-66.05
Crime rate (per 1,000)	353	27.93	25.81	0-244.82
Racial heterogeneity (Gibbs Martin D)	340	0.27	0.19	0.00-0.71
Social disorganization (2010)				
Percentage of population under 18	343	26.99	4.85	7.95-38.20
Percent of persons Hispanic	342	29.43	24.55	1.17-98.18
Median household income	345	52207.86	28847.22	18,854-236,250

(continued)

Variables	N	Mean (%)	SD	Range
Control Variables				
Chief's demographics				
Age in years	413	51.93	8.206	28-71
Gender				
Male[1]	408	(96)		
Female	10	(2.4)		
Race				
White[1]	346	(81.4)		
Non-White	76	(17.9)		
Education				
Less than Bachelor's degree	239	(56.2)		
Bachelor's degree or higher[1]	184	(43.3)		
Military experience				
No[1]	299	(70.4)		
Yes	104	(24.5)		
Marital status				
Married[1]	351	(82.6)		
Not married	72	(16.9)		
Years in law enforcement	419	27.03	9.63	2-67

[1]Reference Category

For this study, only chiefs working in local agencies were used. These agencies were relatively small, averaging 32 full-time employees, with 17.53 percent being civilians. For this sample, the communities chiefs served had crime rates averaging 27.93 per 1,000 persons, and ranged from zero to 244.82 per 1,000 persons. In addition, these

communities averaged 27 percent of their population being under the age of 18, 29 percent of the population being Hispanic, and had median household incomes of $52,000. Examining the control variables, chiefs in this sample were predominately white (81.4%), married (82.6%), males (96%), averaging 27.03 years in law enforcement. The next section will explain the analysis, which includes bivariate correlations, and Ordinary Least Squares regression.

Bivariate Analyses

Table 6 shows the correlations between the continuous independent variables and each dependent variable, as well as the correlations among the independent variables, measured by the Pearson correlation statistic. Variables one through six represent the six dependent variables.

Table 6 reveals statistically significant correlations among all the independent variables and the dependent variable, law enforcement duties, with the exception of percentage of population under 18, and percent of persons Hispanic. The strongest associations with law enforcement duties were agency size and percent civilianization (-.68 and -.47, respectively), while median household income, and age (in years) showed the weakest associations with law enforcement duties (-.17 and -.21, respectively). Percent of persons Hispanic was the only independent variable to display a statistically significant correlation with the dependent variable, community service/organizational maintenance (.19). With regards to the dependent variable, preventing and addressing negative incidents, six of the 11 independent variables showed statistically significant correlations, with agency size and population estimate being the highest (.22 and .19, respectively), and crime rate (per 1,000) and percent of persons Hispanic being the lowest

(.13 and .14, respectively). Agency size and percent civilianization showed the strongest associations with meetings (internal and external) (.33 and .27, respectively), while task scope and racial heterogeneity, measured by Gibbs Martin D, displayed the weakest associations with meetings (.17 and .18, respectively). None of the independent variables were significantly correlated to the dependent variable, time spent out of the office, while four independent variables (agency size, population estimate, task scope, and racial heterogeneity) were significantly correlated with the final dependent variable, local sovereigns (-.23, -.23, -.19, and -.16, respectively).

Table 6

Correlation Matrix of Variables in Analysis (n = 425)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Law enforcement duties	--																
2. Community service/ organizational maintenance	.03	--															
3. Preventing & addressing negative incidents	-.12*	.21**	--														
4. Meetings (internal & external)	-.23**	-.02	.01	--													
5. Time spent out of the office	-.10	-.24**	-.17**	.01	--												
6. Local sovereigns	.15**	-.01	.02	-.14*	-.11*	--											
7. Log agency size	-.68**	.11	.22**	.33**	.11	-.23**	--										
8. Percent civilianization	-.47**	.11	.15*	.27**	.04	-.06	.43**	--									
9. Task scope	-.27**	.08	.11	.17**	-.03	-.19**	.21**	.40**	--								
10. Population estimate (2012)	-.39**	.11	.19**	.21**	.10	-.23**	.96**	.35**	.17**	--							

(continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
11. Crime rate (per 1,000)	-.34**	.07	.13*	.19*	.03	-.10	-.22**	.30**	.20**	.13	--						
12. Racial Heterogeneity	-.42**	.01	.15*	.18**	.06	-.16*	.45**	.44**	.26**	.43**	.22**	--					
13. Percentage of population under 18	-.01	.00	.08	-.04	-.02	.05	-.00	.13*	.04	.07	-.20**	.19**	--				
14. Percent of persons Hispanic	-.07	.19**	.14**	.00	-.10	.07	.07	.23**	.15**	.09	.16**	.15**	.41**	--			
15. Median household income	-.17**	-.06	.00	.04	.04	.00	.10	-.03	-.01	.08	-.15**	-.18**	-.05	-.34**	--		
16. Age (in years)	-.21**	-.02	.02	.02	.05	-.09	.13*	.21**	.15**	.08	-.15**	.16**	-.06	-.00	.07	--	
17. Years in law enforcement	-.36**	.01	.09	.08	.10	-.06	.24**	.32**	.16**	.20**	.25**	.27**	-.05	.02	.11*	.80**	--

*$p < .05$, **$p < .01$
Note: the numbers reported are the Pearson correlation statistic.

The Pearson's correlations were also used to check for multicollinearity, and it revealed issues between age and length of time in law enforcement, as well as population and agency size (.80 and .96, respectively). After removing age and population from the analysis, multicollinearity was no longer a concern (correlations among all variables was >.55). Table 7 presents the relationships among the categorical independent variables and each dependent variable, calculated by independent samples *t*-tests.

Table 7

T-Statistics and Mean Scores for Dichotomous Independent Variables for Six Dependent Variables[1]

Independent Variable		Law Enforcement Duties	Community Service/ Organizational Maintenance	Preventing and Addressing Negative Incidents	Meetings (Internal and External)	Time Out of the Office	Local Sovereigns
Gender	Male	5.16	4.73	6.10*	9.07	8.67	4.39
	Female	7.22	5.46	8.19*	8.44	7.92	6.08
Race	White	5.24	4.47**	5.94**	9.34**	9.09**	4.30*
	Non-white	5.19	6.29**	7.40**	7.54**	6.13**	5.27*
Education level	Less than Bachelor's degree	6.64**	4.72	6.02	8.41**	7.95**	4.80**
	Bachelor's degree or higher	3.56**	4.80	6.33	9.84**	9.43**	4.03**
Marital status	Married	5.08	4.78	6.15	9.22	8.59	4.28**
	Not married	5.99	4.62	6.22	8.29	8.84	5.31**
Prior military experience	Yes	5.73	5.07	6.49	9.08	8.21	4.05
	No	5.05	4.70	6.02	9.10	8.74	4.55
Interagency Collaboration	Yes	4.25*	5.02	6.64*	9.50	8.77	4.03
	No	5.46*	4.55	5.83*	8.86	8.89	4.50

[1] Cells represent mean scores. Significant differences are shaded (*p = .05, **p = .01)

There are many statistically significant differences displayed in Table 7. Female chiefs spend significantly more time preventing and addressing negative incidents than male chiefs. White chiefs spend significantly more time out of the office and in meetings, while non-white chiefs spend significantly more time performing community service/organizational maintenance duties, preventing and addressing negative incidents, and meeting/interacting with local sovereigns. With regards to education level, chiefs with less than a Bachelor's degree spend significantly more time performing law enforcement duties, and meeting/interacting with local sovereigns, while chiefs with a Bachelor's degree or higher spend significantly more time out of the office and in meetings. Chiefs who were not married spent significantly more time meeting and interacting with local sovereigns. There were no significant differences regarding prior military experience. Finally, chiefs working in agencies with interagency collaboration spent significantly more time preventing and addressing negative incidents, and significantly less time performing law enforcement duties than chiefs working in agencies with no collaboration.

Overall, race had the most significant influence on how chiefs of police spend their time, as there were statistically significant differences pertaining to five of the six dependent variables, while prior military experience had no significant influence.

Multivariate Analyses

The following analyses were completed using Ordinary Least Squares (OLS) regression. Tables 8-13 present the relationships between the individual, organizational, and environmental variables and each dependent variable. Table 8 focuses on the first

dependent variable, law enforcement duties, and whether or not the independent variables were significantly related.

