DECISION-MAKING STYLES OF ACTIVE-DUTY POLICE OFFICERS: A MULTIPLE-CASE OCCUPATIONAL STUDY

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DECISION-MAKING STYLES OF ACTIVE-DUTY

POLICE OFFICERS: A MULTIPLE-CASE

OCCUPATIONAL STUDY

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Abstract:

Little is known about the decision-making styles of active-duty police officers or what the consequences of not understanding those decision-making styles may be. The purpose of the study was to describe the demographics and decision-making profiles of active-duty police officers, as well as any relationships that may exist among these variables, and the effects of leadership training on decision-making styles. The general approach of this study involved a multi-case examination of quantitative data, both new and historical, regarding the decision-making styles of active duty police officers as determined by the General Decision-Making Styles (GDMS) survey. This research used a quantitative, comparative, multiple-case, descriptive design comprising three data sets. Results from two previous studies and a new study conducted for this research were analyzed to determine if a profile of decision-making styles emerged for those choosing an occupation as a police officer. An online questionnaire gathering demographic data as well as the GDMS responses were combined with an intra-departmental study and a study from research conducted in 2003. The study also examined the potential effects of leadership training for police officers on their measured decision-making style. The study was guided by six theoretical concepts: Adult Learning, Transfer of Training/Learning, Career Choice Models, Leadership Development, General Decision-Making Style, and Decision-Making in the Community Policing context. Analysis of the data revealed a strong relationship with those choosing a career in policing and the Rational decision-making style. In contrast, a strong negative relationship also emerged with the participants and the Avoidant decision-making style. Research strongly indicates that decision-making styles may be situational but that the primary style will resist change and remain dominant in arriving at a decision. Since decision-making styles are unlikely to change with time or through intervention, it is important to consider using the GDMS as a screening tool for future police candidates.

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CHAPTER I

INTRODUCTION

Organizations train employees because they may be seeking to enhance organizational performance, update employees on new procedures, keep personnel informed of legal changes, maintain satisfactory performance levels, or meet mandated legal requirements. While police organizations certainly must provide training for all these reasons, recently they have begun to expand their training goals by educating their officers and supervisors in leadership skills, understanding personality differences, effective communication, and other soft-skills (Gregory, 1998; Hoover, 1992; More & Miller, 2007; Noe, 1986; Prince, Halstead, & Hesser, 2002; Terra, 2009; Walker & Katz, 2005).

When assessing the efficacy of training personnel for leadership or other soft-skills, organizational leaders want to know that the training budget is being employed effectively. One potentially effective use of training resources in policing organizations is analysis of the decision-making skills of active-duty police officers and the potential effects of those skills on field performance, policies, and approaches of the officers. The importance of decision-making and its effects on leadership and performance in the policing profession aroused the researcher's interest in conducting the study.

Research Background and Context

As a recently retired police officer with 24 years of experience, this researcher has personal knowledge of the training, personal characteristics, and necessary soft-skills required by the occupation. The researcher has trained and supervised apprentice police officers (APO) and field training officers (FTO) throughout his career. Professional observation made it clear that when police organizations train new officers, the instructors routinely test the officers on their ability to retain information as well as their ability to adapt to behavior modifications. For example, as officers learn to handle firearms, their firing range scores quantify their progress. This same concept applies to other skills such as CPR, pursuit driving, or the application of legal codes. However, measuring the training of soft-skills appears to challenge the assessors. Soft-skills have been identified as "interpersonal skills that require a mix of attitude, cognition, and behavior ..." (Cheng & Hoe, 2001, as cited by Gilpin-Jackson & Bushe, 2006, p. 982). Laker and Powell (2011) identified soft-skills as, "intrapersonal skills such as one's ability to manage oneself as well as interpersonal skills such as how one handles one's interactions with others" (p. 113). The complexity of soft-skill assessment is documented in the research literature (Gilpin-Jackson & Bushe, 2006; Gregory, 1998; Hoover, 1992; More & Miller, 2007; Noe, 1986; Prince, Halstead, & Hesser, 2002; Santos & Stuart, 2003; Terra, 2009; Walker & Katz, 2005). Based on this evidence, there appears to be a need to evaluate the successful and appropriate leadership development of police officers.

Decision-making, Professional Development, and Leadership Training for Police Officers

An apprentice police officer (APO) may graduate from the police academy but must then learn to adapt to working with the public. Training officers closely monitor and mentor new

officers for the first few months of their careers. As an apprentice officer encounters various situations and people, the training officer observes how the officer handles situations and may guide an apprentice through the learning process to develop the soft-skills of human interaction. The training officer determines the ability of the apprentice officer to gather information, process that information, and make decisions appropriate to the situation. Thus, decision-making is an important skill for officers serving in the field. This researcher's professional experience supports and affirms the importance of appropriate decision-making by police officers in order to protect themselves, their agency, and the public. However, little research evidence is currently available about decision-making styles and methods of police officers.

An officer's training does not end when the apprenticeship phase concludes. According to Terra (2009), an experienced special agent with the FBI, "Some law enforcement agencies find that an ongoing professional development program increases job satisfaction. To be successful in a constantly changing occupation, employees must increase their skills ... Training for officers of all ranks should continue throughout their careers" (p. 12). Depending on the personal goals of individual officers and the needs of the department, the training can continue throughout their careers in law enforcement. As officers grow in their abilities, they may desire promotion to a supervisory position. At this level, an officer must learn to handle a new role of leadership and process a different set of decisions. Instead of leading the public, this individual now must become a leader of peers. The ability to make good decisions thus remains a component of successful performance in a law enforcement career.

Leadership skills are soft-skills, as defined by Cheng-Ho (Gilpin-Jackson & Bushe, 2006). Many believe that police officers should learn leadership skills (Gregory, 1998; Hoover,

1992; More & Miller, 2007; Noe, 1986; Prince, Halstead, & Hesser, 2002; Terra, 2009; Walker & Katz, 2005). However, assessing the effectiveness of leadership training has been challenging and, as the literature indicates, not always successful. According to Santos and Stuart (2003), as reported by Gilpin-Jackson and Bushe (2006), "64% of managers returned to their previous work styles after training and ... managers are even less likely than other staff to immediately apply training at work especially for developmental or soft-skills training" (p. 982). Unlike the quantifiable skills of range shooting, CPR, and pursuit driving, motivational and leadership skills of police officers are not so easily measured. This researcher's professional experience has supported this literature through the observation that police agencies now seek methods of imparting leadership skills, but whether or not leadership training for officers is effective is debatable. To address the questions that may arise concerning leadership soft-skills training, police agencies need to understand the concept of decision-making, which represents an important component of leadership.

As police organizations seek more professionalism from officers, soft-skills training is likely to become more prevalent. One concept in policing that requires sound soft-skills is community policing. "Community policing, employed by many departments, increases the contact officers have with the public and requires additional instruction in interpersonal interaction, ethnic diversity, drug and alcohol awareness, and domestic violence" (Terra, 2009, p. 4). Leadership development that includes soft-skills also promotes an organization's mission and values, which must be clearly communicated throughout the organization (Prince, Hesser, & Halstead, 2002).

Community Policing, Leadership, and Decision-making

The concept of community policing is the theory of policing adopted currently by most police agencies in the United States (Hulderman, 2003; Walker & Katz, 2005). Community policing can mean different things. This is largely because the policing industry is very fragmented (Walker & Katz, 2005). Within the concepts of community policing, there are a variety of ways of addressing crime, social decay, and the traditional functions of policing. The three concepts most associated with community policing are community partnerships, organizational change, and problem solving (Walker & Katz, 2005).

These concepts have implications for the leaders of police agencies. In order to establish community partnerships, officers must reach out to the communities they serve. Those leaders must learn the community needs that a policing agency is equipped to address. Once they understand the needs of a community, they can seek to develop solutions in partnership with that community. This requires an ability of the officers to communicate with, learn about, and lead members of the community into strategies to address their needs. The success of community policing is measured by the success or failure of the decisions made to address the community's needs. This supports the necessity for police agencies to understand the decision-making of their officers.

Organizational change is inherent within any agency. Politics, demographics, new laws, court rulings, and budgets are just a few of the sources of external changes that affect police organizations. Police agencies adapt to those changes thrust upon them externally with internal organizational changes. As Hoover (1992) pointed out, "If the organization cannot or will not respond to change, the process of ossification develops and the stage can be set for a rupturing change" (p. 160).

Police agencies change and adapt as a regular part of serving a community through community policing implementation. However, cultural change within an organization is very slow. That kind of change must have leaders to initiate and maintain the process or it will fail. Such failure is not uncommon in police agencies. According to Moore and Miller (2007), "The average police officer takes the position that the police department fails to provide an environment that satisfies important personnel needs" (p. 201). This perception requires the leaders of police organizations to make decisions that influence not only behavior but also the perceptions of its personnel.

Problem solving is part of any officer's daily job. Trying to calm a couple arguing over custody of a child, persuading a suicidal subject to drop a gun and consider the long-term implications of his or her actions, or dealing with a problem employee who suffers from occupational burnout are just a few of the occurrences common for police officers. A recent study indicated that 58% of the police agencies contacted "actively encouraged police officers to engage in problem solving" and several others had the category of "problem solving" in their performance evaluations (More & Miller, 2007, p. 51). In order to be effective on the job, an officer must be able to assess situations and derive solutions or in other words, make decisions.

The concepts of community policing, problem solving, and leadership – all of which are important for police officers –imply the ability to learn, understand, develop problem solutions, and then make decisions based upon that knowledge, understanding, and the possible solutions. There is considerable research about leadership, community policing, and adult learning; however, there is little information about the decision-making styles of police officers. The General Decision-Making Styles survey (GDMS) describes the decision-making styles of

respondents and has a respectable research history as an instrument for studying the decision-making profiles of organizations. Although the GDMS is readily available, there is little empirical evidence from its use about the decision-making styles most prevalent with those who have chosen a career of policing.

Knowing how police officers process information and arrive at decisions could benefit the leaders of policing organizations. It would be useful to trainers and educators of law enforcement officers, and it could be very beneficial to those charged with the responsibility of establishing and maintaining community-policing efforts. This researcher's awareness of the lack of this knowledge and a desire to address this problem provided the impetus for this study.

Theoretical and Conceptual Framework

Five theoretical threads supported this study: (a) adult learning, (b) transfer of training/learning, (c) career choice models, (d) leadership development, and (e) decision-making style.

