

NO TIME FOR STOLEN YARD GNOMES: CHANGING STYLES OF POLICING
DURING AN OIL BOOM

A Dissertation
Submitted to the Graduate Faculty
of the
North Dakota State University
Agriculture and Applied Sciences

By

Thorvald Oliver Dahle

In Partial Fulfillment of the Requirements
for the Degree of
DOCTOR OF PHILOSOPHY

Major Department:
Criminal Justice and Political Science

July 2016

Fargo, North Dakota

North Dakota State University
Graduate School

Title

No Time for Stolen Yard Gnomes: Changing Styles of Policing During
an Oil Boom

By

Thorvald Oliver Dahle

The Supervisory Committee certifies that this *disquisition* complies with North
Dakota State University's regulations and meets the accepted standards for the degree
of

DOCTOR OF PHILOSOPHY

SUPERVISORY COMMITTEE:

Dr. Carol A. Archbold

Chair

Dr. Robert S. Littlefield

Dr. Jeffrey Bumgarner

Dr. Steven Briggs

Approved:

July 27, 2016

Date

Jeffrey Bumgarner

Department Chair

ABSTRACT

Western North Dakota law enforcement agencies have experienced dramatic changes in the policing landscape as a result of an oil boom. These agencies were forced to deal with a rapidly growing population that brought different cultural expectations and a substantial rise in crime. Using Klinger's (1997) framework of formal and informal policing behaviors, the current study explores how policing styles have changed in these agencies. Researchers interviewed 101 officers from eight agencies to determine how the oil boom impacted the way they conduct their work, interact with citizens, and handle calls for service.

ACKNOWLEDGEMENTS

This dissertation was made possible through the mentoring and support of Dr. Carol Archbold. I will always be grateful for her tireless energy, patience, and guidance through this project and my entire graduate school experience. I am exceptionally grateful for the opportunities to participate in several research projects with Dr. Archbold, and particularly the work in the oil boom region. All those trips to western North Dakota have paid off.

I would like to recognize the work of my committee members, Dr. Jeffrey Bumgarner, Dr. Steven Briggs, and Dr. Robert Little field. Their insight, suggestions, and feedback contributed greatly to this work.

Finally, I would like to thank the entire faculty of the NDSU Criminal Justice Program. The graduate school experience was all I thought it would be and more. I hope to pass on the wisdom to others as you have generously done with me.

DEDICATION

To my wife Colleen, without whose love and support this would not have been possible.

I love you. You are my rock.

To my parents and family, who have demonstrated the drive and perseverance to make it through the tough times.

As the final pieces of this project were put together on Father's Day, I would like to dedicate this work to the memory of my father Orel, who taught me the value of hard work and provided the model of the person I strive to be.

TABLE OF CONTENTS

ABSTRACT.....	iii
ACKNOWLEDGEMENTS.....	iv
DEDICATION.....	v
LIST OF TABLES.....	viii
CHAPTER 1. INTRODUCTION.....	1
CHAPTER 2. REVIEW OF THE LITERATURE.....	8
Policing Rural and Small Communities.....	8
Formal versus Informal Policing Action.....	15
Role Strain.....	16
Police Stress and Job Satisfaction.....	17
Policing in Boomtowns.....	19
Crime and Population Change in Boomtowns.....	21
Current Study.....	25
CHAPTER 3. METHODS.....	26
Research Sites.....	27
Data Collection.....	28
Variables.....	31
Dependent Variables.....	31
Independent Variables.....	34
Policing Experience.....	34
Job Satisfaction.....	35
Policing Stress.....	35

Seriousness of Crime.....	36
Analytical Strategy.....	36
CHAPTER 4. RESULTS.....	39
Multivariate Findings.....	46
CHAPTER 5. DISCUSSION.....	50
Limitations.....	53
Future Research.....	54
Concluding Remarks.....	55
Policy Implications.....	57
REFERENCES.....	58

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Questions Selected for Evaluation.....	29
2. List of Formal and Informal Responses.....	34
3. Variable Data.....	40
4. Total Officer Sample Characteristics.....	42
5. Descriptive Statistics for Dependent Variables.....	43
6. Descriptive Statistics for Independent Variables.....	44
7. Correlation Matrix of Variables in Analysis.....	46
8. Binary Logistic Regression for Formal Policing Behavior in Conducting Policing.....	47
9. Binary Logistic Regression for Formal Policing Behavior in Interacting with the Community.....	48
10. Binary Logistic Regression for Formal Policing Behavior in Handling Calls.....	49

CHAPTER 1. INTRODUCTION

North Dakota is one of the least populated states in America. As of the 2010 U.S. Census it was ranked 48th among states in population with only Vermont and Wyoming having lower total populations. While North Dakota ranks low in population, it is a large state covering over 70,000 square miles and ranks 19th among states in size (United States Census Bureau, 2015). The result of this matching of a low population with a large land area is a low population density. North Dakota has only 9.7 persons per square mile, compared to the national average of 87.4, or New York with 411.2 persons per square mile (United States Census Bureau, 2015). Two-thirds of the state is classified as “frontier” according to the 2010 census with fewer than seven persons per square mile, and only three cities in the state have populations exceeding 50,000 (United States Census Bureau, 2015).

In recent years, an oil boom has occurred in western North Dakota in a region known as the Bakken oil formation, which extends into northeastern Montana, and southern Canada. A 2008 assessment of the Bakken formation suggested 3.0 to 4.3 billion barrels of oil could be recovered, but a more recent estimate suggests it may be as high as 7.4 billion barrels (Maugeri, 2013, p. 3). The development of this oil formation has begun to change life in western North Dakota.

Many of the rural areas most impacted by the Bakken oil boom had been struggling for years and gradually losing population. Communities like Williston were experiencing an increase in the average age of residents as young people left and retired farmers moved in (Brown, 2013), but this changed between the 2000 census and the 2010 census. The percentage of those 65 and over fell from 16.75% of the population in 2000

to 14.37% of the population in 2010 (CensusViewer.com, 2016). According to the United States Census Bureau (2015), the population of Williston had slowly fallen in past decades from 13,287 in 1990 to 12,109 in 2005. As the oil boom developed, this trend would be reversed from 2005 to 2014 when the population of Williston would be doubled in less than a decade to over 24,500 citizens (United States Census Bureau, 2015).

Williston, along with Dickinson, North Dakota were the two fastest-growing micro areas in the nation between 2013 and 2014 (United States Census Bureau, 2015). Williston also lies in Williams County which was the fastest growing county (populations of 10,000 or more) in the nation for the same time period (United States Census Bureau, 2015). This rapid growth has driven up the price of land near the Williston airport and parcels that had been selling for \$500 an acre are now worth \$180,000 an acre (Brown, 2013). Housing developments are being rapidly constructed to meet the growing population. The president of the Williston City Commission described the rapid growth as lacking planning:

“This whole area was a field two years ago. By this fall every one of these lots will have a house. I love construction and new buildings. It’s new life, new families moving in, but it’s just happening too fast. Every master plan the city has prepared is obsolete by the time it’s printed. You’d like to have more time to think things through, but everybody is in such a rush.” (Brown, 2013)

The counties surrounding Williams County have also experienced rapid growth. Dunn County grew by 32.8% and McKenzie County, the fastest growing county in the nation between 2013 and 2014 (populations 5,000-9,999), doubled its population between 2005 and 2014 (United States Census Bureau, 2015). However, census numbers do not

accurately reflect that a significant number of people who migrated to North Dakota are living in temporary accommodations. Many of those new to the area are living in what are commonly called “man camps” and some of these are quite large. The man camp outside Tioga can house more than 1,200 residents and would double the population of Tioga if it were inside city limits (Klimasinska, 2013). Although the population growth in the area has often been attributed to an in migration of single males, the impact has been felt in local schools as well. The fall enrollment in Williston schools grew from 2,148 in 2005-2006 to an expected 4,276 in 2015-2016 (Hodur, Bangsrud, Rathage, & Olson, 2013).

The population boom in North Dakota is prompted by a growing oil industry that has come to employ a large portion of the state’s population. Estimates from 2011 suggested 12.4% of the employed population over age 18 was working in areas either directly or indirectly related to oil production (Cauchon, 2011). This growth in employment has led North Dakota to the lowest unemployment rate in the nation at 2.8% in October 2015 (United States Department of Labor, 2015). These new employees are handling a growth in oil production that is 150 times larger than it was in 2006, as now more than 660,000 barrels of oil are being pumped and this could reach two million barrels a day in coming years (Dobb & Richards, 2013).

Impacts from the growth extend into all areas of local and state government. Complaints of dramatic increases in traffic and inadequate roads have led to large investments in law enforcement staffing and road maintenance. McKenzie County went from five accidents per month to five per day and responded by increasing staffing in the sheriff’s office from six to 22 officers (Raimi & Newell, 2014, p. 42). In Dunn County,

the road maintenance budget rose from \$1.5 million to \$25 million (Raimi & Newell, 2014, p. 40) in just three years and requests coming into the county human services office grew by approximately 60% to 70% in both Dunn and Williams counties (p. 41). Even with the added tax revenue from the oil boom, local governments have struggled financially. The city of Dickinson went from no municipal debt to taking on \$100 million in bonds (Cockerham, 2015). City administrators acknowledged in the short-term fiscal sense they are not better off. Other area communities are in a similar position. Watford City grew from 1,500 in 2010 to an estimated 8,000 in 2013, and their police department grew from 3.5 to 13 sworn officers during the same period (Raimi & Newell, 2014, p. 43). The city that carried no debt now carries \$12.5 million in outstanding debt (Raimi & Newell, 2014, p. 44). City leaders have expressed concern about carrying significant debt after the collapses of previous oil booms. The city of Williston was left with \$28 million in debt for streets and sewers that were installed, but left undeveloped after housing developers left when oil prices collapsed (Brown, 2013). To this point, most local governments are in a net negative position from the effects of the oil boom (Raimi & Newell, 2014).

Part of the fiscal difficulty local governments face may be from the way in which they receive revenues from the state. The state of North Dakota has been conservative in distributing allocations to local governments from oil production and has created a \$3.8 billion budget surplus (Brown, 2013). Local governments cannot assess property taxes on oil and gas production and instead receive allocations from the state to address local needs created by the oil boom. These allocations may not address all local concerns but, can be significant increases from past revenues as demonstrated by Dunn County, which

received \$3.6 million in 2005 and \$30 million in 2012 (Raimi & Newell, 2014, p. 40).

The city of Williston saw its allocations from the state oil and gas revenue grow 1,600% from \$750,000 in 2007 to over \$12 million in 2013 (Raimi & Newell, 2014, p. 44).

Law enforcement agencies in the oil boom area have struggled to keep pace with the population changes and resulting social impacts. The city of Williston saw calls for service triple from 2008-2011, but only added three officers (Archbold, Dahle, & Jordan, 2014, p. 16). Watford City was only able to add one new officer during that time even though calls for service were almost seven times greater, growing from 458 to 3,109 (Archbold, et al., p. 17). Some of the agencies in the area lacked sophisticated record keeping systems to monitor the growth that was occurring and in some cases used a pencil and notepad to record their activities. The rapid changes have left officers in some jurisdictions in a difficult position where they must makeup for a lack of personnel. Dahle and Archbold (2015) found 67% (p. 811) of those officers who were interviewed felt their agency no longer had the resources to keep up with calls for service.

The oil boom has changed the landscape of policing in Western North Dakota and led to agencies rapidly hiring more officers and increasing efforts to retain employees. Williams County added 11 positions from 2008 to 2011 and McKenzie County added 10 during the same period (Archbold et al., 2014, p. 13). Williston offered new police officers a housing allowance of \$350 a month to help ameliorate the impact of the increased cost of living (Brown, 2013). Existing and recruited officers are largely from North Dakota and Minnesota, which are relatively homogenous populations that would not be considered culturally diverse. These law enforcement officers in western North

Dakota now face an influx of population that is more diverse, which creates a work environment that is different from traditional rural policing.

In recent years, the demographic profile of the state has undergone significant changes. According to the North Dakota Census Office (Cicha, 2015, p. 1), the state is now one of ten states that have a larger male than female population with 105 male residents for every 100 female residents. This compares to a national average of 97 males for every 100 females in 2014 (Cicha, 2015, p. 1). In the workforce age population (ages 18 to 64) the gender gap is larger as the ratio becomes 112 males for every 100 females, ranking North Dakota second only to Alaska in this age group (Cicha, 2015, p. 2). The Bakken oil region in western North Dakota is the primary contributor to the change in sex ratios. The counties in the Williston region (Divide, Williams, and McKenzie) saw the largest increase in the sex ratio in the state between 2010 and 2014 (11%), leaving these counties with 117 males for every 100 female residents (Cicha, 2015, p. 1). Another contributing factor is an in migration of young males. There are 118 males for every 100 females in the 20 to 24 age range coming into the state and an out migration of residents over age 65 which has a higher female density (Cicha, 2015, p. 2).