Table 8

Unstandardized and standardized coefficients and standard errors for the dependent variable law enforcement duties

	Law Enforcement Duties		
Independent Variables	b	Beta	S.E.
Log agency size	-4.03	-.50	.73**
Percent civilianization	-.01	-.02	.02
Task scope	-.03	-.02	.06
Interagency collaboration	.34	.04	.44
Percent population change	-.15	-.11	.07*
Crime rate (per 1,000)	-.02	-.11	.01
Racial Heterogeneity (Gibbs Martin D)	-1.90	-.08	1.48
Percentage of population under 18	.01	.01	.05
Percentage of persons Hispanic	-.01	-.04	.01
Median household income	-.00	-.08	.00
Gender	.64	.02	1.26
Race	-.31	-.02	.68
Education	-.43	-.05	.47
Marital status	.36	.03	.58
Military experience	.54	.05	.49
Years in law enforcement	-.04	-.08	.03
Adjusted R^2	.496		
Model Significance	.000		

*p = .05, **p = .01

After controlling for many relevant variables, none of the individual-level variables were significantly related to this dependent variable. Agency size and percent population change were the only two variables to be statistically significantly related (at the .01 and .05 level, respectively) to the time chiefs of police spend performing law enforcement duties, such as conducting criminal investigations, or arresting offenders. It was revealed that chiefs working in agencies with fewer full-time employees, in addition to chiefs working in agencies serving communities with smaller population changes from 2010 to 2012 spend more time performing such duties. None of the other organizational or environmental were found to be significantly related. In addition, the overall model was significant, and explained 49.6 percent of the variance. Table 9 shows the relationships between the independent variables and the dependent variable, community service/organizational maintenance.

Table 9

Unstandardized and standardized coefficients and standard errors for the dependent variable community service/organizational maintenance

	Community Service/Organizational Maintenance		
Independent Variables	b	Beta	S.E.
Log agency size	.44	.08	.67
Percent civilianization	.01	.05	.02
Task scope	-.03	-.04	.05
Interagency collaboration	.09	.02	.41
Percent population change	-.08	-.10	.06
Crime rate (per 1,000)	.00	-.00	.01
Racial heterogeneity (Gibbs Martin D)	-1.54	-.10	1.35

(continued)

Independent Variables	Community Service/Organizational Maintenance		
Percentage of population under 18	-.04	-.06	.05
Percent of persons Hispanic	.02	.11	.01
Median household income	-.00	-.05	.00
Gender	-.52	-.03	1.16
Race	-1.84	-.21	.63**
Education	.14	.02	.43
Marital status	.75	.06	.54
Military experience	.41	.09	.45
Years in law enforcement	.03	.08	.02
Adjusted R^2	.036		
Model Significance	.082		

*p = *.05*, **p = *.01*

None of the independent variables were significantly related to this dependent variable, with the exception of race. Race was statistically significant at the .01 level, with White chiefs spending less time performing duties such as participating in a professional organization, or being involved in community fundraisers in comparison to non-White chiefs. The overall model was not significant, and only explained 3.6 percent of the variance. Table 10 shows the relationships of the independent variables with the third dependent variable, preventing and addressing negative incidents. None were significant.

Table 10

Unstandardized and standardized coefficients and standard errors for the dependent variable preventing and addressing negative incidents

	Preventing & Addressing Negative Incidents		
Independent Variables	b	Beta	S.E.
Log agency size	1.17	.21	.69
Percent civilianization	-.00	-.01	.02
Task scope	-.04	-.05	.06
Interagency collaboration	.55	.09	.42
Percent population change	-.07	-.08	.07
Crime rate (per 1,000)	.01	.04	.01
Racial heterogeneity (Gibbs Martin D)	-.12	-.01	1.40
Percentage of population under 18	.04	.06	.05
Percent of persons Hispanic	.00	.03	.01
Median household income	.00	.01	.00
Gender	-.98	-.05	1.20
Race	-1.17	-.13	.65
Education	-.30	-.05	.45
Marital status	-.11	-.01	.55
Military experience	.84	.11	.47
Years in law enforcement	.04	.11	.02
Adjusted R^2	.058		
Model Significance	.019		

*p = .05, **p = .01

Table 11 presents the fourth dependent variable, internal and external meetings.