Adult Learning

Adult learning, also known as andragogy, was developed by Malcolm Knowles and is the art of helping adults learn, as contrasted with pedagogy, which is the art and science of teaching children (Knowles, 1980, p. 43). According to Knowles (1980), there are five andragogical assumptions, which assert that adults: (1) have an independent self-concept and can direct their own learning, (2) have accumulated a reservoir of life experiences that is a rich resource for learning, (3) have learning needs closely related to changing social roles, (4) are problem-centered and interested in immediate application of knowledge, and (5) are motivated to learn by

internal rather than external factors. Finally, adults have a need to know why they need to learn something before undertaking the learning task (Houle, 1961, as cited by Galbraith, 1990).

A central concept of andragogy is the idea that adults continue their learning throughout their lifetime (Merriam, Caffarella, & Baumgartner, 2007). Consistent with the andragogical principle of life-long learning, police officers participate in continuous training. Law mandates much of the training, but some of it is information deemed interesting or useful by members of the department. Because of the nature of their profession, police officers must learn throughout their professional careers as adult learners. Thus, an adult learning environment provided the context for this study and established adult learning as the theoretical background for the study.

Transfer of Training/Learning

A challenge lies in determining whether or not training transfers from a learning setting to on-the-job application. With CPR or pursuit driving in policing, one can observe the skills demonstrated to sufficient standards in the classroom. The supervisors and training officers can assess the ability of the apprentice officer to demonstrate the behavioral skills through periodic tests and/or observation. However, determining on-the-job application becomes more difficult when measuring or quantifying the soft-skills. "There is strong consensus that acquisition of knowledge, skills, behaviors, and attitudes through training is of little value if the new characteristics are not generalized to the job setting and are not maintained over time (Kozlowski & Salas, 1997, as cited in Yamnill & McLean, 2001, p. 195). This generalization of knowledge and skills to job settings is particularly difficult for soft-skills.

Transfer of training has many definitions. The authors of Intrahealth's web page, Transfer of Training, stated transfer of training is simply effectively and continually applying on

the job what the trainee learned during training ("Transfer of Training," 2009). This dissertation study assumes and acknowledges that transfer of training must occur if training effectiveness is demonstrated in improved post-training performance. This assumption was incorporated into the theoretical framework of the study. However, direct measurement of transfer of training is beyond the scope of this study.

Career Choice Models

According to Hartung and Blustein (2002), Frank Parsonss was the creator of formal career counseling. In an article reviewing the contribution Parsonss made to career counseling, Hartung and Blustein cited Swanson (2002) by stating, "Parsons' (1909) three-part model for the wise choice of a vocation remains an essential vision for contemporary career development and counseling" (p. 41). They asserted that Parsons' theories of career counseling have contributed to modern research, which demonstrates that people choose careers through several factors, including decision-making styles, emotion, and content (p. 41). The emphasis on the influence of decision-making on career choice is of particular relevance to the present study.

Mihal, Sorce, and Comte (1984) designed a process model for career decision-making that also relates this process to decision-making style. They stated, "The choice of a potential solution is influenced by the decision process one uses as well as by one's beliefs, attitudes, and values that affect the choice criteria and expectancies associated with the prospective change" (p. 96). This decision process is described as a decision-making style. One's personal reflection of his or her decision-making style is very important in the Mihal, Sorce, and Comte process model for career decision-making.

Parsons' theory of career choices and Mihal, Sorce, and Comte's career-decision model both relate the career-choice process directly to personal decision-making styles.This relationship between the career-decision model and the process of decision-making within the model supported a working hypothesis for this study that individuals with certain decision-making styles may select certain occupations. Thus, certain decision-making styles may be dominant in the style profile of specific occupations, including policing and law enforcement.

Leadership Development and Training

Ayers and Corderman (2008) asserted that measuring police leadership is possible. They maintained that the key to measuring the effectiveness of law enforcement is the degree of public trust—trust built upon tangible results in improving the quality of life where order is maintained and people feel safe. They also proposed that when citizens have trust in law enforcement, they believe in not only its mission, but also its capacity to achieve that mission in an ethical, character-driven manner. While it may be possible to measure whether a police agency is successful in establishing a degree of public trust through good leadership, the question remains whether it is possible to assess the teaching of leadership to participants in specific leadership development courses such as the Leadership in Police Organizations (LPO) training program which is examined in this study.

The LPO, now called the Leadership in Public Safety Organizations Programs, was originally designed as a leadership development course for cadets at West Point. It was adapted to address leadership training for police officers. The course is sponsored and promoted by the International Association of Chiefs of Police (Porter, 2013).

Assessing whether or not leadership is a teachable concept is an argument of long standing. Ayers and Corderman (2008) asserted that leadership is learned through role modeling. They stated that, "Our subjects provided a broad range of examples of where they learned principles of good leadership, including family, school, church, military, friends and neighbors, historical figures, and law enforcement officers" (p. 28). While many may learn leadership by observing leadership, this does not address the question of whether leadership can be taught in a structured setting. Howard and Scheffler (1995) concluded that it is teachable, but it must be studied correctly.

One way in which leadership training might influence potential leaders and their job performance is by helping them develop an occupationally appropriate decision-making style. In reverse, preferred decision-making styles of individuals may influence reactions and outcomes from leadership training. This possibility provided a working hypothesis for this study and supported the inclusion and analysis of available pre-test and post-test data on decision-making styles of a group of police officers participating in a leadership-development program.

Decision-Making Style

In his original research on decision-making, Harren (1979) tied the concept of decision-making directly to career choices. He studied the process college students use to choose a career. His model became known as the Model of Career Decision-Making Style. Harren identified three styles of decision-making: dependent, rational, and intuitive.

Scott and Bruce (1995) advanced and extended the research on decision-making styles begun by Harren and defined decision-making style as "the learned, habitual response pattern exhibited by an individual when confronted with a decision situation" (p. 819). Based on

extensive research, Scott and Bruce developed an instrument that identifies an individual's preference profile on five decision-making styles: rational, intuitive, dependent, avoidant, and spontaneous. This instrument now has respectable psychometric properties and research history and is known as the General Decision-Making Style survey, or GDMS.

In his dissertation study, Hulderman (2003) brought decision-making research into the policing profession. He examined the decision-making styles and learning styles of police officers in relation to the concept of community policing, which is currently important in law enforcement practice. Community policing is the philosophy of involving the community with the police agency to prevent and solve crime issues. Walker and Katz (2005) related community policing to decision-making skills by officers:

> Community policing holds that the police should work closely with community residents, instead of being an inward-looking bureaucracy; that they should emphasize crime prevention, as opposed to law enforcement; and that they should decentralize the decision-making authority to rank-and-file officers, as opposed to the top-down, military-style organizations. (p. 15)

Hulderman (2003) studied police officers' decision-making styles, personal learning styles, and adult learning in relation to the concept of community policing. He emphasized the point that along with the concept of community policing, officers need to "be creative and innovative decision makers in problem-solving situations" (p. 18).

In his "Final Commentary" Hulderman explained his hope for the outcome of his research. He stated, "An awareness and understanding of decision-making styles and learning strategies is an important step to stimulating the learning processes necessary for police officers to successfully solve community problems in formal and informal training environments" (p. 181). This proposed link between decision-making styles of police officers and their on-job

performance in a community-policing environment provided a major foundation for the present study.

Demographic Characteristics

For this study, demographics included the following variables:

- Full-time, sworn police officer: This was to differentiate full-time law enforcement officers from persons who volunteer on an occasional basis.
- Supervisor: This was to determine if those in supervisory positions possessed different decision-making styles from non-supervisory personnel
- Level of education: This was to determine if education level has any affect on decision-making style.
- Gender: This was to determine if gender has any affect on decision-making style.
- Age: This was to determine if there are any generational differences in decision-making style.

The Framework

This study examined relationships among career choice, decision-making styles, leadership training, and transfer of training in the policing occupation. It also included selected demographic variables in the interacting variables mix. The study situated policing in an environment of adult learning and a job context of community policing. While the study did not actually assess on-job performance of police officers, it did assert that the performance of officers in a community-policing environment could be affected by the variables included in this study. Similarly, the study did not examine the nature or effectiveness of the transfer of training; it did assume that transfer must occur in order for training in leadership and decision-making to

affect job performance. The theoretical/conceptual framework and variable relationships for the study are shown in Figure 1. This study focused on the central portion of the diagram enclosed in the rectangular box. Career choice decisions must occur before police officers can enter the central panel of the framework of this study. However, the decision process for career choice was beyond the scope of this study. Similarly, this study hypothesized that what occurs within the framework of this study affects on-job performance of officers in community policing through transfer of training, but testing this working hypothesis was beyond the scope of this study.

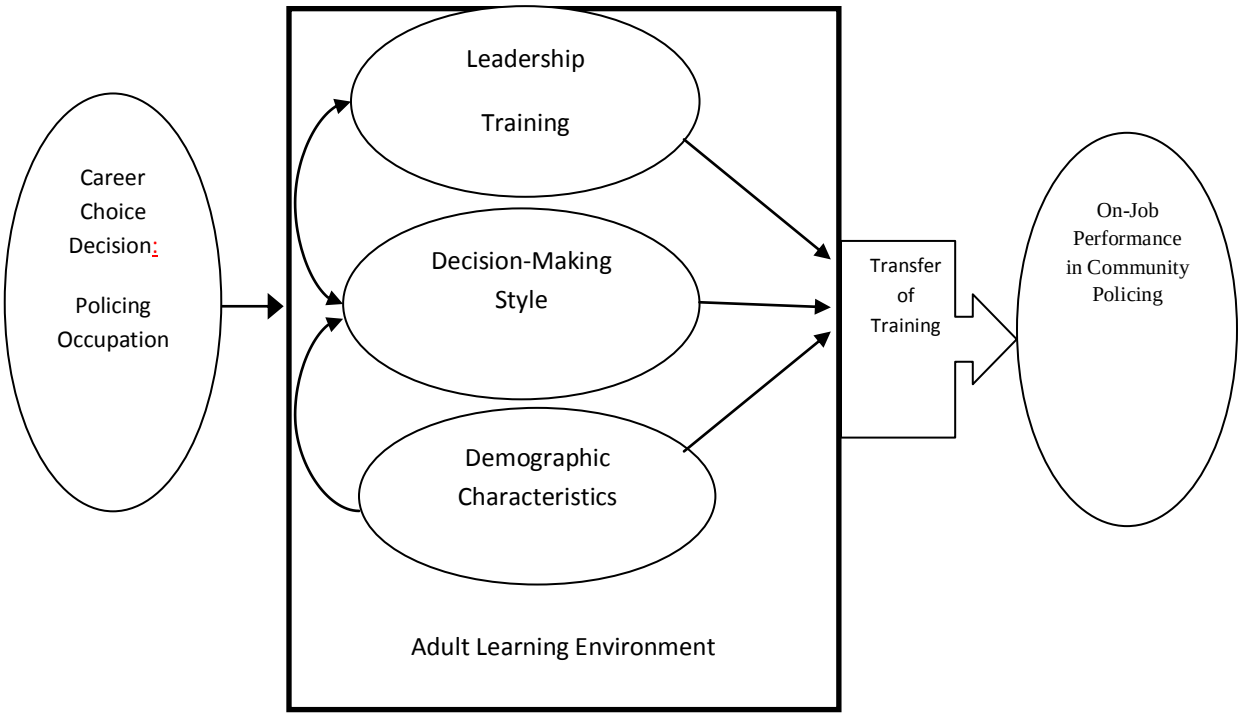

Figure 1. Theoretical/Conceptual Framework for the Study

Statement of the Problem

The concepts of community policing, problem solving, and leadership all imply the ability to make complex decisions. The problem is that there is little information about the decision-making styles of police officers. Little is currently known about the decision-making styles most prevalent among those who have chosen a career of policing, or about the stability of those styles once a training intervention designed to influence decision-making is presented to