In addition to changes in the ratios of men and women in North Dakota, racial diversity has increased along with average incomes, particularly in the oil boom region. Between 2000 and 2008 North Dakota's minority population grew by 21.4% to then represent 8.6% of the total population (Schmidt, 2009). The Hispanic population was the fastest growing ethnic or racial minority group during that time period increasing by 69.9%, with the African American population second with an increase of 67.3%

(Schmidt, 2009). Accurately measuring diversity during a time of rapid and transient population growth is difficult. North Dakota officials estimated the number of African-American and Hispanic residents increased by over 50% between 2010 and 2013, and they believed that number was likely low as many were living in temporary housing (Hargreaves, 2015).

As oil production increased in western North Dakota, so did household incomes. The oil boom began to develop in 2008 when the median household income in North Dakota was \$50,235, but by 2014 it had grown by 17.5% to a record high of \$59,029 (United States Census Bureau, 2014). The counties in the oil boom region earned significantly higher average annual wages with Williams County at \$77,636, McKenzie County \$72,072, and Slope County \$70,720 (Bureau of Labor Statistics, 2014). The changes in the population in western North Dakota have led to the local police dealing with a younger, more racially diverse population, that is disproportionately male, and that has a significant amount of disposable income.

The purpose of this study is to examine how the disruption of the normal social structure may lead to changes in rural policing behaviors. More specifically, the research question to be addressed is: How have increases in population, cultural and racial diversity, and crime resulting from the oil boom affected perceptions of policing in western North Dakota? The following review of the literature will examine the research that has been conducted on rural policing and a smaller subset of literature exploring the impact of an oil boom on local law enforcement.

CHAPTER 2. LITERATURE REVIEW

Included in this literature review are studies that examine a number of issues relevant to policing in a rural area and how they may impact police officer behavior. The review begins with research regarding rural policing and how it may differ from policing done by larger agencies. Next, research regarding police stress and job satisfaction is examined; including how these factors might interact and affect policing behavior. Then, studies that focus on policing, crime and population change in boomtowns will be reviewed. The review of literature on boomtowns and the changes occurring there is important, as it is reflective of what is happening in the policing environment in western North Dakota. Finally, a description of formal and informal policing is included, as the proposed study will be examining what variables might be predictive of a change in police officer behavior resulting from the oil boom.

Policing Rural and Small Communities

Issues involving rural policing have not generated as much research interest as urban policing (Donnermeyer, 2007; Huey & Ricciardelli, 2015; Pelfrey, 2007; Putt, 2010; Weisheit & Wells, 1996). The paucity of research on the frequency and seriousness of rural crime suggests that it is a lesser version of urban crime (Smith, 2010) and that the same methods of crime control used by police in urban areas should work in rural areas (Weisheit & Wells, 1996). Weisheit (1993, p. 217) described this focus on urban areas as “urban ethnocentrism,” which suggests that the strategies and theories developed in the city would likewise apply to rural environments. For some, rural and small-town policing is regarded as a smaller more simplistic version of urban policing where the common issues faced in both environments creates a common culture of

American policing (Crank, 1998). A significant amount of the research acknowledges that differences exist in policing between rural and urban settings (Christensen & Crank, 2001; Falcone & Wells, 1995; Falcone, Wells, & Weisheit, 2002; Johnson & Rhodes, 2009; Liederbach & Frank 2003; Maguire, Faulkner, Rowland, & Wozniak, 1991).

Much of the recent research on rural policing has been taking place internationally (Australia, Canada, England, New Zealand, and Scotland), but the conclusions drawn are similar to those found in the United States (Buttle et al., 2015; Huey & Ricciardelli, 2015; Merritt & Dingwall, 2010; Putt, 2010; Smith, 2010; Yarwood, 2005, 2010). The nationalized nature of policing in these countries differs from the structure of local law enforcement in the United States and may change the experience of rural policing to some degree. This nationalized organizational structure allows officers to be moved or rotated through assignments and results in them experiencing both rural and urban policing environments (Smith, 2010). The consolidation of rural stations in Scotland has exacerbated the effect of the nationalized system and created more distance between rural law enforcement and the community (Smith, 2010). To counteract the apparent disconnect between police agencies and the public in England and Australia, rural residents have been required to become more involved in local policing (Merritt & Dingwall, 2010; Yarwood, 2010). The programs described by these authors demonstrate an effort by these nations to recreate the closeness with the community described in the rural American policing experience. Rural law enforcement officers in these settings were described as members of the community, emphasizing informal solutions to community problems, and having a capacity for problem solving and peacekeeping (Smith, 2010).

Rural policing is not always conducted in a homogenous population setting and this may impact the crime occurring there (Putt, 2010). The criminal activity in these rural communities may vary based on the population heterogeneity, density, stability, and the economic activity occurring there (Putt, 2010). The geographic isolation described by Putt regarding rural policing in Australia shares similarities with the current environment in western North Dakota. For smaller, more remote communities, law enforcement may be one of the only routinely visible arms of the government (Putt, 2010).

The perception of the isolated nature of rural policing has led to the portrayal of local law enforcement as inept, amateurish, and unprofessional (Ely & Bond, 2014). The reality is small town police have higher clearance rates than urban police agencies, and this is true for virtually all serious crimes as well (Falcone et al., 2002). It is true that urban police officers are faced with about twice as many violent crimes and 70% more thefts than officers in smaller jurisdictions (Bachman, 1992, p. 551). This difference is not universal, approximately 700 counties in the United States have populations under 10,000, but for these counties the aggregate crime rate was higher than 351 of the larger counties that were considered metropolitan (Donnermeyer, 2007, p. 7). These statistics suggest rural areas vary in their degree of social organization and the impact of informal social control, as Donnermeyer (2007, p.14) put it “one gemeinschaft does not fit all.” Those rural areas experiencing rapid changes in their environment may experience a loss in density of acquaintanceship (Freudenburg, 1986). Structural and economic factors, whether they are stable or unstable, may have more impact on the issues facing rural law enforcement than the geographic isolation they may experience (Donnermeyer, DeKeseredy, & Dragiewicz, 2010).

Many scholars fail to recognize or acknowledge that a large proportion of law enforcement agencies are small departments serving small populations. In fact, about half (48%) of local police agencies employ less than ten sworn officers and 73% serve populations of less than 10,000 residents (Reaves, 2015, p. 1). Sheriff's offices also frequently serve rural areas. Approximately 29% of the estimated 3,063 agencies employ fewer than 10 deputies (Reaves, 2011, p. 6), while two-thirds of agencies serve counties with a total population of less than 50,000 (Burch, 2012, p. 2). The environments served by many of these small-town and rural police agencies are significantly different from urban areas; thus, the research conducted there may not accurately translate to less populated areas (Decker, 1979; Falcone, et al., 2002; Maguire et al., 1991; Payne, Berg, & Sun, 2005; Weisheit, Falcone, & Wells, 1994).

Decker (1979) conducted some of the earliest research on rural policing and noted similarities between rural and urban policing in how they are both primarily reactive in their operations. These large and small jurisdictions were also comparable in their handling of serious crimes where they both used little discretion. When police are able to identify a suspect in a serious or felony crime, the use of formal authority is almost inevitable whether in a rural or urban area. This may be due to requirements in police policy or state statute, but officers have little discretionary latitude in these situations. Decker (1979) argued that rural police work differed from urban policing and that the source of this difference originated from the social relationships that were formed between citizens and the police. Rural officers were more dependent on acting within the moral consensus of the community. In this particular case, Decker was studying a rural sheriff's agency and found the sheriff could not afford to alienate potential reporters of

crime. Deputies in a sheriff's office are more likely to live near where they work than urban officers and maintain a friendly relationship with residents. They act more as peace officers than law officers and engage in "consensus patrol" where deputies and the community have similar expectations of how enforcement should be conducted (p. 105). Decker (1979) found deputies took little formal action against residents and tended to look for informal solutions. He suggested that rural life was generally a stable environment where deviance is uncommon among "insiders" and those who fail to obey social expectations are seen as "outsiders" who cannot be trusted. Those seen as outsiders were more likely to experience formal legal action as they threatened standards of stability and conformity.

Researchers have concluded that rural police operate as generalists unlike larger agencies that tend to create specialist positions for officers (Maguire et al, 1991; Payne et al., 2005). The style of policing they engaged in was described as the "do-everything" style (Maguire et al., 1991, p. 185). While both law enforcement officers and citizens agreed that law enforcement and patrol were their most important duties, a considerable amount of their time (35.4%) was spent on keeping order and community service calls (Maguire et al., 1991, p. 184). Here again it was found that serious crime justified formal action, and it was believed outsiders usually caused this need for legal intervention. Ultimately, the study concluded that rural policing is qualitatively distinct from policing done in larger cities.

Later studies confirmed that the community norms and social expectations that make up the culture of rural areas influences how policing is conducted. This rural culture can affect how research is conducted as Weisheit (1993) found rural communities

are more closed to outsiders, reluctant to discuss local deviants, and residents are suspicious of the government. However, it is these closer social ties that allow for informal social control to operate and influence the expectations for law enforcement. People from smaller communities are more likely to want their police to perform a wide variety of functions (Weisheit, Falcone, & Wells, 1994), but they are also often less tolerant of crime (Wilson, 1991). These closer social ties between law enforcement and the community influence policing styles to be more responsive to local residents, which should lead to more local support for the police and higher clearance rates (Weisheit, Wells, & Falcone, 1994). Weisheit and colleagues described the rural area as not just a physical place, but also a *social place* (p. 564, emphasis in the original). Rural officers play a different role in this social place when compared to urban officers, leading them to feel they have more discretion, be more trusting of residents, be more accepting of taking on tasks not viewed as crime-fighting, and feel that citizens were active in cooperative problem solving (O'Shea, 1999). The fact that rural officers are not just members of law enforcement, but are also citizens in their community grants them knowledge of their jurisdiction that urban officers lack (Weisheit & Wells, 1996). As members of the community, residents assume that local law enforcement officials will understand local values and expectations and that they keep order by selectively enforcing the law (Falcone et al., 2002; Payne et al., 2005).

The differing expectations for the police are further demonstrated by the differences in the calls for service that they receive from their respective communities. Urban officers handle significantly more calls on average than small-town officers. Rhodes and Johnson (2008) found officers in smaller agencies answered half as many

calls per shift than officers in larger agencies. Also, the types of calls officers answered were different, with urban agencies receiving more order maintenance calls and smaller agencies receiving more service-oriented calls. While there was some variation in the most common calls, when it came to law enforcement calls, both types of agencies received similar proportions. Urban areas did receive a larger proportion of serious crime calls (Johnson & Rhodes, 2009).

This difference between urban and rural areas in how calls are handled is further magnified by the closeness of the relationships law enforcement officers are likely to have with residents. Research on the enforcement action of officers in rural areas has found it is stressful for them to enforce the law on family members and close friends without prejudice (Oliver, 2004; Putt, 2010; Wood & Trostle, 1997). This degree of familiarity alters enforcement expectations, as one sheriff put it, “I tell the guys we are as much social workers as we are law enforcement officers” (Weisheit, Wells, & Falcone, 1994, p. 562). The expectation is that officers will try to find solutions for problems other than taking formal legal action in the form of arrest, or other legal sanction. As Christensen & Crank (2001) found, rural officers did not have the “hard edge” often described in urban literature. Instead, rural officers relied more heavily on personal skills to solve problems partly because they were more likely on their own without close backup. When officers dealt with issues of public disorder it was often considered a family problem not requiring official formal intervention. This reaction by officers is demonstrative of the preference for problem-oriented policing that rural residents have been found to have (Jiao, 2001). Rural officers who do not abide by the community expectations for the taking of formal legal action are at risk for public ridicule. Close

knit, small communities would prefer offenders be spared the stigma of formal arrest for less serious offenses (Brock & Walker, 2005).