Table 11

Unstandardized and standardized coefficients and standard errors for the dependent variable meetings (internal and external)

	Meetings (Internal & External)		
Independent Variables	b	Beta	S.E.
Log agency size	2.14	.29	.92*
Percent civilianization	.04	.12	.03
Task scope	.02	.02	.07
Interagency collaboration	-.02	-.00	.56
Percent population change	-.05	-.04	.09
Crime rate (per 1,000)	.01	.02	.02
Racial heterogeneity (Gibbs Martin D)	-.00	.00	1.87
Percentage of population under 18	-.06	-.07	.06
Percent of persons Hispanic	.00	.00	.02
Median household income	.00	.02	.00
Gender	-.98	-.04	1.59
Race	1.70	.14	.86*
Education	-.15	-.02	.59
Marital status	.10	.01	.74
Military experience	.22	.02	.62
Years in law enforcement	-.06	-.13	.03
Adjusted R^2	.071		
Model Significance	.008		

*p = .05, **p = .01

Two variables, agency size and race, were significantly related to the time chiefs of police spend in meetings. More specifically, chiefs who are White, and chiefs who work in agencies with more full-time employees spend more time in meetings with supervisory officers, line officers, and nonsworn personnel, in addition to interacting with

the community in public meetings than non-White chiefs, and those working in agencies with fewer full-time employees. The overall model was significant, and explained 7.1 percent of the variance. Table 12 shows the relationships between the independent variables and the dependent variable, time spent out of the office.

Table 12

Unstandardized and standardized coefficients and standard errors for the dependent variable time spent out of the office

	Time Spent Out of the Office		
Independent Variables	b	Beta	S.E.
Log agency size	1.15	.14	1.01
Percent civilianization	-.02	-.07	.03
Task scope	-.00	-.00	.08
Interagency collaboration	.10	.01	.62
Percent population change	.11	.09	.10
Crime rate (per 1,000)	-.00	-.01	.02
Racial heterogeneity (Gibbs Martin D)	-1.00	-.04	2.06
Percentage of population under 18	-.03	-.03	.07
Percent of persons Hispanic	.01	.03	.02
Median household income	.00	-.03	.00
Gender	.52	.02	1.75
Race	2.94	.23	.95**
Education	1.29	.14	.66
Marital status	-1.10	-.09	.82
Military experience	-.62	-.06	.69
Years in law enforcement	.00	.00	.04
Adjusted R^2	.029		
Model Significance	.121		

*p = .05, **p = .01

Similar to the variable community service/organizational maintenance, the only independent variable to be significantly related to time spent out of the office is race. Chiefs who are White spend more time out of the office than non-White chiefs. The overall model was not significant, and only explained 2.9 percent of the variance. Table 13 displays the final dependent variable, local sovereigns, and its relationships with all sixteen independent variables.

Table 13

Unstandardized and standardized coefficients and standard errors for the dependent variable local sovereigns

	Local Sovereigns		
Independent Variables	b	Beta	S.E.
Log agency size	-1.20	-.30	.48*
Percent civilianization	.05	.27	.02**
Task scope	-.11	-.20	.04**
Interagency collaboration	-.17	-.04	.29
Percent population change	.01	.02	.05
Crime rate (per 1,000)	.00	.01	.01
Racial heterogeneity (Gibbs Martin D)	-.07	-.01	.98
Percentage of population under 18	.00	.01	.03
Percent of persons Hispanic	.00	.01	.01
Median household income	.00	.04	.00
Gender	-1.19	-.09	.83
Race	-1.44	-.22	.45**
Education	-.40	-.09	.31
Marital status	-.11	-.02	.39
Military experience	-.09	-.02	.33
Years in law enforcement	-.01	-.06	.02
Adjusted R^2	.109		
Model Significance	.000		

*p = .05, **p = .01

Four variables were significantly related to the time chiefs of police spend meeting and interacting with local sovereigns, such as the mayor, judge, or courtroom personnel. These include percent civilianization, task scope, race, and agency size. Chiefs who work in smaller agencies were significantly more likely to spend time meeting and interacting with local sovereigns than those working in larger agencies. Nonetheless, chiefs working in agencies with a lower percentage of civilian employees, and a smaller task scope spend less time performing such tasks. Finally, non-White chiefs spend more time meeting and interacting with local sovereigns than White chiefs do. The overall model is significant, and explains 10.9 percent of the variance. Table 14 provides a summary of the relationships between each independent variable and dependent variable after controlling for all other independent variables.