the individuals in this occupation. Knowledge of the decision-making styles of active-duty police officers could possibly provide a safer environment for policing and great job satisfaction for police officers.

The lack of information is problematic for the policing occupation because this knowledge could be beneficial to trainers, educators, recruiters, and police leaders as they seek to train, educate, recruit, and lead police officers. The knowledge could possibly provide for better police candidates, safer police officers, and therefore, safer communities.

Purpose of the Study

The purpose of this study is to describe the demographics and decision-making profiles of active-duty police officers, as well as any relationships that may exist among these variables, and the effects of training on decision-making styles. Specifically, the study uses three different data sets to compare and describe the demographics and decision-making characteristics of police officers, general decision-making style patterns in the occupation, and effects of leadership training on decision-making styles. These data sets are described later in the Overview of the Study section.

Research Questions

This study was guided by the following research questions:

1. What is the profile of participating police officers on selected demographics?
2. What is the profile of participating police officers on decision-making styles as measured by GDMS?
3. What relationships exist between selected demographics and decision-making styles among participating police officers?
4. Are there dominant patterns of decision-making styles in the policing occupation?

5. What is the effect of leadership training on decision-making styles of participating officers?

Table 1 shows the data sources and analysis techniques for each research question.

Table 1

Data Source and Analysis for Research Questions

Research Questions	Data Source	Data Analysis
What is the profile of participating police officers on selected demographics?	Demographic questions on the survey	Frequency distribution and descriptive statistics
What is the profile of participating police officers on decision-making styles as measured by GDMS?	GDMS Instrument	Frequency distribution and descriptive statistics
What relationships exist between selected demographics and decision-making styles among participating police officers?	Demographic questions and the GDMS	MANOVA and ANOVA analysis
Are there dominant, decision-making style patterns in the policing occupation?	GDMS data from this study and 2 previous ones.	Frequency distribution and descriptive statistics
What is the effect of leadership training on decision-making styles of participating officers?	Existing institutional pre-test/post-test data	Frequency distributions and *t*-tests

Definitions of Key Terms

Conceptual Definitions

1. *Adult Learning*: Adult learning, also known as andragogy, was developed by Malcolm Knowles and is the art of helping adults learn, as contrasted with pedagogy, which is the art and science of teaching children (Knowles, 1980, p. 43).
2. *Career Decision Model*: Process model designed by Mihal, Sorce, and Comte (1984) to describe career decision-making. They stated, "The choice of a potential solution is influenced by the decision process one uses as well as by one's beliefs, attitudes, and values that affect the choice criteria and expectancies associated with the prospective change" (p. 96).
3. *Community Policing*: "The philosophy of involving the community with the police agency to prevent and solve crimes" (Walker & Katz, 2005, p. 15).
4. *Decision-making Styles*: "The learned, habitual response pattern exhibited by an individual when confronted with a decision situation" (Scott & Bruce, 1995, p. 819). The General Decision-making-Styles survey (GDMS) is an instrument developed to measure an individual's preferred decision-making style as rational, avoidant, intuitive, dependent, or spontaneous (Scott & Bruce, 1995).
5. *Leadership*: "The process of persuasion and example by which an individual (or leadership team) induces a group to take action that is in accord with the leader's purposes or the shared purposes of all" (Gardner, 1986, p. 6).
6. *Transfer of training/learning*: "Effectively and continually applying on the job what the trainee learned during training" ("Transfer of Training," 2009).

Operational Definitions

1. *Decision-making Style*: Police officer's dominant style of making decisions (rational, avoidant, intuitive, dependent, or spontaneous) as measured by the General Decision-Making Styles survey (GDMS) (Scott & Bruce, 1995).
2. Demographics: For this study, demographics included the following variables:
    - Status as a full-time, sworn police officer;
    - Years of full-time law enforcement experience;
    - Status as a supervisor or not;
    - Level of education—high school graduate, some college, bachelor's degree, some post-graduate work, post-graduate degree;
    - Gender; and
    - Age.
3. Leadership Training: A three-week training program called Leadership in Policing Organizations presented in 2008 and 2009 was completed by police supervisors of a medium-size, municipal police department in Oklahoma. This program, originally created as a leadership development program for West Point cadets, was designed to provide a method for police leaders to:
    - Understand and apply modern behavioral science and leadership theories that enhance human motivation, satisfaction, and performance in the achievement of organizational goals;
    - Learn frameworks to organize knowledge and experience into effective leader actions;
    - Integrate course content into daily leadership practices;
    - Develop and achieve personal leadership to the fullest potential; and
    - Inspire lifelong commitment to the study and practice of effective leadership (Prince, Halstead, & Hesser, 2002).

4. Rank Structure: The terms used to describe levels of management. For the Tulsa and Broken Arrow Police Departments, the rank structure begins with officer and progresses to corporal, sergeant, captain, major, deputy chief, and Police Chief.

Overview of the Study

General Approach

This research used a quantitative, comparative, multiple-case, descriptive design comprising three data sources. Data included the following:

1. New data from a medium-size (300 police officers) and large-size (700 police officers) police departments in Oklahoma obtained by this researcher. These data included the GDMS results as well as demographic data gathered by allowing officers an opportunity to participate in an online survey that contained both sets of data. These officers were emailed a link to the survey. After reading, they clicked on the link giving informed consent to be study participants. These two police departments had approximately 1000 officers total. All were afforded an opportunity to respond; 69 officers voluntarily responded.
2. Existing data gathered by Hulderman (2003) for his dissertation study on police professionals in Oklahoma and Missouri. Hulderman collected GDMS results as well as the same demographic data collected in the new research for this study. Hulderman collected data from 150 full-time and reserve officers. These data provided a baseline for extension and comparison with the new data collected for this study.
3. Existing data gathered by a large-size police department in Oklahoma, which offered the GDMS survey before and after police supervisors attended a three-week leadership training course. This study collected GDMS data from 28 subjects as well as the same demographic data collected in

the new research for the present study. These institutional data were used to extend and compare data from the present study and to describe the effect of leadership training on decision-making styles of police officers.

Population and Sample

The population was comprised of active-duty police officers who participated in two previously conducted studies using the GDMS survey plus officers from a medium-size municipal police department and officers from a large-size municipal police department, both located in Oklahoma. Previous study respondents were also active-duty law enforcement officers in Oklahoma and Missouri (Hulderman, 2003). Respondents in the new study volunteered to take the demographic/GDMS survey and responded online. The new study data was comprised of 69 respondents who were compared to, or combined with, the institutional data comprised of 28 respondents, and/or Hulderman's previous research consisting of 150 respondents.

The samples for all three data sets used in this study represented specific segments of their populations. The 28 respondents in data set #3 represented a sample of the participants of the Leadership in Policing Organizations training program within the large municipal police department. In data set #2, the 150 officers who voluntarily participated in a survey study represented the larger population of officers from which they came. The 97 respondents of the online survey represented a self-selected sample of the approximately 1000 officers of the two participating municipal police departments.

Instrumentation

The General Decision-Making Styles (GDMS) has been used frequently in research on decision-making. This instrument is a five-point, Likert-type scale survey instrument that asks

participants to state their level of agreement or disagreement with a set of 25 statements. Scott and Bruce (1995) defined decision-making style as "the amount of information gathered and the number of alternatives considered when making a decision" (p. 819). The GDMS divides decision-making styles into five categories: rational, intuitive, dependent, avoidant, and spontaneous. Participants respond to five questions for each category. The cumulative point total of each section is calculated to describe preferred decision-making style.

The GDMS has a research history and acceptable levels of validity already documented in both general use and specifically with active-duty police officers. The decision-making style validity of GDMS was established through factor analysis (Hulderman, 2003, p. 101, citing Scott & Bruce, 1995). The content validity of GDMS was established by conducting a thorough search of both related theoretical and empirical research literature (Hulderman, 2003, p. 102, as cited by Scott & Bruce, 1995, p. 827).

The demographic survey was attached as a precursor to the GDMS. It asked respondents their age, gender, status as a full-time law enforcement officer, number of years in the policing career, if they are a supervisor, and educational experience.

Procedures

For data set #1 (new data for this study), police officers of the two municipal urban police departments were contacted via internal email and invited to participate. Demographic and GDMS data were collected online via a survey website.

For data set #2 (data from the Hulderman study), the data were obtained directly from Hulderman's 2003 doctoral dissertation. For data set #3 (pre-test/post-test GDMS scores), the institutional data were obtained from the training records of the relevant police department. They

were collected by the department before and after the 2008 and 2009 Leadership in Policing Organizations training course.

Data Analysis

All data were entered into the SPSS statistical computer program for analysis. Data analysis techniques are shown for each research question in Table 1. Descriptive statistics, frequency distribution, *t*-test, MANOVA, and ANOVA were included in the analysis techniques.