Formal versus Informal Policing Action

The proposed study will examine how policing behavior has changed in western North Dakota after the oil boom, and whether or not officer perceptions of their policing behaviors suggest they are now more or less likely to invoke formal police action. The terms formal and informal authority are used to differentiate between police officer responses to situations and how the use of authority may change when the environment is significantly altered. Worden (1989) examined how situational factors affected the use of formal and informal action. This approach would be similar to that used by Klinger (1997) when examining the relationship between levels of deviance and formal social control response by the police. Klinger suggested that as levels of deviance in a population rise then only the more serious deviant acts are punished. Klinger described this as the “overload hypothesis” and suggested that as social control institutions are overwhelmed, the police lack the capacity to take action as they might have in the past. Klinger explains the increased use of formal authority as using more “vigor” to deal with issues. Thus an arrest is more formal than no arrest, a police report is more formal than no report, and doing a longer investigation is more formal than a shorter one. This idea of a formal authority continuum is what Klinger (1996) used with arrest at one end of the spectrum and gathering information and taking no action at the informal end of the spectrum. Klinger’s use of the term “leniency” would be consistent with the increased use of informal action in an effort to avoid taking formal action like making an arrest or

initiating a police report. It would instead be an effort to maintain order with a minimal use of official intervention.

For the purpose of this current research, using the terms formal or informal allows for the assessment of how police officers are responding to the changes brought on by the rapid population growth associated with the oil boom. In particular, the analysis of their responses will show if the policing style used in these rural areas is becoming more similar to larger urban areas.

Role Strain

For some law enforcement officers, the focus on peacekeeping and non-law enforcement activity (i.e. social work) is not what they expected to be doing when they took the job. Johnson (2012) found that as the degree of role conflict increased officers became less satisfied with their work. This creates role strain, as many officers would prefer to be fulfilling the law enforcement role than the role of peacekeeper (Huey & Ricciardelli, 2015). The matter is further complicated by a “fishbowl effect” (Oliver, 2004) where rural officers feel all of their actions are being watched on and off duty. Rural officers have complained of feeling as though they are always on duty and may even experience more stress than urban officers (Buttle, Fowler, & Williams, 2010). However, the increased visibility can be useful as it facilitates communication and the sharing of intelligence in the community (Fenwick, 2015). Rural officers must strike a balance of being “in” or “of” the community to fulfill their role as law enforcer. Being “in” the community allows for a degree of separation that permits an officer to take legal action when necessary, instead of being “of” the community, which could prejudice official action toward certain people or groups (Fenwick, 2015). For some officers,

working in this environment is a significant source of stress where little official formal action is required and they are obliged to carefully navigate their roles in the community. As Oliver (2004) was told, “Stress in small town and rural law enforcement? Hell, yes we have stress. Nothing to do, I’m bored off my ass, and my only friends are the drunks and cows. This job’s killin’ me!” (p. 37).

Police Stress and Job Satisfaction

A substantial amount of research has confirmed that job stress negatively impacts job satisfaction (Fairbrother & Warn, 2003; Hassell, Archbold, & Stichman, 2011; Johnson, 2012; Julseth, Ruiz, & Hummer, 2011). Crank (1993) found those officers reporting a lower level of job satisfaction had a lower level of work performance and were involved in less enforcement activity. The changes in the policing environment in western North Dakota are impacting the levels of stress for officers in the area. The majority of officers (74%) surveyed reported high levels of work-related stress (Archbold, Dahle, Huynh, & Mrzola, 2016). There are some factors present in rural policing that may help to counteract the impact that stress might have on job satisfaction. Officers in the oil-boom area work relatively independently with little supervision and this autonomous nature of the work has been found to be a crucial predictor of job satisfaction (Carlan, 2007; Johnson, 2012; Miller, Mire, & Kim, 2009; Zhao, Thurman, & He, 1999). Community oriented policing strategies have also been found to have a positive impact on job satisfaction (Greene, 1989; Pelfrey, 2007; Skogan & Hartnett, 1997), and law enforcement in rural areas and small towns is commonly thought to involve a closer relationship between citizens and the police.

Research on the impact of officer demographic characteristics on job satisfaction has produced mixed results. Some research has suggested male officers have higher levels of job satisfaction (Belknap & Shelley, 1992; Buzawa, Austin & Bannon, 1994) while other research found no significant difference between the sexes (Dantzker & Kubin, 1998; Zhao et al., 1999). Findings regarding the effect of race on job satisfaction has been mixed. Race was not found to be a significant factor in several studies (Buzawa, et al., 1994, Carlan, 2007; Dantzker & Kubin, 1998; Zhao, et al., 1999), while Johnson (2012) found African American officers were more satisfied with their jobs. A few studies have found that job satisfaction levels fall as officer tenure increases (Buzawa, et al., 1994; Dantzker & Kubin, 1998; Zhao, et al., 1999) while some research suggests a curvilinear relationship between years of experience and satisfaction where as time passes levels fall, but then rise again with time (Carlan, 2007; Miller, et al., 2009; Yim & Schafer, 2009). Generally, demographic characteristics explain a relatively small amount of the variance in officer job satisfaction ratings (Carlan, 2007; Johnson, 2012).

The organizational characteristics of a law enforcement agency have been found to be related to officer stress (Crank & Caldero, 1991). Police officers in smaller agencies were found to have higher levels of satisfaction (Dantzker, 1997; Scott, 2004). Officers who felt supported by department managers and received feedback from supervisors had increased levels of job satisfaction (Johnson, 2012). Organizations that rotated officers more quickly, and that had lower officer perceptions of morale, had lower levels of job satisfaction (Julseth, et al., 2011).

Since the oil boom began, officers in western North Dakota have reported feeling more valued by their residents and finding more variety and excitement in their work

(Dahle & Archbold, 2015). Studies have found the work environment is an essential contributor to job satisfaction (Zhao et al., 1999). Being recognized for the work they do and feeling they are making a valuable contribution to their jurisdiction helps improve job satisfaction levels among officers (Carlan, 2007; Zhao et al., 1999). The officers in the oil boom area are experiencing significant changes in their work environment. If these transformations lead to a more legalistic or formal way of policing it may lead to lower levels of job satisfaction (Johnson, 2012). It is these characteristics of the job that have been found to be the most powerful predictors of job satisfaction (Miller et al., 2009; Johnson, 2012).

Policing in Boomtowns

Defining what constitutes a “boomtown” is difficult, but it generally consists of some measure of rapid population growth created by a significant economic event, often related to mining or energy resource extraction. This is most consistent with the definition used by Cortese and Jones (1977) who described a boomtown as an area of rapid population growth and social change. Rural areas are generally ill prepared for rapid change and the majority of research suggests that a rapid growth in crime and other social problems accompanies an energy boom (Archbold et al., 2014; Carrington, Hogg, McIntosh, & Scott, 2012; Carrington, McIntosh, & Scott, 2010; Covey & Menard, 1984; Freudenburg & Jones, 1991; Lee & Thomas, 2010; Petkova, Lockie, Rolfe, & Ivanova, 2009; Ruddell, 2011; Ruddell; Jayasundara, Mayzer, & Heitkamp, 2014; Ruddell & Ortiz, 2015; Scott, Carrington, & McIntosh, 2012; Taft, 1981).

Taft (1981) provided an early description of the impact of an energy boom on policing in a rural area that shares many similarities with North Dakota. This area of

Wyoming was lightly populated with a few small communities prior to a rapid growth in oil exploration and mining. Over the course of a few years, the populations of these towns grew rapidly as did crime and calls for service for law enforcement. At the time, Evanston, Wyoming had a population of 8,500 and was the fastest growing boomtown in the United States (Taft, 1981, p. 8). The city experienced a 115% increase in calls for service and tripled the size of their police department in just six years from seven officers to twenty-one (Taft, 1981, p. 10). The police agencies in this area were forced to handle serious crime instead of traffic issues and typical rural service calls. In Emery County, they responded to 94 calls in 1975, but this grew to about 4,000 calls annually by 1981; and they also experienced 10 murders in five years when there were none on record prior to that (Taft, 1981, p. 9). In Rock Springs, they hadn't bothered to keep track of crime statistics prior to 1980, but when this community of 20,000 people began doing so, they counted 40 armed robberies, 333 assaults, and four homicides in one year (Taft, 1981, p. 10). The rapid change in the social environment led to tension between regular residents referred to as "old-timers" and migrating oil workers referred to as "oil field trash." Area social service providers were overwhelmed as they tried to meet the demands placed on them by rising rates of alcoholism, drug abuse, and domestic violence, particularly among new residents.

Research by Covey and Menard (1984) found many of the same issues that Taft had described a few years earlier. They interviewed officials from 14 law enforcement agencies in boomtown areas and found them preoccupied with social changes occurring in their jurisdictions and the consequences that came with them. The respondents described the struggles of dealing with a large influx in population that came from other

areas of the country. This new population seemed to find little to do besides work, drink, and fight. Police agencies were forced to become more professional and formal in their record keeping and enforcement. The officers became more aggressive in their enforcement and felt a responsibility to teach outsiders of the social expectations in their new community. This style of enforcement was reinforced by a local population, that officers felt, depended upon them more after these changes occurred.

Outsiders in one boom area were perceived by both local law enforcement and residents as responsible for increases in crime, alcohol use, and drug use (Scott et al., 2012). Even though excessive drinking was recognized as being present in the local culture as it is in North Dakota, the increase in alcohol-fueled assaults was linked to outsiders (Herzog, 2012). Local residents blamed this effect as resulting from a lack of social control, because the outsiders were not embedded in the community. The frustration created by this perception that outsiders did not try to become part of the community created a social dynamic of “fit-in or fuck off” as an attempt to exert social control over new residents (Scott, et al., 2012, p. 153). Law enforcement officers were caught in the middle as a potential arm of social control where they may more strictly enforce the law, or may see the rowdy behavior as letting off steam and dismiss the use of formal sanction (Carrington et al., 2012).

Crime and Population Change in Boomtowns

When rural areas experience rapid population growth during an energy boom, research suggests they experience a disproportionate increase in crime. Freudenburg and Jones (1991) found 21 of 23 studies established that crime grew faster than the population. These transformative conditions impacting rural or small-town areas seem to

erode the community social structure that had helped formally and informally enforce community expectations. This contradicted Thompson (1979) who had been critical of the “Gillette syndrome” terminology that suggested a rapid increase in crime was associated with rapid population growth. Thompson’s research suggested the crime rate did increase, but mostly in the property related categories and not violent crime.

Other research on economic boom communities also has found a similar growth in crime patterns that supports Thompson’s position. In fact, in one case they found a decrease in homicide and aggravated assault levels (Luthra, Bankston, & Krannich, 2007). It is possible that environmental reasons may have had an impact on crime rates. Unlike the sparsely populated areas in western North Dakota, Luthra and colleagues were examining the Louisiana Gulf Coast. Also, this region has not experienced the boom/bust cycles that have been commonly seen in the west. In fact, they readily admit the “ghost town” is a feature of the west, and since this area in Louisiana has not experienced a decreased demand for oil production, the impacts on social change and economic growth are likely different and perhaps even welcomed by local residents (Forsyth, Luthra, & Bankston, 2007, p. 297). Forsyth and colleagues found residents were likely to encourage changes and hold the belief that oil production brought higher socio-economic status and eventually more social capital and social mobility for their families and children. Brown (2011) also found the fear of increased criminality of outsiders was not necessarily reflective of reality. While residents might have been suspicious of newcomers, many new residents were skilled professional workers who were not predisposed to criminality.

The research on crime growth in boomtowns examined by Freudenburg and Jones (1991) suggested increases in crime were on a scale of three to one or more when compared to growth in population (p. 638). This suggests the type of population growth created by an energy boom is more criminogenic than a typical growth in population. These energy growth areas often involve oil drilling or mining businesses that attract a large population of single males that almost guarantee an increase in crime (Broadway, 2000). Many of the rural areas that are commonly the focus of these developments lack the ability to adjust social support systems adequately to handle the changing environment (Lee & Thomas, 2010). The authors found those communities that were more “civically robust” were better able to deal with the population change as they possessed a stronger social fabric and had lower rates of serious crime (Lee & Thomas, 2010).

Petkova et al. (2009), found the demographic changes in a mining boom area were predominantly represented by an increase in the population of single males. This was particularly noticeable by the lack of change in school enrollment even though the total surrounding population was growing. Although most of the local stakeholders welcomed the benefits brought by the mining industry, an ‘us and them’ attitude was developing among residents. Many local residents blamed the increases in crime, alcohol abuse, and antisocial behavior on new residents. The data examined by Petkova, et al. (2009, p .222) found violent crime, especially sexual assault, was increasing at a rate disproportionate to the increase in population.

A research project in a Canadian boomtown found local residents believed crime had increased and that this growth was an artifact of the new populations in the area

(Ruddell & Ortiz, 2015). This again reflected the social distance that can develop between outsiders and long-term residents. The social distance often is reinforced by the use of derogatory terms and labels like “rig pigs, trash, oil field trash, or gas holes” (Archbold et al, 2014; Ruddell, 2011; Taft, 1981). While residents felt an erosion of safety in their communities, this concern waned over time. They found violent offenses actually were not perceived to be a primary concern for local residents and that increases in drug use, traffic problems, and burglary were more distressing.