Table 14

Standardized coefficients for dependent variables

	Dependent Variables					
Independent Variables	Law enforcement duties	Community service/ organizational maintenance	Preventing and addressing negative incidents	Meetings (internal and external)	Time spent out of the office	Local sovereigns
Contingency Factors (Organizational)						
Log agency size	-.50**	.08	.21	.29*	.14	-.30*
Percent civilianization	-.02	.05	-.01	.12	-.07	.27**
Task scope	-.02	-.04	-.05	.02	-.00	-.20**

(continued)

	Dependent Variables					
Independent Variables	Law enforcement duties	Community service/ organizational maintenance	Preventing and addressing negative incidents	Meetings (internal and external)	Time spent out of the office	Local sovereigns
Interagency collaboration	.04	.02	.09	-.00	.01	-.04
Contingency Factors (Environmental)						
Percent population change	-.11*	-.10	-.08	-.04	.09	.02
Crime rate (per 1,000)	-.11	-.00	.04	.02	-.01	.01
Racial heterogeneity (Gibbs Martin D)	-.08	-.10	-.01	.00	-.04	-.01
Percentage of population under 18	.01	-.06	.06	-.07	-.03	.01
Percent of persons Hispanic	-.04	.11	.03	.00	.03	.01
Median household income	-.08	-.05	.01	.02	-.03	.04
Control Variables (Individual)						
Gender	.02	-.03	-.05	-.04	.02	-.09
Race	-.02	-.21**	-.13	.14*	.23**	-.22**
Education	-.05	.02	-.05	-.02	.14	-.09
Marital status	.03	.09	-.01	.01	-.09	-.02
Military experience	.05	.06	.11	.02	-.06	-.02
Years in law enforcement	-.08	.08	.11	-.13	.00	-.06
Adjusted R^2	**.496**	**.036**	**.058**	**.071**	**.029**	**.109**

Overall, results indicated that the individual, organizational, and environmental variables were significantly related to one or more of the six dependent variables. In

addition, they explained between 0.03 and 49.6 percent of the variance in the six dependent variables. Three of the six models were significant, but not robust, explaining little of the variance, with the exception of the variable, law enforcement duties. The independent variables agency size and race are significantly related to the greatest number of dependent variables (three and four, respectively). In addition, the dependent variable with the most independent variables significantly related to it was local sovereigns. Unfortunately, none of the independent variables were significantly related to the third dependent variable, preventing and addressing negative incidents.

CHAPTER V

Discussion

The purpose of this study was to explain variation in police chief activities by examining individual, organizational, and community or environmental factors. Structural contingency theory guided the analysis. Data were obtained from the 2013-2015 wave of the Texas Chiefs of Police Panel Project (TCPPP) survey, the Texas Department of Public Safety, the United States Census Bureau, and the Bureau of Justice Statistics, and the statistical models were tested using Ordinary Least Squares (OLS) regression.

Preliminary results show the activities of police chiefs vary, with chiefs spending the greatest amount of time inside police buildings out of the public's view, and the least amount of time conducting fire investigations. Many of the tasks displayed considerable variation regarding the amount of time chiefs spent performing them, while others did not. For example, time conducting patrol ranged from 0-14.40 hours, while time interacting with the Citizens Review Board ranged from 0-1.91 hours. The variables were factor analyzed to identify six activity factors. After removing the variables age and population estimate, 16 variables were tested to determine which significantly influenced the amount of time chiefs performed each activity. This final chapter highlights a few of the significant relationships and findings identified in the analysis chapter.

Each independent variable—individual, organizational, and environmental—was significant in at least one of the six multivariate models. It is not surprising that agency size significantly influenced the amount of time chiefs spend in meetings, perform law enforcement duties, and interact with local sovereigns. Previous research

using contingency theory to explain police behavior, in addition to behavioral adaptations of an organization, found that size of a police organization matters (Meagher, 1985; Randol, 2012). In this study, chiefs in smaller agencies spent more time performing law enforcement duties. A possible explanation for this is that these chiefs do not have as many front-line officers, or they are serving smaller communities, and therefore have more time to perform activities such as patrol or conducting investigations on their own.

Chiefs in smaller agencies were also found to meet and interact with local sovereigns more often than chiefs in larger agencies. Again, this could be due to having more time, as their organization may not be as busy serving a smaller community. Concerning meetings, chiefs in larger agencies spent more time with supervisory officers, line officers, etc. Chiefs in larger agencies supervise a greater number of officers, so there are more officers they must meet with on a regular basis. As this is the first study to examine the activities of police chiefs, more research will have to be conducted to further validate these findings.