Assumptions and Limitations

The following assumptions were accepted for this study:

1. Each participant understood the demographic and GDMS questions and answered them honestly.
2. The data collected in previous research were gathered in a manner that allowed respondents to answer correctly and honestly.
3. The data collected in previous research were gathered in a manner that accurately reflected the general decision-making styles of the respondents.

The following limitations were operational for this study:

1. Some respondents may have had inadequate Internet expertise to successfully respond to the online instruments. This could have affected participation or accuracy of responses.
2. Organizational culture issues could have influenced responses of some participants in ways unknown to the researcher.
3. Participants in both the previous studies and the present study represent specific Midwest urban populations of police officers. Only to the extent that these populations accurately represent the larger population of officers in other geographic areas are the results of this study generalizable.

Significance of the Study

This study added to the body of knowledge by providing a better understanding of the general decision-making styles of active-duty police officers and describes the predominant decision-making styles of the people choosing a policing career. This knowledge may provide further insight into the type of person who chooses to become a police officer. It could also assist trainers, instructors, background investigators, and those involved in the selection process in their awareness of the preferred general decision-making styles of a sizeable sample of active-duty police officers. Knowing the manner in which police officers prefer to process decisions will help in the development of future training and instructional material as well as promote understanding of how to encourage more effective problem-solving techniques in the community-policing environment.

The study also examined possible effects of leadership training for police officers on their measured decision-making styles. Occupationally appropriate decision-making is important in a community-policing policy environment. Thus, this study may enhance effective leadership development programs for law enforcement agencies.

CHAPTER II

LITERATURE REVIEW

In this chapter, relevant literature is reviewed and contextualized into the present research under the following headings:

1. Adult Learning,
2. Transfer of Training/Learning,
3. Career Choice Models,
4. Leadership Development,
5. General Decision-Making Style, and
6. Decision-Making in the Community Policing Context

Adult Learning

Adult learning, also known as *andragogy*, was developed by Malcolm Knowles and is the art of helping adults learn, as contrasted with pedagogy, which is the art and science of teaching children (Knowles, 1980, p. 43). According to Knowles (1980), five andragogical assumptions underlie and guide adult learners. Knowles asserted that adults:

1. Have an independent self-concept and can direct their own learning,
2. Have accumulated a reservoir of life experiences that is a rich resource for learning,
3. Have learning needs closely related to changing social roles,
4. Are problem-centered and interested in immediate application of knowledge, and
5. Are motivated to learn by internal rather than external factors.

A central concept of andragogy is the idea that adults continue learning throughout their lifetime (Merriam, Caffarella, & Baumgartner, 2007). Consistent with the andragogical principle of lifelong learning, police officers participate in continuous training throughout their career. Law mandates much of the training, but some of it is information deemed interesting or useful by the officers. This suggests that andragogy and its emphasis on lifelong learning are relevant to the development and career improvement of police officers and, therefore, to the present study.

Malcolm Knowles coined the term *andragogy*, and determined that it is education beyond the formal college education. Central to the idea of andragogy is the focus on the learner. Knowles (1970) stated, "The behavior of the teacher probably influences the character of the learning climate more than any other single factor" (p.42). Conti and Kolody (1999) pointed out the important roles of both the teacher and the learner in adult education:

> Contributing factors that govern this learning may be the student's experiences, content meaningful to the individual learner, willingness to become involved with the subject matter, and the set of "tools" that the student possesses to enhance learning. Therefore, to facilitate a truly successful adult learning experience, a teacher must skillfully direct the focus away from the role of instructor and toward that of the learner. (p. 5)

Knowles (1975) also contributed to the development of the concept of *self-directed learning*. He asserted that, "In its broadest meaning, 'self-directed learning' describes a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (p. 18).

Professional education for police officers sometimes seems contrary to the assumptions and characteristics of adult education. As one might expect, education for police officers often focuses more upon predetermined learning outcomes than is typical of much of adult learning.

Frequently in police education, a specific behavior is desired and required for the safety of both the officer and the public, the student is taught to achieve that behavior, and the outcome is measured to determine the success of the education.

This style of education does not fit within Knowles' parameters of self-directed learning. However, it is necessary for officers to receive training in critical, pre-determined situations, even if individual officers may not have an interest in that subject. This leads to a problem of the learner's perceived value in the subject. Darkenwald and Merriam (1982) pointed out the importance of the learner's value perceptions by asserting that "An individual's perception of the value of adult education quite obviously will affect the individual's disposition or readiness to participate" (p. 144).

In the context of training police officers in a variety of soft-skills, adult education falls under the scope of social context. Darkenwald and Merriam (1982) claimed that, "Rapid technological and social change has direct consequences for the future of adult education" (p. 4). The fact that police officers are instructed in soft-skills demonstrates a social change. Officers were once taught only the behavioral skills necessary to shoot accurately or drive skillfully; now those same officers are learning to deal with subjects suffering mental disorders and relationship issues, as well as other interpersonal skills. This fact highlights the importance of soft-skills such as *leadership* and *decision-making* which are central to the present study.

Soft-skills are considered interpersonal or relational skills. This can include such skills as listening, interviewing, negotiation, and leadership (Foxon, 1993; Georgenson, 1982; Kupritz, 2002; Laker & Powell, 2010). In discussing or researching training effectiveness for soft-skills, it is necessary to distinguish training differences between hard and soft-skills. One important difference is the ease and type of *measurement* required to verify acquisition of the two types of

skills. For example, measuring the acquisition of a skill such as shooting is quite observable. Measuring the acquisition of listening skills is more difficult to define and implement.

Darkenwald and Merriam (1982) asserted that the effectiveness of professional education is based upon the knowledge base of other areas of study. For example, they suggested the effectiveness of teaching soft-skills is directly related to the understanding and knowledge of others in the study of soft-skills. It was the contention of Darkenwald and Merriam that "The effectiveness and nature of any applied professional field is directly related to its knowledge base" (p. 231).

Transfer of Training/Learning

A challenge lies in determining whether or not training in a learning environment transfers to on-the-job application. With CPR or pursuit driving, one can observe the skills demonstrated to sufficient standards in the classroom. The supervisors and training officers can assess the ability of the apprentice officer to demonstrate the behavioral skills through periodic tests and/or observation. However, determining on-the-job application becomes more difficult when measuring/quantifying the soft-skills. Despite the difficulty of measurement, transfer of training is an important issue in professional training. "There is strong consensus that acquisition of knowledge, skills, behaviors, and attitudes through training is of little value if the new characteristics are not generalized to the job setting and are not maintained over time" (Yamnill & McLean, 2001, p. 195).

Transfer of training has many definitions. The simplest definition this researcher found came from Intrahealth's web page titled, Transfer of Training. The authors stated that transfer of training is "Effectively and continually applying on the job what the trainee learned during training" (Transfer of Training, 2009). The present study assumes and acknowledges that transfer

of training must occur if training effectiveness is demonstrated in improved post-training performance. This assumption is incorporated into the study's theoretical framework. However, direct measurement of transfer of training is beyond the scope of this study.

Baldwin and Ford (1988) ascribed personal attributes to the definition by stating that transfer of training is the level at which trainees apply the knowledge, skills, and attitudes learned to their job. Gilpin-Jackson and Bushe (2006), quoting Noe (2002) stated, "The definition for training transfer is a broad one that includes effective and continual application of the learning acquired from formal training back to the workplace" (p. 63). The common elements found in each of these definitions are that the education is formal and related to the profession, and the learning is applied on the job over a period of time. Transfer of training implies that the training is useable but that the training is also *used on the job*. Yamnill and McLean (2001) stated, "In other words, training is useless if it cannot be translated into performance" (p. 195).

To gain a better understanding of transfer of training, it is necessary to examine how this transfer occurs. Donald Kirkpatrick assigned four levels to assess or evaluate training. These levels of training are reaction, learning, behavior, and results (Kirkpatrick, 1994). Level three (behavior) and level four (results) deal specifically with transfer of training and its effect on an organization. Kirkpatrick went on to categorize reaction and learning as internal drivers whereas behavior and results are external drivers. Basarab and Root (1992) added that accountability is the result of combining the internal and external drivers.

Evaluating the effectiveness of training must occur at each of Kirkpatrick's levels sequentially. Level one training evaluation is the *reaction* evaluation and occurs at the end of training. This normally takes the form of a satisfaction survey. The evaluation indicates a positive or negative reaction of learners to training received. Because an individual's motivation

is linked to the transfer, a positive reaction indicates a higher likelihood of transfer (Kirkpatrick, 1994; Marth, Hancock, & Cirignano, 1994). This fact links a learner's affective response to training directly to the transfer of training.

Level two evaluation assesses *learning*. Learning can be assessed at Kirkpatrick's level two using a variety of methods. This level seeks to determine if the participant's knowledge improved, attitude changed, or skills were enhanced by training. Knowledge assessment can take the form of an exam or pre-test/post-test questions. Skill levels are usually observed by an expert, while attitude can be evaluated with tools similar to performance evaluation forms or pre-test/post-test surveys (Kirkpatrick, 1994). Level two assesses whether trainees have gained new knowledge, skills, and attitudes that are now available for transfer to their working environment.

Behavior is evaluated at level three in Kirkpatrick's model. Evaluating behavior changes is more difficult and requires the element of time. This can take the form of observation, focus group interviews, personal interviews, or surveys (Kirkpatrick, 1994). At this level, transfer of training from learning environment to working environment is directly targeted and assessed.

Level four evaluation occurs when *results* of training transfer are evaluated. This evaluation level is considered very difficult and takes into account the previous three levels in the design of an assessment. This level determines if the training transferred to the job performance is to translate into organizational change (Kirpatrick, 1994; Shelton & Alliger, 1993). While difficult to accomplish, Kirkpatrick's level four evaluation is critical to an organization's determination of the value of training and its transfer.

Further review of the literature revealed that Baldwin and Ford (1988), as cited by Yamnill and McLean (2001), addressed transfer of training by examining factors that facilitate its occurrence. They "classified the factors affecting transfer of training into three categories: (1)

training inputs, including trainee characteristics, training design, and work environment; (2) training outputs, consisting of learning and retention; and (3) conditions of transfer, which focus on the generalization and maintenance of training" (p. 196).

Some researchers have theorized relationships among learning, transfer, performance, and results. Holton (1996) developed the conceptual model shown in Figure 2. Holton ascribed three outcomes to learning: learning, individual performance, and organizational results. Holton's model shows that affecting the outcomes are three factors: motivation to transfer, transfer climate, and transfer design (Yamnill & McLean, 2001).