When an oil boom occurred in Fort McMurray, Alberta, many new residents flooded in and a divide formed between locals and newcomers as they were not seen as coming to the area to establish a new home (O’Connor, 2015).

People new to the area were categorized as abusing the community and lacking in respect. This new population was blamed for the negative aspects of boomtown living and the increases in crime and disorder they were experiencing. Not all changes created by the economic boom were seen as negative. Young people were found to appreciate the increased diversity and that the increases in crime were believed to be proportionate to the increase in population. Similarly to what Ruddell and Ortiz (2015) found, the appearance of disorder and increased crime became just a part of everyday living.

When sparsely populated rural areas experience an influx of population, they generally lack the housing necessary to accommodate new residents. Mining and energy companies have created work camps designed to house hundreds of men in trailers or other portable housing units that are densely packed together (Carrington, et al., 2010). They may provide a full range of services that include laundry and cafeteria services, but they generally do not provide significant avenues for healthy distraction (Carrington, et

al., 2010). Workers are attracted to area bars and researchers have found it becomes a central point for establishing status in the community and the public performance of masculinity (Campbell, 2006). The end result in these man camps is an abundance of alcohol consumption and an atmosphere that excludes women. This exclusion of women discourages them from coming to the area, staying, marrying, or exerting a “civilizing influence” over this brawling bar room behavior (Barclay, Hogg, & Scott, 2007). The description of drinking, violence, and the presence of sex workers in a frontier mining boom community by Carrington and colleagues (2010) shares many similarities with the descriptions of western North Dakota. This cultural shift created resentment and concern by locals, much as it did in North Dakota (Archbold et al., 2014) where police officers frequently described the same dynamic.

Current Study

This study contributes to the existing body of policing literature by adding to the relatively small amount of research on rural policing. Secondly, it provides an analysis of the impact of an oil boom and the accompanying social and cultural changes that impact law enforcement behavior in a rural area. The following research question was designed to help better understand the changes in police behavior when confronted with rapid changes in their environment: How have increases in population, cultural and racial diversity, and crime resulting from the oil boom affected policing in western North Dakota?

CHAPTER 3. METHODS

Many of the previous studies on policing and crime in rural boomtowns have used a qualitative design (Archbold et al., 2015; Carrington et al., 2010; Covey & Menard, 1984; Dahle & Archbold, 2015; O'Connor, 2015; Petkova, et al., 2009; Scott et al., 2012). The purpose of this study is to provide a quantitative analysis of how an oil boom and accompanying social change impacts police officer perceptions of their enforcement behaviors. The data used for this study is drawn from a larger study conducted in western North Dakota regarding the impact of the oil boom on law enforcement in western North Dakota.

Previous researchers of rural policing have suggested future directions for study should include a cross section of rural agency types, including small municipalities, and rural sheriffs (Liederbach & Frank, 2003). The current research follows the suggestions that were offered in this area by interviewing officers from both small towns and rural county sheriff's deputies. The law enforcement officers in this study would be considered "key informants" (Krannich & Humphrey, 1986, p. 475) that can act as a source of information on what is occurring in the community. Seidler (1974) discussed the advantage of the informant technique for gathering data and described it as relying on a number of "knowledgeable participants who observe and can articulate social relationships (p. 816)." This study gathers data directly from law enforcement officers on policing behaviors that could not be collected from statistics on crime alone.

Research Sites

All eight of the agencies participating in the research project are located in the Bakken oil shale formation region in western North Dakota where an oil boom has been occurring since approximately 2008. The contributing agencies are: Killdeer Police Department, Minot Police Department, Tioga Police Department, Watford City Police Department, McKenzie County Sheriff's Office, Ward County Sheriff's Office, and the Williams County Sheriff's Office. Five of the eight agencies employ fewer than 30 sworn officers, and three agencies have between 30 and 60 sworn staff. The participating agencies are located in four counties that cover a large portion of the Bakken oil field area. Three of the counties (Dunn, McKenzie, Williams) are among the top five oil producing counties in North Dakota (North Dakota Oil and Gas, 2015). The remaining county (Ward) ranks 16th among 19 oil producing counties (North Dakota Oil and Gas, 2015). The selection of the agencies involved in this research allows for the comparison of policing experiences in diverse settings within the oil boom region.

The nature of the rapid population growth in the oil boom region makes accurate population estimates difficult. Many of the new residents share similar transient living situations as they live in man camps and other temporary quarters without establishing a permanent home, but census bureau estimates still show dramatic growth. McKenzie County is the largest oil-producing county in the region (North Dakota Oil and Gas, 2015) and has seen its population double between 2004 and 2014 (United States Census Bureau, 2015). In Williams County, the U.S. Census Bureau estimates that the city of Williston doubled its population between 2010 and 2013, and this does not likely consider the transient man camps on the edges of the city (Plushnick-Masti &

Macpherson, 2013). Five of the eight law enforcement agencies in the study are in these two counties, and the communities they serve offered little housing for new residents. To meet the demand, some oil companies constructed man camps near the edges of some towns. An example would be the city of Tioga, where the largest man camp in North Dakota (Tioga Lodge) is just a few miles outside the city limits and can house up to 1,238 people, which would effectively double the population of Tioga if the camp were filled to capacity (Klimasinska, 2013).

Data Collection

The data for this study were gathered using face-to-face interviews of police officers in the Bakken oil field region of North Dakota. The interviews began in the fall of 2012 and were completed in the spring of 2013. More than half of the officers from each agency participated. Only those officers who worked in a capacity that required responding to calls for service or participating in patrol assignments were eligible to be interviewed. Those whose assignment did not include uniformed patrol responsibility or similar direct field service delivery were not included. Ultimately, 101 of 138 (73%) sworn officers eligible to participate in the survey were interviewed.

Three researchers either met with the officers in a law enforcement center or during ride-alongs to conduct the interviews. Officers were asked open-ended questions regarding how the oil boom impacted their agencies, their communities, their interactions with residents, and how they conducted their policing activities. Open-ended questions allowed the respondents to give thorough responses to the questions and provide additional context. Frequently, officers not only answered the specific question, but also

were willing to provide examples of what the changes in policing meant to them specifically. The interviews generally lasted about 45 minutes.

Six questions from the original survey were selected to evaluate how the oil boom in western North Dakota may have impacted the enforcement behaviors of police officers (See Table 1). Officers who were new or were hired during the oil boom were asked to describe their current experiences and how they may have affected their policing behaviors.

Table 1

Questions Selected for Evaluation

INTERVIEW QUESTIONS
1. How, if at all, has the oil boom changed the way that you conduct your work as a police officer?
2. How, if at all, has the oil boom changed the way that you interact with people in the community?
3. Do you handle calls for service in the same manner as before the oil boom? Explain.
4. Do you think that the oil boom has changed the stress associated with your job? Explain.
5. How, if at all, has the oil boom impacted your level of job satisfaction?
6. How, if at all, has crime in your community changed since the oil boom began?

These questions were chosen because they offer the best measures from the survey of how the economic and social changes created by the oil boom in western North Dakota impact policing behavior. The majority of past research suggests economic boom areas experience a disproportionate increase in crime (Weisheit, Wells, & Falcone, 1995). In addition, the ethnically diverse new populations may be perceived as threatening, particularly if entering what had been a homogenous community prior to the boom (Broadway, 2000). Law enforcement officers in an energy boom area suggested the application of law had become more impersonal and that the use of formal control

measures had increased in an effort to exert more social control (Covey & Menard, 1984). As a similar energy boom area, western North Dakota may see the same dynamic occurring.

Asking officers how they believe crime has changed allows for an assessment as to whether or not the changes are simply in the amount of crime or also in the seriousness of crime. Research consistently suggests that the seriousness of the offense is a predictor of the likelihood of arrest, initiation of a police report, or other formal action (Klinger, 1996; Ricksheim & Chermak, 1993; Smith & Visher, 1981; Sherman, 1980; Stenross, 1984; Willis & Wells, 1988). If the results from this study in western North Dakota show that officers believe the level of serious crime is increasing, then it would be expected that they would also indicate an increased use of formal authority.

A partial explanation for the effort to exert more social control is that officers are confronted by a larger population of male suspects, and they may have had different cultural experiences with law enforcement leading them to be perceived as more disrespectful. Sherman (1980) found each of these characteristics predicted that arrest would be more likely, and research has generally found suspect behavior or disrespect increases the likelihood of the use of force by officers and subsequently formal legal action (Black, 1980; Engel, Sobol, & Worden, 2000; Smith & Visher, 1981; Terrill & Mastrofski, 2002; and Worden, 1995). Additionally, the population moving to North Dakota is more racially diverse than the resident population and minority status has been found to be a powerful predictor of arrest (Kochel, Wilson, & Mastrofski, 2011; Sherman, 1980; Swanson, 1978).

The selected questions also assess how changes in the rural policing environment are impacting the stress officers are feeling, and how this is affecting how they do their work. Research suggests that workplace stress is correlated with job satisfaction (Fairbrother & Warn, 2003; Hassell et al., 2011; Johnson, 2012; Julseth, et al., 2011) and these factors may affect officer performance. The impact of job satisfaction on officer performance was examined by Crank (1993), who found those officers who were less satisfied responded by being involved in less activity. This dynamic may be different in a rural area as Oliver (2004) found the long periods of inactivity created more job dissatisfaction. The results from past research are somewhat conflicting, as increases in stress could result in a decrease in activity or formal behavior, or increased activity for rural officers may improve their stress level and cause them to be more active and thus involved in more formal action. Complicating the issue is that research suggests occupational stress originates from two primary sources, job demands and a lack of resources (Brooks & Piquero, 1998; Pienaar & Rothmann, 2003). The oil boom area of North Dakota is experiencing both an increase in job demands and a lack of resources. This suggests police officers in the area would likely experience an increase in job stress, which in turn may affect their behavior when engaged in policing activities.

Variables

Dependent Variables

The police are a mechanism of social control and are affected by their environment and the crime occurring in it (Klinger, 1997). Klinger theorized that an inverse relationship would exist between the level of deviance and the formal social control exercised by the police. For those jurisdictions that experienced high levels of

deviance, only the more serious violations would be punished. The rural towns and counties in the oil boom area of North Dakota are experiencing the effects of social disruption and disorganization, which shares similarities with the socially disorganized and crime-ridden areas in a city that Klinger examined. For the dependent variable in his theory, Klinger wanted to explain the variation in the use of formal legal authority by police officers. This formal authority involved the use of arrest, taking police reports, investigating crimes, and other formal police actions. At one end of the continuum, Klinger used the term “vigor” to represent the use of formal authority, and “leniency” at the opposite end representing a more informal style of policing. The present study will similarly examine how the environment and the increases in crime occurring in the oil boom region affect the use of formal authority by the police.

The dependent variables in this study address how the oil boom has impacted policing in western North Dakota. The variables assess police officer perceptions on how they may have changed the way they conduct their work, interact with their community, and how they handle calls for service.

The variables are conceptualized in the context of formal or informal legal action. Worden (1989) discussed how police officers practice individual styles of policing where they choose their course of action based on the situation or “set of situational cues” (p. 672). The encounters police officers become involved in with the public are often of an uncertain nature and their choice of action is usually not precisely specified. Each officer takes cues from the actions and behaviors of the person they are dealing with and the expectations of the community they serve. The actions of the officer are thus shaped through these cues, the informal guidance of their co-workers, and the formal

expectations of their agencies. In the context of the social change caused by the oil boom, officers will develop an assessment of how to most effectively use their legal authority. Depending on the judgment of each officer, they may decide to increase the use of their formal legal authority, make no changes, or become even more judicious in their use of formal options.

For each of these three dependent variables the coding will be dichotomized into two categories that measure if the oil boom has tended to cause officers to increase their level of formal action, or if it has either had no effect or decreased the frequency with which they use formal actions. To determine the proper coding for each response, each answer provided by the officers will be read and examined for indications regarding changes in the use of formal law enforcement action when working, interacting with the public, or handling calls. To measure officer tendencies toward formal legal behavior the coding is designed with zero representing informal and one representing formal. Those responses that indicate officers were more likely to use arrest, dealing with more serious crime, responding to more calls of physical violence, dealing with more confrontational suspects, concerned about officer safety, or changing the way they work or interact with people to a more formal or big city approach would all be considered a more formal style of policing. If the responses from officers suggested they were not changing the way they work or interact with people, trying to treat new and old residents the same, less likely to arrest, or just being busier, it would indicate officers have not become more likely to seek formal legal actions in their work (See Table 2).