Race was the only individual-level factor significantly related to the dependent variables (specifically time performing community service/organizational maintenance tasks, time in meetings, time spent out of the office, and interacting with local sovereigns). In addition, race was significant in more models than any other variable. This result was surprising, as not only were the individual-level variables used as controls in this study, the structural contingency literature focuses solely on variables relating to the organization's structure, and its environment. At the same time, this finding was not completely unexpected, as previous research conducted with the Texas Chiefs of Police Panel Project (TCPPP) has found chief's race to be significant. For example, Brady

(2017) found race to be significant when examining disengagement, a dimension of burnout, among police chiefs. Chiefs of color reported lower levels of burnout than their white counterparts (Brady, 2017). In addition, race was significant in chiefs' ratings of the importance of agency goals (Matusiak & Jurek, in press). Research from the TCPPP has also found race to be statistically significant when examining chiefs' perceptions of state and federal law enforcement organizations, of law enforcement employee and community organizations, of the importance of medical providers, of elected representatives, and of the level of importance related to the local media (Matusiak, 2016). Finally, chiefs' perceptions of maintaining law and order, of maintaining relationships with constituents, and of adopting innovations (Matusiak, King, & Maguire, 2016), as well as their evaluation of the importance of institutional sectors post-Ferguson (Jurek, Matusiak, & King, in press) were significantly influenced by their race. Obviously, race of chiefs is an important factor to consider when examining various phenomena in a sample of Texas chiefs.

Findings in this study showed that nonwhite chiefs spent more time interacting with local sovereigns, and performing tasks related to community service/organizational maintenance than did their white counterparts. This may be the result of non-white chiefs wanting to gain legitimacy for themselves as the leader of an organization, but also for the organization itself in order to show the community that it can be successful under the leadership of a non-white chief. In a study of Baltimore police officers, Dowler (2005) found that police officers of color were more likely to feel criticized, and believe they were perceived as militant. Chiefs of color may be more involved, and engaged in activities that promote good relations with the community, such as participating in

fundraisers, as they may find that focusing their efforts to be a better chief will help them gain legitimacy. Opportunities to further examine this race effect will increase as more officers of color are appointed to the position of chief.

As revealed in this study, observing both the influence of contingency factors (e.g., agency size, population change) and individual-level variables (e.g., race) is important when conducting a time-task analysis on chiefs of police.

Limitations

While the results are most likely generalizable to smaller, local police departments in the state of Texas, the sample lacked variation. Chiefs were predominately white, married, males, which may have affected the models. However, it is possible that variation is limited in those that currently hold the position of chief in local law enforcement agencies in Texas. In addition, due to the analyses involving chiefs of police from smaller, local police departments in Texas only, the findings of this study cannot be generalizable to other states. Second, Cronbach's alpha scores were slightly below the threshold for some of the dependent variables. This could also have affected the models. Finally, as chiefs in this sample were predominately white (80%), the race variable was dichotomized. This prevented the ability to examine any differences among Black/African American, Hispanic/Latino, Asian, Pacific Islander, Native American, and Bi-racial chiefs.

Future Research

The ultimate goal of researching police chief activities and their behavior is to form a clearer picture regarding the causality of police chief activities. When discussing the causes of police chief behavior, it can be difficult due to the interrelatedness of

relevant independent variables, and the various influences that affect police chief activities. Future research should continue to study the activities of police chiefs, and the variables that may influence them. Collecting data and information on chiefs from all areas will allow results to be more generalizable to the United States as a whole rather than the state of Texas.

Conclusion

The current research used structural contingency theory to examine the relationships between individual, organizational, and environmental factors, and the amount of time chiefs of police allocate to a wide range of tasks. Of the variables tested, only five (agency size, percent civilianization, task scope, percent population change, and chief race) were found to be significantly related to at least one of the models. While it is possible there are other factors that can be derived from contingency theory to explain more of the variance in the models, it is important that individual-level factors are not overlooked, as they might have more of an influence on police chief activities than what has been found in time-task analyses of police officers.

This study has addressed a major gap in the existing policing literature: what police chiefs do, and why they do it. As mentioned previously, chiefs play an important role in society and within their organization. Determining how they spend their time can improve the understanding of that role. The information regarding how chiefs spend their day can inform government entities, such as city managers or mayor, who are trying to improve policies on the selection, training, and performance evaluation of chiefs. Those individuals need to know what the role of a police chief truly entails so they can

demonstrate that their procedures for appointing, training, and evaluating the performance of a chief are not arbitrary, but reasonable and rational.

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2015 – 2017 **Master of Arts, Criminal Justice and Criminology**
Sam Houston State University
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RESEARCH INTERESTS

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Graduate Assistant (August 2015- present): Dr. William R. King

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REPORTS

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ORGANIZATIONS

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