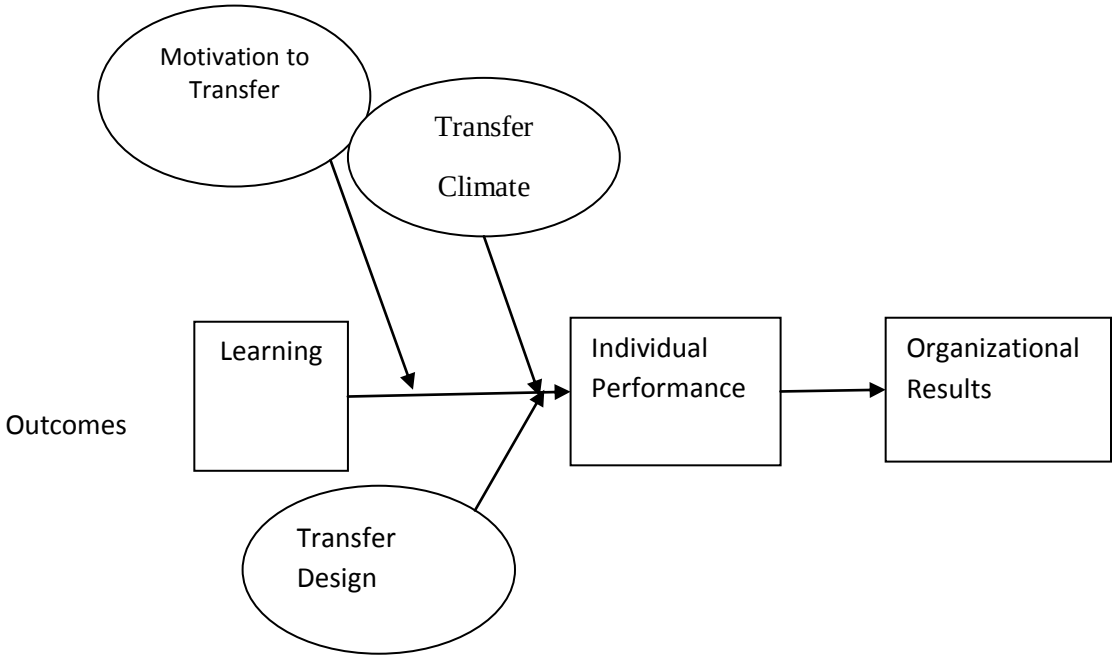

Figure 2. Holton's Factors Affecting Transfer of Training (Yamnill & MacLean, 2001)

Burke and Hutchins (2009) expanded Holton's model. In their Transfer of Training model, shown in Figure 3, the authors clarified learner characteristics, intervention design, and work environment affecting learning and transfer. Should each of the elements be conducive to learning and transfer, then transfer leads to performance change for the individual and the organization. This change reflects the desired training outcomes.

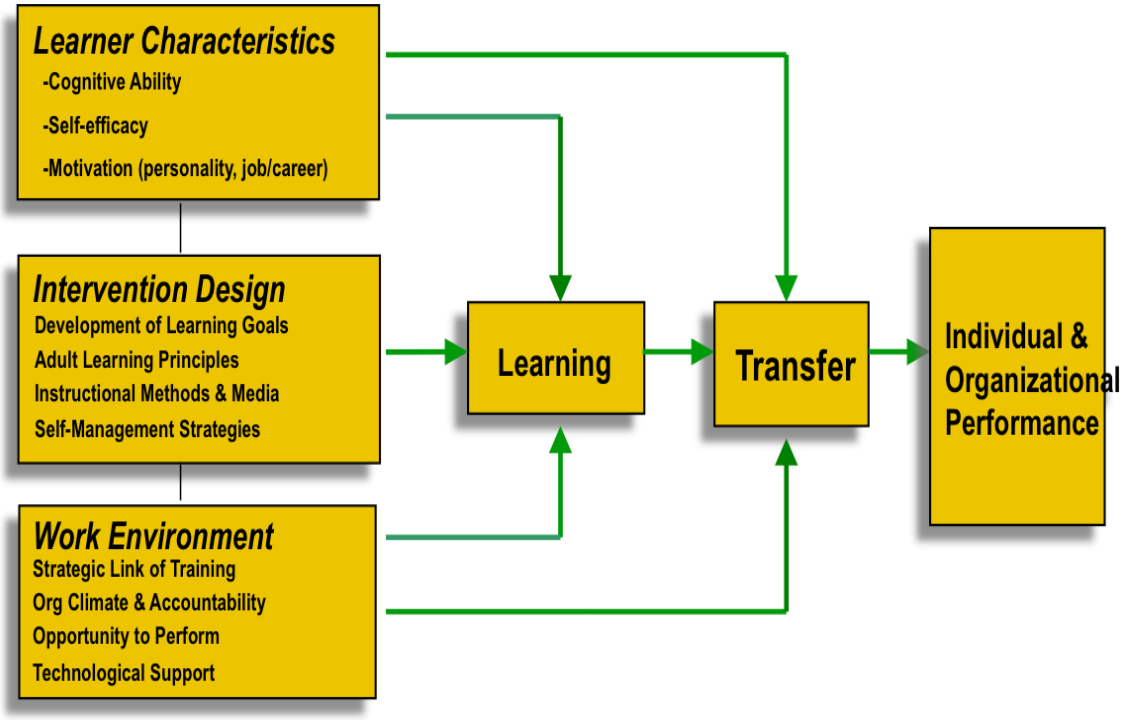

Figure 3. Burke and Hutchins Transfer of Training Model (Burke & Hutchins, 2009)

Career Choice Models

According to Hartung and Blustein (2002), Frank Parsons was the creator of formal career counseling. In an article reviewing the contribution Parsonss made to career counseling, Hartung and Blustein cited Swanson (2002) by stating, "Parsons' (1909) three-part model for the wise choice of a vocation remains an essential vision for contemporary career development and counseling" (p. 41). Parsons' model is shown in figure 4.

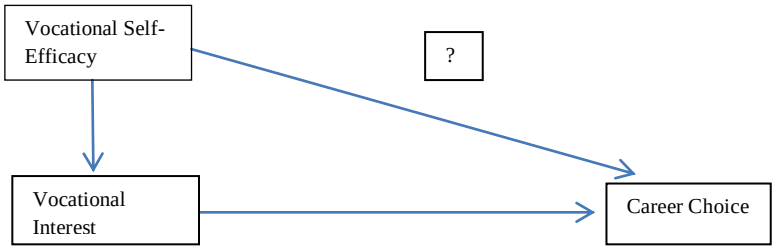

Figure 4. Frank Parsons' Model of Trait and Factor Theory of Occupational Choice (Donnay & Borgen, 1999)

Donnay and Borgen (1999) asserted that Parsons' theories of career counseling have contributed to modern research, which demonstrates that people choose careers through several factors, including decision-making styles, emotion, and content (p. 41). This inclusion of decision-making styles as a factor in career decisions is particularly relevant to the present study which focused specifically on decision-making in a designated career.

Mihal, Sorce, and Comte (1984) designed a process model for career decision-making that also relates this process to decision-making style. They stated, "The choice of a potential solution is influenced by the decision process one uses as well as by one's beliefs, attitudes, and values that affect the choice criteria and expectancies associated with the prospective change" (p. 96). This decision process is described as a decision-making style. One's personal reflection of

his or her decision-making style is very important in the Mihal, Sorce, and Comte process model for career decision-making.

Parsons' theory of career choices and Mihal, Sorce, and Comte's career-decision model both relate the career choice process directly to personal decision-making styles. The assertion that individual decision-making is involved in the career-decision model, supported a working hypothesis for this study that individuals with certain decision-making styles may select certain occupations. Thus, certain decision-making styles may be dominant in the style profile of specific occupations, including policing and law enforcement.

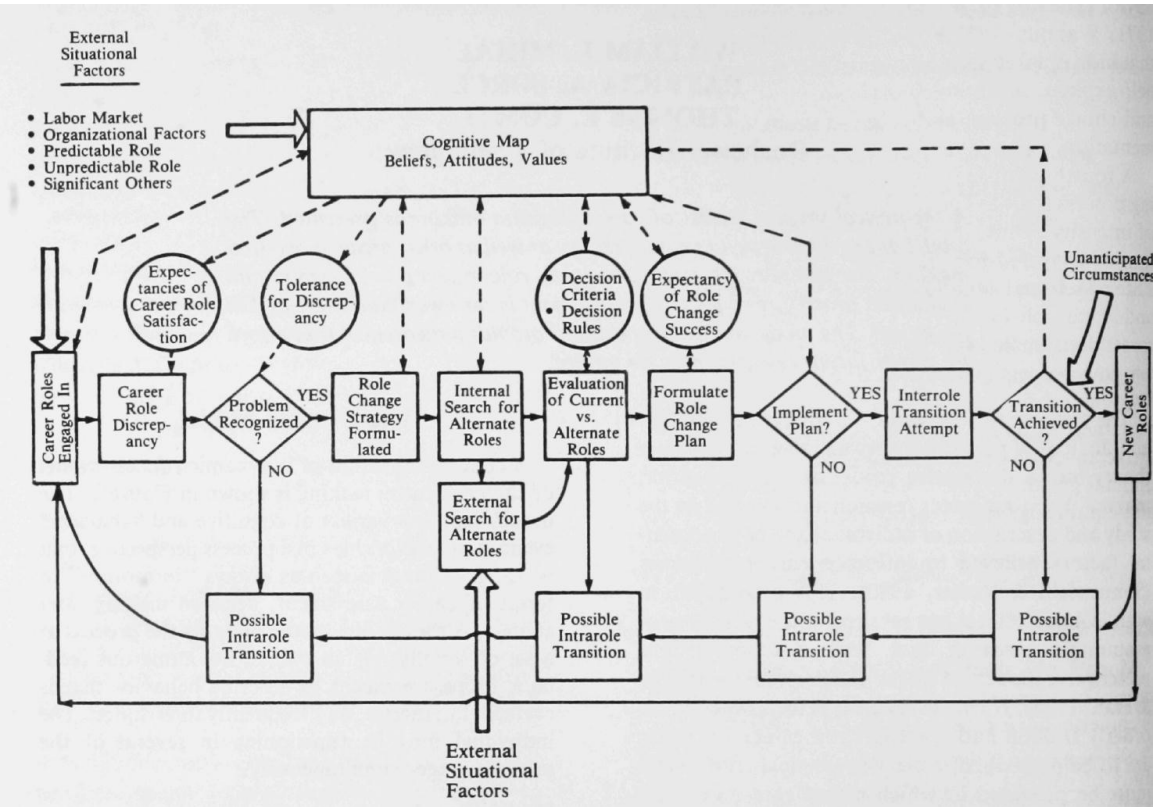

Figure 5. Process Model of Individual Career Decision-making (Mihal, Sorce, & Comte, 1984)

Leadership Development and Training

Ayers and Corderman (2008) asserted that measuring police leadership is possible. They maintained that the key to measuring law enforcement's effectiveness is the degree of public

trust—trust built upon tangible results in improving the quality of life where order is maintained and people feel safe. They also proposed that when citizens have trust in law enforcement, they believe not only in its mission, but also in its capacity to achieve that mission in an ethical, character-driven manner. While it may be possible to measure whether a police agency is successful in establishing a degree of public trust through good leadership, the question remains whether it is possible to assess the *teaching of leadership* in the policing occupation and specifically to participants in the Leadership in Police Organizations (LPO) training program, which was a contextual focus of the present study.