Table 2

List of Formal and Informal Responses

FORMAL	INFORMAL
Changed work style – More formal style	No change in style
No time for public relations/COP - formal solutions more likely	Only references being busier - Running call to call – wrap up calls faster – avoid formal action
More aggressive in enforcement – traffic	Less likely to arrest – Take less formal action
Negative of new residents - moral decline	Treat everyone the same
Cannot trust new people – disrespectful	Try to get to know people – relate with them
More violence – formal action more likely	
More serious crime – more weapons	
Feels less safe – more cautious, guarded	
Calls now more likely to escalate	
Big city approach now – less patience	
Taking more official reports	
More DUI arrests – Drugs	
More domestic violence	

Independent Variables

Policing Experience

Research has found a negative relationship between the years of experience an officer has and their use of formal legal authority (Crank, 1993; Johnson, 2011; Sherman, 1980; Riksheim & Chermak, 1993). As years of service increased, officers tended to be less legalistic in their policing styles. Officers became more likely to seek order maintenance solutions, and less likely to rely on the use of formal legal authority. Since a large proportion of officers working in the agencies in the current study have less than three years of experience, the research is well positioned to determine if it is a predictor of policing style in this environment.

Each officer participating in the interviews was asked how many months they had been employed as law enforcement officer in western North Dakota. The least experienced officer had one month of experience, and the most experienced officer had

432 months or 36 years on the job. The experience level for each officer is coded based on the number of months the officer has worked for their agency.

Job Satisfaction

Previous research has found when officers discomfort level with the need to apply formal authority increased, their level of job satisfaction declined (Johnson, 2012). Job characteristics occurring in western North Dakota may indicate job satisfaction is not declining, even though the frequency of the use of formal authority may be increasing. Some officers interviewed for this study suggested the variety in their work has increased, and they generally worked in an autonomous work environment with little direction. These job characteristics of independence and diversity of work assignments have been found to be related to improved job satisfaction in prior research (Johnson, 2012; Zhao et al., 1999). Based on the findings from prior research, job satisfaction is used in the current study as an independent variable to examine its relationship with the potential change in policing behavior western North Dakota. Job satisfaction is measured by reading officer responses and coding it as zero if they described being unsatisfied, or less satisfied with their level of job satisfaction since the arrival of the oil boom. Conversely, if the officer suggested their level of job satisfaction was unchanged or improved it was coded as a one.

Policing Stress

The third independent variable in this study is a measure job stress. Findings on whether or not a rural setting influences job stress levels in policing have been mixed with some research suggesting it would be lower (Spielberger, Westberry, Grier, & Greenfield, 1981) or higher (Buttle et al, 2010). For the officers working in the oil boom

area their work environment has changed over the past few years, which could impact the amount of stress they feel and influence their policing behavior. To measure how stress levels may have changed those responses from officers that indicate they are experiencing less or the same amount of stress was coded as a zero, while a response suggesting an increase in stress was coded as a one.

Seriousness of Crime

The fourth independent variable examines how officers perceive crime has changed in their jurisdiction. In particular, whether or not the seriousness of crime has changed disproportionately to the growth in population. Since more serious crimes are more likely to invoke formal legal action from police officers (Bolger, 2014; Sherman, 1980; Terrill & Resig, 2003), a correlation may exist between those officers who believe the growth of serious crime is disproportionate and their use of a more formal style of policing. The coding for this variable will be zero if the officer reports that changes in seriousness of crime are disproportionate to the increase in population, or one if the changes in seriousness of crime are proportionate to the increases in population.

Analytical Strategy

Intercoder reliability is a process used to ensure the coding of a message is evaluated by multiple independent coders, and the extent to which the coders reach the same conclusion on the characteristics of the message (Lombard, Snyder-Duch, & Bracken, 2002). For the purposes of data analysis it has been suggested that intercoder agreement should reach or exceed 90% on a subset of the sample data (Carey, Morgan & Oxtoby, 1996). In this study, two people reviewed the entire interview dataset used in

this paper and coded responses independently. Any disagreements regarding the coding were resolved through discussion and consensus until 100% agreement was reached.

The quantitative data analyses will consist of univariate, bivariate, and multivariate analyses using SPSS version 23. Since the dependent variables are all dichotomous, binary logistic regression is the most appropriate analysis and will be used to report bivariate and multivariate findings (Field, 2009). Descriptive statistics will be provided that show the background characteristics of the sample of officers. Sample characteristics will be described by calculating frequency distributions and percentages for each variable. Bivariate correlations will be calculated to determine if any of the independent and dependent variables are significantly related. Multicollinearity diagnostics will be conducted to ensure no variables are highly correlated. Tolerance statistics will indicate if there is a serious problem with multicollinearity. If the value is below 0.1 it suggests a serious problem (Field, 2009; Myers, 1990), although Menard (1995) suggests any values below 0.2 indicate there may be a concern. After the univariate and bivariate analyses are complete, the quantitative analysis will be completed using multivariate analysis.

Four regression models will be examined to investigate if officers increased their use of formal policing behaviors, or if their perceptions of crime have changed and how this might be predicted by changes in job stress, job satisfaction, and tenure in policing, in western North Dakota. Since each of the dependent variables are coded dichotomously, logistic regression is used and will result in predicted probabilities between zero and one. To determine if the models are correctly specified, the Hosmer-Lemeshow goodness of fit test will be examined. If the test statistic is found to be greater

than 0.05, it will suggest a well-fitting model and that the model's estimates fit the data at an acceptable level. If a satisfactory Hosmer and Lemeshow statistic is calculated then a review of the binary logistic regression can be conducted.

CHAPTER 4. RESULTS

During the interviews of the 101 officers involved in this study, each researcher recorded detailed notes and then transcribed them after the interviews were complete. Six questions were selected as a subset of the original data for this study and they provided a total of 2,265 lines of data (See Table 3). The largest amount of data were gathered from the questions for the first two dependent variables regarding the perceptions of police officers and their use of formal policing behaviors when conducting policing (19.0%), and when interacting with the community (18.9%). The volume of data gathered from these first two questions seems to suggest an added complexity in response that was required to provide a complete answer. In contrast, the data gathered for the independent variables indicates a less nuanced response was necessary. In particular, when officers were asked about their level of job satisfaction the answers provided the smallest amount of data (13.1%). In part, this may have reflected the binary nature of the response that suggested either a decline or improvement in job satisfaction without a need for detailed explanation.

Overall, the volume of data gathered suggests officers generally provided more than yes or no answers, and that they attempted to provide some context for why they answered the way they did. The ordering of the data is a reflection of the order in which the interview questions were posed. The consistency in volume of data gathered shows officers continued to give comprehensive answers even as the interview lengthened in duration.

Table 3

Variable Data

Variable data	Number Lines	%
<u>Dependent Variables</u>		
Conduct Policing	430	19.0
Interact with Community	428	18.9
Handle Calls	367	16.2
<u>Independent Variables</u>		
Job Stress	354	15.6
Job Satisfaction	297	13.1
Seriousness of Crime	389	17.2
	Total = 2265	100

The quantitative analysis consists of univariate, bivariate and multivariate analysis of the responses of police officers to specific interview questions. The data gathered from these questions were read and coded into dichotomized categories. In addition demographic data were gathered regarding the survey participants.

The sample characteristics provide a description of the law enforcement officers who participated in the research interviews. The participants ranged from officers just beginning their career to those who served as officers for more than 35 years. The group was divided into two categories, those who began their careers prior to the oil boom and those who began their career after the oil boom began. For purposes of this research, those employed as officers for 60 months or more were counted in the “pre-boom” group and those with less than 60 months of experience were counted in the “post-boom” group

(See Table 6). While no specific date exists to definitively determine when the oil boom began, many occurrences in the area suggest 2008 was a significant turning point for oil production and population changes in the Bakken oil formation region. For example, calls for service to the police department in Williston increased by more than 20% from 2007 to 2008 (Montana All Threat Center & North Dakota State and Intelligence Center, 2012), and oil production increased by over 39% during the same time (North Dakota Oil and Gas, 2014). By dividing the group into pre- and post-boom groups, it allows for an analysis of any differences that might exist between the groups based on their policing experiences prior to or during the oil boom.

The sample of officers was evenly split between agencies with thirty or fewer sworn officers and those with more than 30 sworn officers. The composition of the sample ensures officers from smaller agencies were adequately represented. Considering the rural setting, what may surprise some is the level of education among the officers as 96% have at least some college experience and nearly two-thirds have a college degree. The large number of two-year degrees may be influenced by the large number of officers coming from Minnesota where a two-year degree is required to work as a law enforcement officer. Although no North Dakota police or sheriff's agency requires a two-year degree, several of the larger agencies require the equivalent of two years of post-secondary education. This may be encouraging more policing applicants to at least complete a two-year degree. See Table 4 for additional description of the sample of officers.

Table 4

Total Officer Sample Characteristics

Variable	N	%	Range	Mean
Age			21-66	35.74
Experience (Months)			1-432	91.50
1-23	39	38.6		
24-119	35	34.7		
120+	27	26.7		
Education				
High School	4	4.0		
Some College	30	29.7		
Two-Year Degree	41	40.6		
Four-Year Degree	24	23.8		
Advanced Degree	2	2.0		
Rank				
Patrol Officer	77	76.2		
Sergeant	11	10.9		
Above Sergeant	13	12.9		
Agency Type				
Municipal	63	62.4		
County	38	37.6		
Agency Size (Number Sworn)				
1-10	12	11.9		
11-30	38	37.6		
31+	51	50.5		

A few notable findings stand out when examining the descriptive statistics of the variables in the analysis. When officers described their policing behaviors a difference appears between how they conduct policing activities, how they interact with the community, and how they handle calls. Officers described an increase in formal action

(55.4%) when conducting policing, but the majority described being less formal in interactions with the community (55.4%), and when handling calls (61.4%) (Table 5).

In an apparent contradiction, the majority of officers reported an increase in stress (74.3%), but this did not impact levels of job satisfaction. The majority of officers (81.2%) reported they have not seen a decline in job satisfaction, or have actually had their level of job satisfaction improve (Table 6). Additionally, officer perceptions of the seriousness of crime and its relationship to the population were evenly split. Slightly less than half (45.5%) of the officers felt the increase in the seriousness of crime was simply a factor of the increase in population. Just over half (54.5%) of the officers perceived the increase in crime as disproportionate to the increase in population, suggesting the demographic make-up of the new population contributed to the increase in serious crime.

Table 5

Descriptive Statistics for Dependent Variables

Variable	More Formal n (%)	Less formal n (%)	Missing n (%)
Conduct Policing	55.4%	36.6%	7.9%
Interact with Community	34.7%	55.4%	9.9%
Handle Calls	34.7%	61.4%	4.0%

Table 6

Descriptive Statistics for Independent Variables

Variable	N	%
Work Experience		
Pre-boom hire < 60 months	41	40.6
Post-boom hire ≥ 60 months	60	59.4
Job Stress		
Increased level	75	74.3
Same or decreased level	26	25.7
Job Satisfaction		
Unsatisfied or less satisfied	19	18.8
Same or more satisfied	82	81.2
Seriousness of Crime		
Proportionate to population	46	45.5
Disproportionate	55	54.5

Bivariate chi-square tests revealed some significant relationships between the dependent variables and the four independent variables. Work experience, whether or not the officer was hired before or after the oil boom began, was significantly related to officer perceptions of their use of formal law enforcement behaviors when involved in conducting policing, $\chi^2(1, N = 93) = .002, p < .05$. Those officers hired prior to the oil boom reported they were less likely to use formal policing behaviors than those hired after the oil boom began. Additionally, officer stress was found to have a significant relationship with officer perceptions of their use of formal policing behaviors in their interactions with their community, $\chi^2(1, N = 91) = .05, p < .05$. Officers who reported lower levels of stress were less likely to describe their policing behaviors as becoming increasingly formal than those reporting higher levels of stress. The chi-square tests

regarding the final dependent variable, officer perceptions of the use of formal behavior in handling calls, did not produce any statistically significant results. To summarize, only officer experience and job stress were found to influence officer perceptions of the use of formal policing behavior. Neither job satisfaction nor perceptions of the seriousness of crime had a significant relationship with the dependent variables.

The correlation matrix revealed two significant relationships between variables. Work experience was significantly correlated with officer perceptions of how they conducted their policing, and with the level of job satisfaction among officers. The positive correlation between work experience and the perceptions officers have of their use of formal authority indicated that those officers hired after the oil boom began were more likely to perceive an increase in the use of formal policing behaviors than those hired before the oil boom. The additional correlation between work experience and job satisfaction indicated those officers hired after the oil boom began were more satisfied with their jobs than those hired before the oil boom began. This correlation was expected as those officers hired after the oil boom began its rapid growth were more aware of what they were getting into than those hired prior to it. Before the multivariate analysis was initiated, multicollinearity diagnostics were examined to check for tolerance scores below 0.2 (Menard, 1995). The collinearity statistics did not reveal any issues as all tolerance scores were found in a range between .771 and .937.

Table 7

Correlation Matrix of Variables in Analysis

Variable	1	2	3	4	5	6	7
1. Work Experience	1						
2. Conduct Policing	.314*	1					
3. Interact Community	.000	.127	1				
4. Handle Calls	.121	.180	.105	1			
5. Job Stress	-.072	.123	.200	.050	1		
6. Job Satisfaction	.324*	.102	-.050	.100	-.052	1	
7. Seriousness of Crime	.108	.005	-.115	.107	-.098	-.119	1

* $p \leq .05$ **Multivariate Findings**

Binary logistic regression was conducted to determine which factors predicted a change in officer perception regarding the use of formal policing behaviors. Separate logistic regression models were conducted for each of the three dependent variables. Prior to interpreting the data, the independent variables were entered into each model and the regression model analytics were examined to ensure the model was a good fit for the data.

The results of the first of the three binary logistic regression models revealed that only one of the independent variables was statistically significant at the $p \leq .05$ level (see Table 8). This first model examined what variables might predict a change in officer perceptions of their use of formal policing behavior in conducting policing. Only work experience was found to be a statistically significant predictor ($p \leq .01$), and it indicated

those officers hired before the oil boom were less likely to suggest they had increased their use of formal policing behaviors in regular policing efforts. The only other variable to approach significance in this multivariate analysis was job stress with a p -value of .108. The job stress variable was found to be significant in the bivariate analysis, but once the additional variables were added it was no longer significant. The Hosmer and Lemeshow test indicated the model was appropriate for the data as the test statistic was not significant, $\chi^2(8, 101) = 5.238, p = .732$. Also, the model chi-square was statistically significant, which confirmed the model was predictive of a change in formal policing behavior, $\chi^2(6, 101) = 16.830, p = .010$.

Table 8

Binary Logistic Regression for Formal Policing Behavior in Conducting Policing

Variable	B	SE	p	Exp(B)
Work Experience	-1.658	.543	.002*	.191
Job Stress	-.965	.601	.108	.381
Job Satisfaction	-.258	.601	.693	.772
Seriousness of Crime	-.167	.523	.749	.846
Interact Community	-.340	.536	.526	.712
Handle Calls	-.535	.550	.330	.585
Constant	2.170			
Model χ^2			$\chi^2(6, 101) = 16.830, p = .010$	
Hosmer and Lemeshow Test			$\chi^2(8, 101) = 5.238, p = .732$	

* $p \leq .01$ Nagelkerke $R^2 = .247$

For both of the remaining models (Tables 8 & 9) the model chi-squares were not significant. As a result, an analysis of the data from these models would not produce reliable results.

Table 9

Binary Logistic Regression for Formal Policing Behavior in Interacting with the Community

Variable	B	SE	p	Exp(B)
Work Experience	-.082	.539	.879	.921
Job Stress	-1.333	.629	.034	.264
Job Satisfaction	.484	.645	.453	1.623
Seriousness of Crime	.457	.499	.359	1.580
Conduct Policing	-.327	.535	.540	.721
Handle Calls	-.330	.521	.401	.719
Constant	-.118			
Model χ^2			$\chi^2 (6, 101) = 8.273, p = .219$	
Hosmer and Lemeshow Test			$\chi^2 (8, 101) = 8.967, p = .345$	

*p ≤ .01 Nagelkerke R² = .129

Table 10

Binary Logistic Regression for Formal Policing Behavior in Handling Calls

Variable	B	SE	p	Exp(B)
Work Experience	-.211	.549	.701	.810
Job Stress	-.178	.582	.759	.837
Job Satisfaction	-1.010	.752	.179	.364
Seriousness of Crime	-.778	.505	.123	.459
Conduct Policing	-.577	.549	.293	.562
Interact with Community	-.340	.518	.512	.712
Constant	.444			
Model χ^2			$\chi^2 (6, 101) = 7.334, p = .291$	
Hosmer and Lemeshow Test			$\chi^2 (8, 101) = 4.330, p = .826$	

* $p \leq .01$ Nagelkerke $R^2 = .117$

Consistent with literature, the regression results from this research suggest officers with less experience are more likely to resort to more formal policing behaviors than more senior officers. In this case, those officers hired after the oil boom began perceived an increase in formal policing behaviors, while those hired prior to oil boom were less likely to use formal policing behaviors. Also, although a correlation was detected between officer job satisfaction and whether or not the officer was hired before or after the oil boom began, job satisfaction did not have a significant impact on officer perceptions of the use of formal policing behaviors. Finally, job stress was not found to influence officer perceptions regarding their use of formal policing behaviors.

CHAPTER 5. DISCUSSION

The purpose of this study was to determine what variables might influence police officer enforcement behavior in the setting of the oil boom in western North Dakota. In particular, how might the variables of officer work experience, job stress, job satisfaction, and perceptions regarding the seriousness of crime affect the use of formal legal authority in police work by law enforcement officers in an oil boom region? The concepts of formal and informal policing are based on the work of Klinger (1997) who described an “overload hypothesis” that can occur when social control institutions are overwhelmed. In this situation, police might search for more informal solutions and become less vigorous in their use of formal authority. As described in the literature review, the use of formal and informal policing behaviors may also be affected by the rural nature of policing. The Bakken oil field in western North Dakota is generally considered to be rural, but it underwent significant changes as the oil boom appeared and expanded. Rural areas generally prefer less use of formal legal action in solving problems, whereas urban areas are more accepting of formal legal sanctions (Brock & Walker, 2005; Decker, 1979).

The quantitative analysis found those officers hired after the oil boom began were more likely to perceive an increase in the use of formal authority in conducting policing compared to those hired before the oil boom began. However, this result was not replicated when asking police officers about their interactions with the community and how they handled calls for service. Officers drew a distinction in their interactions depending on the context. For example, when involved in self-initiated activity or on routine patrol, officers may feel more of an obligation to take formal action when they

observe illegal behavior. This would be similar to what Covey and Menard (1984) found where police officers facing a rapidly changing social environment in a rural area perceived a responsibility to enforce behavioral expectations on new residents. The results of the present study indicate this is particularly true for those officers hired after the oil boom began. These officers may have received direct or indirect feedback from agency administrators that they were hired to address the social and criminal disorder created by the oil boom. For these officers it appears to have created an accompanying duty to take more formal action than those officers hired before the oil boom began. The officers hired since the oil boom began are also more likely to be new to the profession, which generally suggests they will be more active in general enforcement efforts (Crank, 1993; Johnson, 2011; Pelfrey, 2007; Sherman, 1980).

The current research indicates police officers hired prior to the advent of the oil boom are more likely to have an enforcement attitude that is consistent with traditional rural policing. Their expectations of the job were likely founded in more service-oriented activities and less confrontational formal law enforcement. This conclusion is reinforced by the correlation that was discovered between officer work experience and job satisfaction. Those officers hired after the oil boom were more likely to suggest their level of job satisfaction has increased than those hired prior to the oil boom. This may be an artifact of role conflict for those officers hired prior to the oil boom that expected an atmosphere of problem solving and service-oriented work, but instead faced more disorder and criminal behavior than when they began their careers. This connection between job satisfaction and role strain would be consistent with previous research where role strain was found to negatively affect job satisfaction (Johnson, 2012). In particular,

this was true if the changing work environment was becoming increasingly legalistic or formal in how policing was being conducted.

The research results regarding job satisfaction could be considered contrary to expectations when considering the job stress variable. Nearly three out of four (74.3%) officers indicated their stress levels had increased, but this did not appear to impact job satisfaction. Instead, a considerable majority of officers (81.2%) were satisfied with their jobs. Officers reported feeling more valued by residents as increases in crime and disorder rose with the development of the oil boom. This feeling of increased value may have offset the increases in job stress and led to improvements in job satisfaction. Although these variables suggested considerable change had occurred in the work environment, they were not found to significantly impact how police officers did their jobs. Neither job stress or job satisfaction was found to be a significant predictor of how officers conducted policing, interacted with the community, or handled calls.

The final independent variable considered officer perceptions of the changes in serious crime in their jurisdictions. The expectation was that if officers believed crime was increasing more rapidly than the population growth, it would indicate a belief that the new population arriving in western North Dakota was more criminally inclined. It was anticipated that the response from officers would be to use more formal authority to educate the new population of the social expectations of the community. Despite the upheaval occurring in their communities and a dramatic increase in new residents, officers were nearly evenly split on the question of whether or not crime was increasing at a rate greater than the population increase. Just over half (54.5%) of officers suggested the increase in crime was disproportionate to the population growth and just under half

(45.5%) believed the increase in crime was proportionate to the population. While this does suggest a sizable portion of the officers believed the incoming population was more likely to be involved in crime, many officers remained circumspect about the new residents and their contribution to the rising crime statistics. Since the officers were so equally divided on the issue, it is not surprising that the variable was not found to be statistically significant in any of the logistic regression models. Officer perceptions of crime change did not assist in predicting the use of formal policing behaviors while conducting policing, interacting with the public, or handling calls.

Limitations

As with all studies, there are limitations with the current research. First, this study relies on the recollections and perceptions of the officers participating in this study. Individual officer data on arrests and other formal enforcement behaviors were not included. This data would have allowed for the comparison of officer behavior over time from before and after the oil boom. Unfortunately, accurate enforcement data were not available from all of the agencies during the period of interest in this study. Some agencies did not keep any records for arrests, citations, or even calls for service prior to the oil boom. However, there is no reason to believe officer recollections regarding their enforcement behavior would not be reasonably accurate. The advent of the oil boom was relatively rapid and certainly a memorable event for officers that would allow them to distinctly recall how their work behavior might have changed. Second, the results from this study are only generalizable to other rural areas undergoing similar social and environmental change. Areas that are more populated or urbanized would not likely experience the same level of change in the policing environment. Third, this study was

limited to 101 participants. Extending the research area into Montana and southern Canada would have increased the sample size and the likelihood of statistically significant results, but would also have exceeded budget constraints for the project. Finally, the data for this research was drawn from interviews conducted with officers using open-ended questions. As a result, it was not possible to quantify the degree of change officers perceived in their work behaviors or attitudes, as they would if questions were formatted on a Likert scale. Despite these limitations, this research provided an in-depth examination of the issues facing policing in an area experiencing significant population growth.

Future Research

The area of the Bakken oil formation remains largely a rural area even with the development that has occurred. Also, the growth in this area has recently been stunted by a collapse in oil prices. The resulting impact is a leveling off in oil development and employment opportunities (Grunewald, 2016). The changing economic outlook provides an opportunity for researchers to study how this may be changing the policing environment. In particular, are those once seen as outsiders now assimilated into the community culture, or do law enforcement officers still perceive a difference in the population? In addition to officer perceptions, it would also be easier to support this line of research with agency data as these small rural police and sheriff's departments are improving their records management systems. Depending on the availability of data, individual officer behavior could be studied over time to see how formal enforcement behaviors may have changed. Potentially, this could include a comparison of departments regarding crime and enforcement based on agency size and type.

Another direction for research in the region would involve surveys of the local population to obtain their perceptions of crime and law enforcement in their communities. Specifically, to determine if the law enforcement priorities described by law enforcement officers were the same as local residents. Further, are the concerns regarding new residents different among long-term residents when compared to law enforcement officers?

Concluding Remarks

Part of the struggle in dealing with a rapidly changing policing environment is to ensure officers understand what is happening around them. The results of this research discovered over half of the officers believed serious crime was increasing at a rate exceeding the population growth. This suggests many of the officers believe the new population is somehow particularly criminogenic. However, this may be more a matter of perception than reality. Accurately measuring crime is difficult anywhere, but this is especially true in jurisdictions where change is rapidly occurring.

The population increases in western North Dakota were unlike what is experienced in most communities. Instead of new residents moving into existing homes or apartments, man camps and other temporary housing facilities sprang up across the region. The isolated and segregated nature of these communities was not likely conducive to the official reporting of criminal behavior. Thus, official records are prone to error when measuring the prevalence of crime. Law enforcement officers in this environment were in the unique position to not only respond to calls for service, but also to communicate with residents in an informal capacity. These informal conversations

with new and old residents likely helped to formulate perceptions of the pervasiveness of criminal behavior, and who was responsible for it.