Assessing whether or not leadership is a teachable concept is an argument of long standing. Ayers and Corderman (2008) asserted that leadership is learned through role modeling. They stated that, "Our subjects provided a broad range of examples of where they learned principles of good leadership, including family, school, church, military, friends and neighbors, historical figures, and law enforcement officers" (p. 28). While many may learn leadership by observing leadership, this does not address the question of whether leadership can be taught in a structured setting. Howard and Scheffler (1995) concluded that it is teachable but it must be studied correctly.

Hurt and Homan (2005) described seven areas of leadership development that should be considered when creating a leadership-training program within an organization. The first was the *teaching of the organization's goals*. Citing Zenger *et al.* (2000), Hurt and Homan stated, "Leadership development needs to be connected to the goals and strategies of the organization" (p. 120). The process of teaching the mission and values of the organization must start, "at the beginning and continue throughout the employee's tenure" (p. 121). Zenger (2000) added, "We don't think it possible to separate effective leadership from an organization including its norms,

culture, values, history, work processes, and systems. They make up the stage on which the leadership drama is played, and the stage has a large bearing on the success of the leader" (p. 24).

The second area of leadership development was the *organizational culture*. "If a leader is to be successful within a particular organization they must learn the organization's culture" (Hurt & Homan, 2005, p. 121). Within law enforcement, that means the chief executive must understand the existing hierarchical structure, organizational decision-making, and power relationships (Steinheider & Wuestewald, 2008). Most law enforcement organizations are hierarchical, possess a top-down management style, and are centrally organized. "These limitations are seen as impediments to the development of adaptive, learning organizations capable of leveraging their human assets and appropriately responding to the dynamics of modern social expectations" (Steinheider & Wuestewald, 2008, p. 146).

The third area Hurt and Homan (2005) discussed was the *leadership training style*. "The general sentiment held by many leadership experts is that individuals need to know how to deal with situations in the workplace and that they cannot learn these skills in lecture-based academic settings" (p. 121). This provides support for scenario-based learning.

The fourth area necessary for leadership development within an organization is that *leadership must come from the top down*. "If an organization is going to implement a leadership development program then upper management needs to be heavily involved with the creation and instruction of that program" (Hurt & Homan, 2005, p. 121). According to Zenger et al. (2000), "Every effective leadership development program must have the full endorsement of senior management" (p. 24).

Fifth, *accountability* is essential for successful leadership training. However, assessing the effectiveness of leadership training has been challenging and the literature indicates, not always successful. According to Santos and Stuart (2003), as reported by Gilpin-Jackson and Bushe (2006), "64% of managers returned to their previous work styles after training and … managers are even less likely than other staff to immediately apply training at work especially for developmental or soft-skills training" (p. 980). Unlike the quantifiable skills of range shooting, CPR, and pursuit driving, motivational and leadership skills of police officers are not measured so easily. This researcher's professional experience has supported this literature through the observation that police agencies now seek methods of imparting leadership skills, but there is debate about whether or not leadership training for officers is effective. Zenger et al. (2000) stated, "If participants in a leadership development activity believe that after the final day there will be no measurement of what was covered and that no one will ever ask what they've done about it, it's highly likely that nothing will change" (p. 26, as cited in Hurt & Homan, 2005).

The sixth area encompasses the *organization's goals and the individual's abilities to achieve those goals*. "Organizations should start by identifying what they need to accomplish, then work backwards and figure out what attributes of effective leadership an individual needs to accomplish those goals" (Hurt & Homan, 2005, p. 122). Steinheider and Wuestewald (2008) wrote, "Research suggests that inclusive decision-making practices can foster greater rank-and-file commitment to the organizational initiatives, particularly with regard to community-oriented policing" (p. 145). The challenge within the police community is that most agencies still possess a hierarchical structure and "police administrations are still reluctant to grant line officer autonomy" (Vito, Walsh, & Kunsleman, 2005, as cited in Steinheider & Wuestwald, 2008,

p.145). The top-down leadership should become open to a participative style of management (Steinheider & Wuestwald, 2008).

The seventh and final area simply states, *"Everyone needs to be trained as a leader"* (Hurt & Homan, 2005, p. 122). This premise is based upon the fact that *leadership development requires time*. The moment a person enters an organization, that person should be trained to become a leader within the organization. In law enforcement, it is assumed that the training is tailored to develop leaders since the community expects police officers to be leaders. From the first day of the academy, the cadets are taught that they are leaders within the community and the department expects them to conduct themselves as role models.

This researcher's professional experience has supported this literature through the observation that police agencies now seek methods of imparting leadership skills, but there is still debate about whether or not leadership training for officers is effective.

One additional way in which leadership training might influence potential leaders and their job performance is by helping them develop an occupationally appropriate decision-making style. In reverse, preferred decision-making styles of individuals may influence their reactions to and outcomes from leadership training. This possibility provided a working hypothesis for this study and supported the inclusion and analysis of available pre-test and post-test data on decision-making styles of a group of police officers participating in a leadership development program.

Decision-Making Style

The systematic study of individual differences in styles of decision-making originated with Harren's (1979) work that tied the concept of decision-making directly to career choices. He studied the process college students use to decide which career to choose. His model became

known as the Model of Career Decision-Making Style. In his model, Harren identified three styles of decision-making: dependent, rational, and intuitive.

Harren (1979) reported that people with the *dependent style* seemed to prefer to make their decisions based on information from another source. In other words, their decisions were "dependent" upon additional information, other people, etc.

The *rational style* indicated that the decision makers tended to take a logical approach. These people used tools frequently such as a T-chart or some other method of logically determining an appropriate decision.

The *intuitive style* indicated that these decision makers relied upon feelings or intuition. They believed that making a decision based on a "gut" feeling was appropriate (Harren, 1979).

Scott and Bruce (1995) advanced and extended Harren's work on decision-making. They defined decision-making style as "the learned, habitual response pattern exhibited by an individual when confronted with a decision situation" (p. 819). They pointed out that "Driver, Brousseau, and Hunsaker (1990) posited that decision-making style is defined by the amount of information gathered and the number of alternatives considered when making a decision, although others suggest that it refers to differences in the way individuals make sense of the data they gather" (Scott & Bruce, 1995, p. 819). Hunt, Krzytofiak, Meindl, and Yousry (1989), McKenney and Keen (1974), and Mitroff (1983) agreed that decision-making styles were related to differences in the ways one makes sense of gathered information. Scott and Bruce (1995) concluded their definition by stating:

> Decision-making style is defined here as the learned, habitual response pattern exhibited by an individual when confronted with a situation. It is not a personality trait, but a habit-based propensity to react in a certain way in a specific decision context. (p. 820)

Scott and Bruce further asserted that the research literature suggested decision-making styles can be affected by the situation (1995).

To facilitate and encourage further research on decision-making styes, Scott and Bruce (1995) sought to create a measurement tool to assess decision-making styles, claiming that "Researchers interested in decision-making style research have been hindered by the lack of a generally available, psychometrically sound instrument for measuring decision style" (p. 819). They further maintained that the first step was to create "consistent theoretical definitions of the various decision styles ..." (p. 819).

Initially, Scott and Bruce (1995) identified four decision-making styles through their research. Those styles were: (a) rational decision-making style, which is characterized by a logical evaluation of the alternatives, (b) intuitive decision-making style indicated by a reliance on feelings and intuition, (c) dependent decision-making style characterized by seeking the influence of others through advice, and (d) avoidant decision-making style which is indicated by the person's attempt to avoid making a decision (p. 820). Within their study, Scott and Bruce (1994) discovered a fifth factor related to spontaneity and identified a fifth decision-making style. According to Scott and Bruce,"A spontaneous decision maker has a sense of immediacy and a desire to get through the decision-making process as soon as possible" (Scott & Bruce, 1995, p. 823). Thus, Scott and Bruce ended up with an instrument that identified five styles of making decisions.

Scott and Bruce (1995) also addressed relationships between decision-making styles and dealing with innovations. When discussing how their proposed five groups of decision makers fall into innovative behavior, Scott and Bruce reported that they used innovative behavior and innovativeness to investigate the external validity of the decision-making style construct. They

maintained that these particular variables were selected because decision-making style had been linked to innovativeness in the literature (e.g., Woodman, Sawyer, & Griffin, 1993). Scott and Bruce proposed:

> Thus it is suggested that the rational decision maker's focus on logic, order, and systematic analysis limits the boundaries on problem formation. In contrast, the intuitive decision maker, being data sensitive and focusing on an intuitive sense of "rightness" about decision, is likely to be more open to alternatives in the problem formation. The dependent decision maker is likely to lack confidence in developing alternative problem formulations. Thus dependent decision-making style is hypothesized to be negatively related to innovative behavior. (1995, p. 823)

After testing four sample groups consisting of 1,441 military officers, 84 MBA students, 229 upper-level undergraduate business students, and 189 engineers and technicians, Scott and Bruce (1995) arrived definitively at the five factors comprising their decision-making survey instrument. The "five scales of the final 25-item version of the General Decision-Making Style (GDMS) instrument labeled Rational, Intuitive, Dependent, Spontaneous, and Avoidant contained five items" (p. 826). Thus, the 25-item instrument that has become known as the General Decision-Making Style Survey, or GDMS, contains five items for each of the five decision-making styles. A high score on any set of five items represents a preference for that decision-making style. Data from the GDMS can include categorical classifications, continuous data on the five scales, or both in developing a style profile for individuals or groups.