The increases in job stress found in this research seem predictable in the uncertain environment of an oil boom. What was not anticipated was the improvement in levels of job satisfaction. These results support previous literature that rural police officers may feel stress from the lack of activity, and actually have their level of job satisfaction improve from feeling more useful, and fulfilling a role which they may see as their primary duty. Officers appreciated the opportunity to act as law enforcement officers in a formal capacity, but this did not translate to all situations. Study results did not indicate officers were more likely to use formal policing strategies when handling calls, or interacting with the community. The perceived increase in formal policing behavior was limited to more self-initiated activity in conducting policing.

This study supports some of Klinger's (1997) findings regarding the use of formal and informal policing. Responses from officers indicated the use of formal policing behaviors was more likely when conducting policing since the oil boom occurred. This increase in formal behaviors coincides with the increase in crime and is consistent with Klinger's assertion that officers will use more formal authority with more serious crimes. Additionally, the results of this study indicate officers may look to avoid the use of formal policing in some situations. Research results did not indicate officers were more likely to use formal action when handling calls. Responses from officers demonstrated a similarity with Klinger's (1997) "overload hypothesis" where officers avoided taking formal action simply because they felt pressure to respond to the next call.

Policy Implications

Preparing for rapid change is a challenge for any administrator, but especially so for a police administrator. Anticipating environmental change of this magnitude is not realistic so, reacting properly is the primary goal. This study demonstrated abrupt social change is likely more difficult for officers who were hired under different circumstances. Agency administrators should recognize the stress this type of change places on officers and particularly those who were hired for more traditional rural policing. Emphasizing community oriented policing, with a particular focus on new populations, would help officers better understand the desires and needs of the community. Additionally, it would help to break down barriers and facilitate communication between “outsiders” and law enforcement officers.

Agencies in western North Dakota should ensure officers are given accurate information regarding the increases or variations in crime. They should also be encouraged to work with neighboring agencies to communicate intelligence regarding what is occurring in their jurisdictions. Providing an accurate picture of what is transpiring in and around their jurisdiction may help officers formulate more realistic perceptions of crime and disorder. If officers have a more realistic view of social disorder and crime, it may influence the use of formal authority in policing activities. Officers may not perceive the need to use formal policing strategies as frequently if the problems are not as severe as they might have otherwise believed them to be.

REFERENCES

- Archbold, C. A., Dahle, T., Huynh, C. T., & Mrozla, T. (2016). "Some Days I Feel Like The Dam Broke..." An Examination of Increased Workload on Police Officer Stress and Job Satisfaction in Western North Dakota. *Internet Journal of Criminology*, (forthcoming).
- Archbold, C. A., Dahle, T., & Jordan, R. (2014). Policing "The Patch": Police Response to Rapid Population Growth in Oil Boomtowns in Western North Dakota. *Police Quarterly*, 17(4), 386-413.
- Bachman, R. (1992). Crime in Nonmetropolitan America: A National Accounting of Trends, Incidence Rates, and Idiosyncratic Vulnerabilities¹. *Rural Sociology*, 57(4), 546-560.
- Barclay, E., Hogg, R., & Scott, J. (2007). Young people and crime in rural communities. In E. Barclay, J.F. Donnermeyer, J. Scott and R. Hogg, eds, *Crime in rural Australia*. 100-112. Sydney: The Federation Press.
- Belknap, J., & Shelley, J. K. (1992). The New Lone Ranger: Policewomen on Patrol. *American Journal of Police*, 12, 47.
- Black, D. (1980). *Manners and customs of the police*. New York: Academic Press.
- Broadway, M. J. (2000). Planning for change in small towns or trying to avoid the slaughterhouse blues. *Journal of Rural Studies*, 16(1), 37-46.
- Brock, D., & Walker, D. (2005). Rural policing and the drug problem: an examination of the influence of major metropolitan areas on drug offending in surrounding rural communities. *The Police Journal*, 78(2), 129-146.

- Brooks, L. W., & Piquero, N. L. (1998). Police stress: Does department size matter? *Policing: An International Journal of Police Strategies & Management*, 21(4), 600-617.
- Brown, C. (2013, February). North Dakota Went Boom. *The New York Times Magazine*, 31.
- Brown, T. (2011). The influence of rapid social change on civic community and perceptions of crime and disorder. *International Journal of Rural Criminology*, 1(1), 89-103.
- Burch, A. M. (2012). Sheriffs' Offices, 2007—statistical tables. *US Department of Justice, Washington*, 1-25.
- Bureau of Labor Statistics (2014). *County employment and wages in North Dakota – third quarter 2013*. Retrieved from: http://www.bls.gov/regions/midwest/news-release/2014/countyemploymentandwages_northdakota_20140424.htm.
- Bureau of Labor Statistics. (2015, October). *Local Area Unemployment Statistics*. Retrieved from: <http://www.bls.gov/web/laus/laumstrk.htm>.
- Buttle, J., Fowler, C., & Williams, M. W. (2010). The impact of rural policing on the private lives of New Zealand police officers. *International Journal of Police Science & Management*, 12(4), 596-606.
- Buzawa, E., Austin, T., & Bannon, J. (1994). Role of Selected Sociodemographic and Job-Specific Variables in Predicting Patrol Officer Job Satisfaction: A Reexamination Ten Years Later. *American Journal of Police*, 13, 51.
- Campbell, H. (2006). Real men, real locals, and real workers: Realizing masculinity in small-town New Zealand. In H. Campbell, M. M. Bell and M. Finne, eds, *Country*

- boys: Masculinity and rural life*, 87-104, Pennsylvania: Pennsylvania State University Press.
- Carey, J. W., Morgan, M., & Oxtoby, M. J. (1996). Intercoder agreement in analysis of responses to open-ended interview questions: Examples from tuberculosis research. *Cultural anthropology methods*, 8(3), 1-5.
- Carlan, P. E. (2007). The search for job satisfaction: a survey of Alabama policing. *American Journal of Criminal Justice*, 32(1-2), 74-86.
- Carrington, K., Hogg, R., McIntosh, A., & Scott, J. (2012). Crime talk, FIFO workers and cultural conflict on the mining boom frontier. *Australian Humanities Review*, 53, 1-14.
- Carrington, K., McIntosh, A., & Scott, J. (2010). Globalization, Frontier Masculinities and Violence Booze, Blokes and Brawls. *British Journal of Criminology*, 50(3), 393-413.
- Cauchon, D. (2011, March). North Dakota economy booms, population soars. *USA Today*. Retrieved from: http://usatoday30.usatoday.com/news/nation/census/2011-03-16-north-dakota-census_N.htm
- CensusViewer.com. (2016). *Williston, North Dakota Population*. Retrieved from: <http://censusviewer.com/city/ND/Williston>
- Christensen, W., & Crank, J. P. (2001). Police work and culture in a nonurban setting: an ethnographic analysis. *Police Quarterly*, 4(1), 69-98.
- Cicha, J. (2015, August). Growing ND by the numbers. *North Dakota Census Office*. Retrieved from: <http://www.commerce.nd.gov/uploads/8/CensusNewsletterAug2015.pdf>

- Cockerham, S. (2015, September). Oil boom a loser for North Dakota cities, counties, study finds. *McClatchyDC*. Retrieved from:
<http://www.mcclatchydc.com/news/nation-world/national/economy/article34552824.html>
- Cortese, C. F., & Jones, B. (1977). The sociological analysis of boom towns. *Western Sociological Review*, 8(1), 76-90.
- Covey, H. C., & Menard, S. (1984). Response to rapid social change—The case of boomtown law enforcement. *Journal of Police Science and Administration*, 12(2), 164-169.
- Crank, J. (1998). *Understanding police culture*. Cincinnati, OH: Anderson.
- Crank, J. P. (1993). Legalistic and order-maintenance behavior among police patrol officers: A survey of eight municipal police agencies. *American Journal of Police*, 12, 103.
- Crank, J. P. and Caldero, M. (1991). "The production of occupational stress in medium-sized police agencies: A survey of line officers in eight municipal departments." *Journal of Criminal Justice* 19(4): 339-349.
- Dahle, T. O., & Archbold, C. A. (2015). "Just do what you can [...] make it work!" Exploring the impact of rapid population growth on police organizations in western North Dakota. *Policing: An International Journal of Police Strategies & Management*, 38(4), 805-819.
- Dantzker, M. L. (1997). Police Officer Job Satisfaction: Does agency size make a difference? *Criminal Justice Policy Review*, 8(2-3), 309-322.

- Dantzker, M. L., & Kubin, B. (1998). Job satisfaction: The gender perspective among police officers. *American Journal of Criminal Justice*, 23(1), 19-31.
- Decker, S. (1979). The rural county sheriff: An issue in social control. *Criminal Justice Review*, 4(2), 97-111.
- Dobb, E., & Richards, E. (2013). The new oil landscape. *National Geographic Society*. Retrieved from: <http://ngm.nationalgeographic.com/2013/03/bakken-shale-oil/dobb-text>
- Donnermeyer, J. F. (2007). Rural crime: Roots and restoration. *International Journal of Rural Crime*, 1(1), 2-20.
- Donnermeyer, J., DeKeseredy, W. S., & Dragiewicz, M. (2010). Policing rural Canada and the United States. In *Rural Policing and Policing the Rural: A Constable Countryside?* Eds. Mawby, R. I. & Yarwood, Burlington, VT, USA. Ashgate Publishing Ltd.
- Ely Jr, J. W., & Bond, B. G. (Eds.). (2014). *The New Encyclopedia of Southern Culture: Volume 10: Law and Politics*. UNC Press Books.
- Engel, R. S., Sobol, J. J., & Worden, R. E. (2000). Further exploration of the demeanor hypothesis: The interaction effects of suspects' characteristics and demeanor on police behavior. *Justice Quarterly*, 17(2), 235-258.
- Fairbrother, K., & Warn, J. (2003). Workplace dimensions, stress and job satisfaction. *Journal of managerial psychology*, 18(1), 8-21.
- Falcone, D. N., & Wells, L. E. (1995). The county sheriff as a distinctive policing modality. *American Journal of Police*, 14(3/4), 123-149.

- Falcone, D. N., Wells, L. E., & Weisheit, R. A. (2002). The small-town police department. *Policing: An International Journal of Police Strategies & Management*, 25(2), 371-384.
- Fenwick, T. (2015). Learning Policing in Rural Spaces: 'Covering 12 Foot Rooms with 8 Foot Carpets'. *Policing*, 9(3), 234-241.
- Field, A. (2009). *Discovering statistics using SPSS*. Thousand Oaks, CA: Sage publications.
- Forsyth, C. J., Luthra, A. D., & Bankston, W. B. (2007). Framing perceptions of oil development and social disruption. *The Social Science Journal*, 44(2), 287-299.
- Freudenburg, W. R. (1986). The density of acquaintanceship: an overlooked variable in community research? *American Journal of Sociology*, 27-63.
- Freudenburg, W. R., & Jones, R. E. (1991). Criminal Behavior and Rapid Community Growth: Examining the Evidence¹. *Rural Sociology*, 56(4), 619-645.
- Greene, J. R. (1989). Police officer job satisfaction and community perceptions: Implications for community-oriented policing. *Journal of Research in Crime and Delinquency*, 26(2), 168-183.
- Grunewald, R. (2016). From red-hot to lukewarm in the Bakken. *Fedgazette*. Retrieved from: <https://www.minneapolisfed.org/publications/fedgazette/from-red-hot-to-lukewarm-in-the-bakken>.
- Hargreaves, S. (2015, February). How an oil boom brought diversity to North Dakota. *CNN Money*. Retrieved from: <http://money.cnn.com/2015/02/02/news/economy/oil-boom-diversity/>.

- Hassell, K. D., Archbold, C. A., & Stichman, A. J. (2011). Comparing the workplace experiences of male and female police officers: examining workplace problems, stress, job satisfaction and consideration of career change. *International Journal of Police Science & Management*, 13(1), 37-53.
- Herzog, K. (2012). North Dakota's heritage of alcohol. *Bismarck Tribune*. Retrieved from: http://bismarcktribune.com/news/state-and-regional/north-dakota-s-heritage-of-alcohol/article_6fd6cc22-3fca-11e2-ad03-001a4bcf887a.html
- Hodur, N. M., Bangsund, D. A., Rathge, R., & Olson, K. Agribusiness and Applied Economics Report No. 708-S February 2013 Estimates of Enrollment Projections: Ray, Stanley, Watford City, Williston and Dickinson.
- Huey, L., & Ricciardelli, R. (2015). 'This isn't what I signed up for': When police officer role expectations conflict with the realities of general duty police work in remote communities. *International Journal of Police Science & Management*, 17(3), 194-203.
- Jiao, A. Y. (2001). Degrees of urbanism and police orientations: Testing preferences for different policing approaches across urban, suburban, and rural areas. *Police Quarterly*, 4(3), 361-387.
- Johnson, R. R. (2011). Officer attitudes and management influences on police work productivity. *American journal of criminal justice*, 36(4), 293-306.
- Johnson, R. R. (2012). Police Officer Job Satisfaction A Multidimensional Analysis. *Police Quarterly*, 15(2), 157-176.