Scott and Bruce (1995) did not view their five decision-making styles as either independent or as a monolithic individual difference dimension. They maintained, "Although the five decision-making styles are conceptualized as independent, Driver et. al (1990) noted that individuals actually use primary styles as well as backup styles" (p. 827). Analyzing the data gathered from their studies Scott and Bruce (1995) stated, "the correlations found among the subscales of the GDMS support the notion that the decision-making styles are not mutually

exclusive, and that individuals do not rely on a single decision-making style" (p. 829). They further asserted:

> The negative correlation between the rational and avoidant decision-making styles (in both military officer and undergraduate student samples) supports the conclusion of Phillips et al. (1984) that rational decision makers tend to approach, rather than avoid problems. However, in contrast to Phillips' et al. (1984) conclusion that dependent decision makers were no less likely to avoid problems than were rational or intuitive decision makers, the present study found that dependent decision makers were more likely to avoid decision-making. This supports Harren's (1979) notion that dependent decision makers are relatively passive and seek to avoid decision-making. (Scott & Bruce, 1995, p. 829)

Decision-making in the Community Policing Context

In his dissertation study, Hulderman (2003) brought decision-making research directly into the policing profession. He examined the decision-making styles and learning styles of police officers in relation to the concept of community policing, which is currently important in law enforcement practice. *Community policing* is the philosophy of involving the community with the police agency to prevent and solve crime issues. Walker and Katz (2005) related community policing to decision-making skills by officers:

> Community policing holds that the police should work closely with community residents, instead of being an inward-looking bureaucracy; that they should emphasize crime prevention, as opposed to law enforcement; and that they should decentralize the decision-making authority to rank-and-file officers, as opposed to the top-down, military-style organizations. (p. 15)

According to Walker and Katz (2005), community policing is an old philosophy adopted in England in the mid 1800s. They asserted the thought that community policing as recent concept is inaccurate and the man considered the founder of modern policing, Robert Peele, actually set the guidelines for community policing in 18th century London (2005).

The concept was generally accepted in the more compact cities such as New York, Chicago, and Washington, D.C. when communities began to expand in the Midwest; however,

the philosophy subsequently started to diminish. Police found themselves responsible for large land areas, so as cars became available, fewer officers walked beats. This allowed officers to respond to other areas more quickly. It also resulted in officers losing contact with community leaders. This situation gave rise to a resurgence of the community policing concepts and philosophy in the 1980's (Walker & Katz, 2005).

Hulderman (2003) studied police officers' decision-making styles, personal learning styles, and adult learning in relation to the concept of community policing. He illustrated the point that along with the concept of community policing, officers need to "be creative and innovative decision makers in problem-solving situations" (p. 18).

Hulderman (2003) argued that modern day police training does not prepare officers to develop their critical thinking skills. He tied the concept of community policing to the ability of officers to creatively solve problems and posited the inability of the police education system to train police officers effectively in problem-solving skills. Linking these two ideas to decision-making, Hulderman stated that the purpose of his study was "to describe the decision-making styles and learning strategies of full-time police officers in the context of the current era of community policing" (p. 20).

In his "Final Commentary" Hulderman explained his hope for the outcome of his research. He stated, "An awareness and understanding of decision-making styles and learning strategies is an important step to stimulating the learning processes necessary for police officers to successfully solve community problems in formal and informal training environments" (p. 181). This proposed link between police officers' decision-making styles and their on-job performance in a community-policing environment provided a major foundation for the present study.

Community policing requires an ability of the officers to communicate with, learn about, and lead members of a community into strategies to address their needs. According to Walker and Katz:

> A distinctive characteristic of the police under community policing is that the police seek to reposition themselves so that they become an integral part of community life rather than remain distant and alienated from the community as in years past. By embedding themselves within the community, it is asserted that the police and public actually co-produce public safety. (2005, p. 316)

The success of community policing is measured by the success or failure of the decisions made to address the community's need. This supports the need for police agencies to understand the decision-making of their officers.

Chapter Summary

Organizational change is inherent within any agency. Politics, demographics, new laws, court rulings, and budgets are just a few of the sources of external changes that affect police organizations. Police agencies adapt to those changes thrust upon them externally with internal organizational changes. "If the organization cannot or will not respond to change, the process of ossification develops and the stage can be set for a rupturing change" (Hoover, 1992, p. 160).

Police agencies change and adapt as a regular part of serving a community through community policing implementation. However, cultural change within an organization is very slow. This change must have leaders to initiate and maintain the process or it will fail. This failure is not uncommon in police agencies. "The average police officer takes the position that the police department fails to provide an environment that satisfies important personnel needs" (Moore & Miller, 2007, p. 201). This perception requires the leaders of the police organization to make decisions that influence not only behavior but also the perceptions of the personnel.

Problem solving is part of an officer's daily job. Trying to calm a couple arguing over custody of a child, persuading a suicidal subject to drop a gun and consider the long-term implications of his/her actions, or dealing with a problem employee who suffers from occupational burnout are just a few of the occurrences common for police officers. A recent study indicated that 58% of the police agencies contacted "actively encouraged police officers to engage in problem solving" and several others had the category of "problem solving" in their performance evaluations (More & Miller, 2007, p. 51). In order to be effective on the job, an officer must be able to assess situations and derive solutions—in other words, make decisions.

CHAPTER III

METHODOLOGY

The purpose of this study was to describe the demographics and decision-making profiles of active-duty police officers, as well as any relationships that may exist among these variables, and the effects of leadership training on decision-making styles. Specifically, the study used three different data sets to compare and describe the demographics and decision-making characteristics of police officers, general decision-making style patterns in the occupation, and effects of leadership training on decision-making styles.

General Approach and Research Design

This research used a quantitative, multiple-case, descriptive design comprising three data sources. Salkind (2004) stated, "Descriptive statistics are used to organize and describe the characteristics of a collection of data" (p. 8). The general methodology was online survey.

The data for this study included the following three data sets:

1. New data from medium- and large-size police departments in Oklahoma collected by this researcher: The data was collected simultaneously via a web-based survey mounted by the instructional support specialist from the College of Education at Oklahoma State University. These data included the GDMS results as well as demographic data gathered by allowing officers an opportunity to participate in an online survey that contained both sets of data. These officers were emailed a link to the survey which they clicked after

reading and giving informed consent to be study participants. The medium-size police department had approximately 300 officers; the large-size department had approximately 700 officers. All were afforded an opportunity to respond, 69 participated. The researched, through the two police departments' email system, sent three follow-up requests for participation but internal issues within both departments mitigated against participation.

2. Existing data gathered by Hulderman (2003) for his dissertation study on police professionals in Oklahoma and Missouri; Hulderman collected GDMS results as well as the same demographic data collected in the new research for this study. Hulderman collected data from 150 full-time and reserve officers. These data provided a baseline for extension and comparison with the new data collected for this study.
3. Existing data gathered by a large-size police department in Oklahoma, which offered the GDMS survey before and after police supervisors attended a three-week leadership training course; that study collected GDMS data from 38 subjects as well as the same demographic data collected in the new research for the present study. Ten of the respondents did not complete all of the answers on either the demographic portion or the GDMS portion of the survey. The answers of those 10 respondents were not included in the data set that was analyzed. These institutional data were used to extend and compare data from the present study and to describe the effect of leadership training on decision-making styles of police officers.

Research Questions

This study was guided by the following research questions:

1. What was the profile of participating police officers on selected demographics?

2. What was the profile of participating police officers on decision-making styles as measured by GDMS?
3. What relationships existed between selected demographics and decision-making styles among participating police officers?
4. What dominant decision-making style patterns existed in the policing occupation?
5. What effect did leadership training have on decision-making styles of participating officers?

Variables

The *dependent variables* for this research were the GDMS components identifying the general decision-making styles of the respondents. The *independent variables* included demographic information.

Demographic variables included:

- Age,
- Education level,
- Experience (number of years as a full-time officer),
- Gender, and
- Rank (status in the department).

Population and Sample

Frank and Wallen (2003) stated, "A sample in a research study refers to any group from which information is obtained. The larger group to which one hopes to apply the results is the population" (p. 97).

The population for this study was comprised of active-duty police officers who participated in two previously conducted studies using the GDMS survey. Officers belonging to

a medium-size municipal police department located in Oklahoma, as well as officers from a large-size municipal police department also located in Oklahoma, participated in the new data collected specifically for this study. Previous study respondents were active-duty law enforcement officers (n = 150) in Oklahoma and Missouri (data set #2) and police supervisors (n=28) in a large Oklahoma urban police department (data set #3). Respondents in the new study (data set #1) were police officers (n=69) in a medium-size police department and officers from a separate large-size police department in Oklahoma. The new study data in set #1 were combined and/or compared to the existing data in sets #2 and #3 to address the research questions for the present study.

The samples for all three data sets used in this study represented specific segments of their populations. The 28 respondents in data set #3 represented a sample of participants of the Leadership in Policing Organizations training program within the large municipal police department. This sample was selected based upon officers attending that training program. Officers attended the three-week class at the academy for the large police department. Participants were afforded opportunities to complete the GDMS at the beginning and again at the end of the class. The 28 responses used in this data were the only tests that provided answers to all of the questions on both the demographic survey and the GDMS instrument. Any survey that did not have all demographic questions or all 25 GDMS questions answered was eliminated from this data set.

All officers from this sample were supervisors from the rank of corporal to deputy chief of police. Although the majority of respondents were corporals and sergeants, due to rank structure captains, majors, and deputy chiefs responded as well.

The 150 officers in data set #2 who participated in the Hulderman (2003) survey study were volunteers representing the larger population of officers from which they came, according to dissertation reporting. The 69 respondents of the online survey who provided the new data for the present study represented a sample of the approximately 300 officers of the participating medium-size police department as well as the 700 officers of the large-size police department. All 1000 officers in this population were invited to participate; the 69 individuals in the obtained sample were those who voluntarily completed and submitted the survey.

The samples for all three data sets used in this study represented specific segments of their populations. The 28 respondents in data set #3 represented a sample of the participants of the Leadership in Policing Organizations training program within the large municipal police department. In data set #2, the 150 officers who voluntarily participated in a survey study represented the larger population of officers from which they came. The 97 respondents of the online survey represented a self-selected sample of the approximately 1000 officers of the two participating municipal police departments.