- Johnson, R. R., & Rhodes, T. N. (2009). Urban and small town comparison of citizen demand for police services. *International Journal of Police Science & Management*, 11(1), 27-38.
- Julseth, J., Ruiz, J., & Hummer, D. (2011). Municipal police officer job satisfaction in Pennsylvania: a study of organisational development in small police departments. *Int'l J. Police Sci. & Mgmt.*, 13, 243.
- Klimasinska, K. (2013, February). No kids, no booze, no pets: Inside North Dakota's largest man camp. *Bloomberg Sustainability*. Retrieved from: <http://www.bloomberg.com/news/articles/2013-02-12/no-kids-no-booze-no-pets-inside-north-dakota-s-largest-man-camp>.
- Klinger, D. A. (1997). Negotiating order in patrol work: An ecological theory of police response to deviance. *Criminology*, 35, 277-306.
- Klinger, D. A. (1996). Quantifying law in police-citizen encounters. *Journal of Quantitative Criminology*, 12(4), 391-415.
- Kochel, T. R., Wilson, D. B., & Mastrofski, S. D. (2011). Effect of suspect race on officers arrest decisions. *Criminology*, 49(2), 473-512.
- Krannich, R. S., & Humphrey, C. R. (1986). Using Key Informant Data in Comparative Community Research An Empirical Assessment. *Sociological methods & research*, 14(4), 473-493.
- Lee, M. R., & Thomas, S. A. (2010). Civic community, population change, and violent crime in rural communities. *Journal of Research in Crime and Delinquency*, 47(1), 118-147.

- Liederbach, J., & Frank, J. (2003). Policing Mayberry: The work routines of small-town and rural officers. *American Journal of Criminal Justice*, 28(1), 53-72.
- Lombard, M., Snyder-Duch, J., & Bracken, C. C. (2002). Content analysis in mass communication: Assessment and reporting of intercoder reliability. *Human communication research*, 28(4), 587-604.
- Luthra, A. D., Bankston, W. B., Kalich, D. M., & Forsyth, C. J. (2007). Economic fluctuation and crime: A time-series analysis of the effects of oil development in the coastal regions of Louisiana. *Deviant Behavior*, 28(2), 113-130.
- Maguire, B., Faulkner, W., Mathers, R., Rowland, C., & Wozniak, J. (1991). Rural Police Job Functions. *Police Studies*, 14, (4), 180-187.
- Maugeri, L. (2013). The shale oil boom: a U.S. phenomenon. *Harvard Kennedy School, Discussion Paper #2013-05*.
- Menard, S. (1995). *Applied Logistic Regression Analysis: Sage University Series on Quantitative Applications in the Social Sciences*. Thousand Oaks, CA: Sage.
- Merritt, J., & Dingwall, G. (2010). Does Plural Suit Rural-Reflections on Quasi-Policing in the Countryside. *International Journal of Police Science & Management* 12, 388-400.
- Miller, H. A., Mire, S., & Kim, B. (2009). Predictors of job satisfaction among police officers: Does personality matter?. *Journal of Criminal Justice*, 37(5), 419-426.
- Montana All Threat Intelligence Center & North Dakota State and Local Intelligence Center. (2012). *Impact of population growth on law enforcement in the Williston Basin region*. Retrieved from <https://www.ag.nd.gov/reports/JOINTPRODUCTFINAL.pdf>

- Myers, R. (1990). *Classical and modern regression with applications*. (2nd ed.) Boston, MA: Duxbury.
- North Dakota Oil and Gas. (2014). *Monthly oil production totals by county, 1951–2014*. Retrieved from: <https://www.dmr.nd.gov/oilgas/stats/countymot.pdf>
- O'Connor, C. D. (2015). Insiders and outsiders: social change, deviant others, and sense of community in a boomtown. *International Journal of Comparative and Applied Criminal Justice*, 39(3), 219-238.
- Oliver, W. M. (2004). Stress in small town and rural law enforcement: Testing the assumptions. *American Journal of Criminal Justice*, 29(1), 37-56.
- O'Shea, T. C. (1999). Community policing in small town rural America: A comparison of police officer attitudes in Chicago and Baldwin County, Alabama. *Policing and Society: An International Journal*, 9(1), 59-76.
- Payne, B. K., Berg, B. L., & Sun, I. Y. (2005). Policing in small town America: Dogs, drunks, disorder, and dysfunction. *Journal of Criminal Justice*, 33(1), 31-41.
- Pelfrey Jr, W. V. (2007). Style of policing adopted by rural police and deputies: an analysis of job satisfaction and community policing. *Policing: An International Journal of Police Strategies & Management*, 30(4), 620-636.
- Petkova, V., Lockie, S., Rolfe, J., & Ivanova, G. (2009). Mining developments and social impacts on communities: Bowen Basin case studies. *Rural Society*, 19(3), 211-228.
- Pienaar, J. & Rothmann, S. (2003, September). Job stress in the South African Police Services. Paper presented at the 15th Conference of the South African Institute for Management Scientists, Potchefstroom.

- Plushnick-Masti, R. & Macpherson, J. (2013). Booming oil towns prepare for inevitable bust. *Associated Press*. Retrieved from: <http://finance.yahoo.com/news/booming-oil-towns-prepare-inevitable-171140527.html>
- Putt, J. (2010). Community policing in rural and remote Australia. *Research and Public Policy Series 111*, 32.
- Raimi, D., & Newell, R. G. (2014). Shale Public Finance: Local government revenues and costs associated with oil and gas development. *Shale Public Finance: Local government revenues and costs associated with oil and gas development*.
- Reaves, B. A. (2015). Local Police Departments, 2013: Personnel, Policies, and Practices. *Bureau of Justice Statistics Bulletin*, 1-22.
- Reaves, B. A. (2011). Census of state and local law enforcement agencies, 2008. *Bureau of Justice Statistics Bulletin*. 1-20.
- Rhodes, T. N., & Johnson, R. R. (2008). Patrol Officer Call for Service Workloads: An Urban and Small Town Comparison. *The Police Journal*, 81(3), 184-195.
- Riksheim, E. C., & Chermak, S. M. (1993). Causes of police behavior revisited. *Journal of criminal justice*, 21(4), 353-382.
- Ruddell, R. (2011). Boomtown policing: Responding to the dark side of resource development. *Policing*, 5, 328-342.
- Ruddell, R., Jayasundara, D. S., Mayzer, R., & Heitkamp, T. (2014). Drilling down: An Examination of the Boom-Crime Relationship in Resource-Based Boom Counties. *Western Criminology Review*, 15, 3-17.
- Ruddell, R., & Ortiz, N. R. (2015). Boomtown blues: Long-term community perceptions of crime and disorder. *American Journal of Criminal Justice*, 40(1), 129-146.

- Schmidt, H. (2009, October). The new faces of North Dakota: Ethnic, racial diversity increasing in state. *Prairie Business*. Retrieved from:
<http://www.prairiebizmag.com/event/article/id/10023/>
- Scott, Y. M. (2004). Stress among rural and small-town patrol officers: A survey of Pennsylvania municipal agencies. *Police Quarterly*, 7(2), 237-261.
- Scott, J., Carrington, K., & McIntosh, A. (2012). Established-outsider relations and fear of crime in mining towns. *Sociologia ruralis*, 52(2), 147-169.
- Seidler, J. (1974). On using informants: A technique for collecting quantitative data and controlling measurement error in organization analysis. *American Sociological Review*, 39, 816-831.
- Sherman, L. W. (1980). Causes of police behavior: The current state of quantitative research. *Journal of research in crime and delinquency*, 17(1), 69-100.
- Skogan, W.G. and Hartnett, S.M. (1997). *Community policing, Chicago style*. New York: Oxford University Press.
- Smith, D. A., & Visher, C. A. (1981). Street-level justice: Situational determinants of police arrest decisions. *Social Problems*, 29(2), 167-177..
- Smith, R. (2010). Policing the changing landscape of rural crime: a case study from Scotland. *International Journal of Police Science & Management*, 12(3), 373-387.
- Spielberger, C. D., Westberry, L. G., Grier, K. S., & Greenfield, G. (1981). *The police stress survey: Sources of stress in law enforcement*. National Institute of Justice.
- Stenross, B. (1984). Police response to residential burglaries. *Criminology*, 22(3), 389-402.

- Swanson, C. (1978). The influence of organization and environment on arrest policies in major US cities. *Policy Studies Journal*, 7(s1), 390-398.
- Taft, P., B. (1981), "Keeping the peace in the new wild west", *Police Magazine* 4(4), 8-15.
- Terrill, W., & Mastrofski, S. D. (2002). Situational and officer-based determinants of police coercion. *Justice quarterly*, 19(2), 215-248.
- Terrill, W., & Reisig, M. D. (2003). Neighborhood context and police use of force. *Journal of research in crime and delinquency*, 40(3), 291-321.
- Thompson, J., G. (1979). The Gillette syndrome: A myth revisited. *Wyoming Issues*. 2, (2), 30-35.
- United States Census Bureau. (2015). *New Census Bureau Population Estimates Reveal Metro Areas and Counties that Propelled Growth in Florida and the Nation*. Retrieved from: <http://www.census.gov/newsroom/press-releases/2015/cb15-56.html?cssp=SERP>.
- United States Census Bureau. (2015). *State and County Quick Facts*. Retrieved from: <http://quickfacts.census.gov/qfd/states/38/38053.html>
- United States Census Bureau. (2014). *American Community Survey*. Retrieved from <http://www.census.gov/programs-surveys/acs/news/data-releases.html>
- United States Department of Agriculture. (2012). *National Agricultural Statistics Service, Agriculture Counts*. Retrieved from: http://www.nass.usda.gov/Statistics_by_State/North_Dakota/Publications/Top_Commodities/pub/rank12.pdf

- Weisheit, R. A. (1993). Studying drugs in rural areas: Notes from the field. *Journal of Research in Crime and Delinquency*, 30(2), 213-232.
- Weisheit, R. A., Falcone, D. N., & Wells, L. E. (1994). *Rural crime and rural policing* (Vol. 2, No. 2). US Department of Justice, Office of Justice Programs, National Institute of Justice.
- Weisheit, R. A., & Wells, L. E. (1996). Rural crime and justice: Implications for theory and research. *Crime & Delinquency*, 42(3), 379-397.
- Weisheit, R. A., Wells, L. E., & Falcone, D. N. (1994). Community policing in small town and rural America. *Crime & Delinquency*, 40(4), 549-567.
- Weisheit, R. A., Falcone, D. N., & Wells, L. E. (1995). *Crime and policing in rural and small-town America: An overview of the issues*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, National Institute of Justice.
- Willis, C. L., & Wells, R. H. (1988). The police and child abuse: An analysis of police decisions to report illegal behavior. *Criminology*, 26(4), 695-716.
- Wilson, T. C. (1991). Urbanism, migration, and tolerance: A reassessment. *American Sociological Review*, 117-123.
- Wood, D. S., & Trostle, L. C. (1997). The nonenforcement role of police in western Alaska and the eastern Canadian arctic: An analysis of police tasks in remote arctic communities. *Journal of Criminal Justice*, 25(5), 367-379.
- Worden, R. E. (1989). Situational and attitudinal explanations of police behavior: A theoretical reappraisal and empirical assessment. *Law and Society Review*, 667-711.

- Worden, R. E. (1995). The Causes of police brutality: Theory and evidence on police use of force. In *And justice for all: Understanding and controlling police abuse of force*, eds Geller, W. A., and Toch, H. Washington, DC: Police Executive Research Forum.
- Yarwood, R. (2010). An exclusive countryside? Crime concern, social exclusion and community policing in two English villages. *Policing & Society*, 20(1), 61-78.
- Yarwood, R. (2005). Crime concern and policing in the countryside: Evidence from Parish councilors in West Mercia Constabulary. *Policing and Society*, 15(1), 63-82.
- Yim, Y., & Schafer, B. D. (2009). Police and their perceived image: How community influence officers' job satisfaction. *Police Practice and Research: An International Journal*, 10(1), 17-29.
- Zhao, J.S., Thurman, Q. and He, N. (1999). "Sources of job satisfaction among police officers: A test of demographic and work environment models." *Justice Quarterly* 16(1): 153-173.