Instrumentation

Description of Instruments

Two instruments were used to gather the new data for this study: The General Decision-Making Styles survey (GDMS) (see appendix E) and a demographic questionnaire (See appendix G) developed by the researcher. The GDMS was also used in both previous studies from which data was used in the study. This made both direct comparisons across studies and combining data from the three samples into a single large data set possible.

The GDMS analysis in the present study used existing data provided by Hulderman's (2003) research as well as previous research using the GDMS instrument on active-duty police

officers attending a leadership development course. In addition, this study used new research data collected from officers from two municipal Oklahoma police departments.

The General Decision-Making Styles survey (GDMS) has been used frequently in research on decision-making. This instrument is a five-point, Likert-type scale survey instrument that asks participants to state their level of agreement or disagreement with a set of 25 statements. Scott and Bruce (1995) defined decision-making style as "the amount of information gathered and the number of alternatives considered when making a decision" (p. 819). The GDMS divides decision-making styles into five categories: rational, intuitive, dependent, avoidant, and spontaneous. Participants respond to five questions for each category. The cumulative point total of each section is calculated to describe preferred decision-making style(s) with a high-point total in a style category (maximum points possible = 25) representing a preference for that style.

The GDMS has a research history and acceptable levels of validity already documented in chapter 2 for both general use and specifically with active-duty police officers. Hulderman (2003) cited Scott and Bruce (1995) in summarizing the validity of the GDMS: "The decision-making style validity of GDMS was established through factor analysis" (Hulderman, p. 101) and "The content validity of GDMS was established by conducting a thorough search of both related theoretical and empirical research literature" (Scott & Bruce, 1995, p. 827).

The demographic survey for this study was created by the researcher and was attached as a precursor to the GDMS. Respondents were asked their age, gender, status as a full-time law enforcement officer, number of years in the policing career, if they are a supervisor, and educational experience.

The two instruments were combined into a single questionnaire and were delivered and responded to online. The GDMS was not altered in any way from its original content or format, thus preserving the validity and reliability established for the instrument.

Reliability Analysis

A reliability analysis was conducted on the General Decision-Making Style (GDMS) survey using the responses in this study to determine whether the scale was effectively reliable with the sample of this study. A reliability analysis allows a study of the properties of measurement scales and the items that compose the scales (Tabachnick & Fidell, 2007).

To test the reliability of the GDMS, Cronbach alpha (α) reliability analysis was used. This procedure calculates an internal consistency reliability coefficient that ranges between 0 and 1. The α reliability coefficient is based on the average inter-item correlation among the items on the scale or instrument. Scale reliability is assumed when the alpha coefficient is ≥0.70. Results from the GDMS analysis revealed that the scale was sufficiently reliable (Funk, Ives, & Dennis, 2012). That is, for each of the five sets of items that comprised a sub-scale representing one of the five decision-making styles on the GDMS, Cronbach's alpha (α) was calculated at N = 97. The coefficients were α = 0.815, α = .767, α = .799, α = .874, and α = .800. Thus each specific style sub-scale and the instrument as a whole were accepted as reliable measures of decision-making styles for this study. This analysis is summarized in Table 2

Table 2

Cronbach's Coefficient Alpha Analysis Indicating Internal Consistency Reliability of All Decision-Making Sub-Scales of the GDMS Were Sufficiently Reliable (≥ .70) with N = 97

Decision Style Construct	# of Items	Cronbach's Alpha

Rational	5	0.815
Intuitive	5	0.767
Dependent	5	0.799
Avoidant	5	0.874
Spontaneous	5	0.800

Procedures

The first accomplishment for this study was to seek and obtain permission from the Oklahoma State University Institutional Review Board (IRB) to gather the necessary data and conduct this study (Appendix G). When IRB permission was granted, emails were sent to Deputy Chief Daryl Webster of the Tulsa Police Department and Chief Todd Wuestwald of the Broken Arrow Police Department seeking permission to use their officers for the study. Permission was granted from the chiefs of the departments (Appendix A and B).

The officers were provided the opportunity to participate in this research via their departments' internal email system. The survey was posted as a website link and information was emailed to respondents' internal email systems. Participants had a three-week time frame in which to respond. Once participants read an informed consent screen, they clicked on a button acknowledging consent to proceed with the survey. This screen instructed participants in the IRB elements of informed consent. Participants had to acknowledge that they understood these instructions by clicking on a link indicating such to proceed to the survey.

The two-page survey was included on the same website. The first page included a survey collecting information on the respondents' demographics. This was the same demographic data provided by the participants in the police leadership-training course. It differed from the demographic data in Hulderman's (2003) study slightly. Hulderman sought information to learn

if the officer was employed by a city, state, or county law enforcement agency. Because participants in this research were all members of one of the two municipal police departments, that information was not necessary.

Hulderman's study participants were also asked if their department employed the use of community policing. The two departments used for this research did use community-policing efforts so that question was also eliminated.

On the second page of the online survey, the GDMS determined the general decision-making styles of the respondents. Written instructions were provided to each participant on the front page of the survey. Surveys were anonymous and respondents were issued a control number in order to match the demographic data with the GDMS responses. Participants were encouraged to answer with their first response.

Data from the Hulderman study was obtained by reviewing Hulderman's 2003 doctoral dissertation. Archived data from the pre-test/post-test study of the leadership training participants was obtained from the large municipal police department. The researcher sought and obtained permission from the chief of the police department to use the data gathered during the leadership training class offered in 2008 and 2009.

Data Analysis

All data was entered into the SPSS statistical analysis computer program for analysis. Data analysis techniques are shown for each research question in Table 3 and the following list:

1. Demographic profile—frequency distributions and descriptive statistics
2. Decision-making styles profile—frequency distribution and descriptive statistics
3. Relationship between demographic variables and decision-making styles—MANOVA and ANOVA analysis

4. Dominant decision-making styles in policing—frequency distribution and descriptive statistics
5. Effect of leadership training on decision-making style—frequency distribution and *t*-tests.

Table 3

Research Questions, Data Source, and Data Analysis

What is the profile of participating police officers on selected demographics?	Demographic questions on the survey	Frequency distribution and descriptive statistics
What is the profile of participating police officers on decision-making styles as measured by GDMS?	GDMS Instrument	Frequency distribution and descriptive statistics
What relationships exist between selected demographics and decision-making styles among participating police officers?	Demographic questions and the GDMS	MANOVA and ANOVA analysis
Are there dominant decision-making style patterns in the policing occupation?	GDMS data from this study and 2 previous ones	Frequency distributions and descriptive statistics
What is the effect of leadership training on decision-making styles of participating officers?	Existing institutional pre-test/post-test data	Frequency distributions and *t*-tests

CHAPTER IV

FINDINGS

Summary of Study

The data obtained for this research came from three separate sources. One study was conducted by the Tulsa Police Department in relation to a leadership development course. Participants were presented with the General Decision-Making Styles (GDMS) instrument before the course began and then took the assessment again after completing the three-week course. This provided quantifiable data on 28 subjects.

The second input study was conducted by this researcher. For this data source, a group of participants from a local police department participated in an online survey that was emailed to them through their police departments' internal email system. Officers (N = 1000) were offered an opportunity to participate in a research study to assess the general decision-making style of active-duty officers. Officers responded online and the data were collected through an OSU College of Education's Qualtrix survey site. Sixty-nine participants responded to the survey.

Data from sources one and two yielded a total of 97 full-time police officers who participated in the two separate studies. These data sets were combined for some of the analyses in the present study.

The third set of data used for this study came from dissertation research collected in 2003. Hulderman (2003) gathered 150 responses from full-time police officers who participated in a certified continuing education course for Missouri police officers (p. 11).

Demographic data were gathered during all three studies for use in the present study to provide profile data. All data was entered into SPSS Version 13 for analysis. Data analysis techniques for each research question were:

1. Demographic profile–frequency distributions and descriptive statistics
2. Decision-making styles profile–frequency distribution and descriptive statistics
3. Relationship between demographic variables and decision-making styles–MANOVA and ANOVA analysis
4. Dominant decision-making styles in policing–frequency distribution and descriptive statistics
5. Effect of leadership training on decision-making style–frequency distribution and *t*-tests

RQ1: What is the profile of participating police officers on selected demographics?

The data for the demographic profile of participating officers was divided into two sections. The first section represented the data collected from the Tulsa Police Department's research combined with the new data collected by this researcher ($N = 97$) . The second section provided data gained from Hulderman's (2003) study for comparison ($N = 150$).

The profile of the participating officers was developed with frequency counts and descriptive statistics in SPSS. Tables 4 through 6 show the distributions of variables that could be matched and compared from the present study and Hulderman's (2003) study.

Experience of Participating Officers

Comparison data for the *experience variable* were available for both the present study

and Hulderman's (2003) study. Table 4 presents the data collected for the present study (*n* = 97); Table 5 shows Hulderman's data (*n* = 150). In both data sets, experience is defined by the number of years officers have been in law enforcement.

Table 4

Experience of Officers Surveyed in Present study (n = 97)

Groupings	Frequency	Percent	Valid Percent	Cumulative Percent
1-5 years	2	2.1	2.1	2.1
6-10 years	18	18.6	18.6	20.6
11-15 years	27	27.8	27.8	48.5
16-20 years	19	19.6	19.6	68.0
> 20 years	31	32.0	32.0	100.0
Total	97	100.0	100.0	

Table 5

Experience of Officers from Hulderman's (2003) Survey*

Experience	Number	Percent
1-5	50	38.67
6-10	45	30.00
11-15	24	16.00
16-20	9	6.00
21-45	14	9.33

*Table taken from Hulderman (2003). Variables reported are number of years of experience, *n*, and percent, where $N = 150$.

The data presented in Tables 4 and 5 indicate that the officers in the present study were more experienced than those studied by Hulderman. Of the 97 officers in the present study, only 20.7% had 10 or fewer years of experience, while 68.67% of Hulderman's participants were in this experience classification. By contrast, 79.4% of officers in the present study had 11 or more years of experience with 32% having more than 20 years; only 31.33% of Hulderman's sample had 11 or more years with only 9.33% having more than 20 years. This data skew probably occurred because a considerable part of the sample for the present study was supervisors, and they were likely to have more years of experience. This discrepancy made comparison of the experience levels of the two research samples meaningless.

Age of Participating Officers

Data were also available from both the present study and Hulderman's (2003) study regarding the age of participants. Table 6 presents the age data reported by Hulderman.

Table 6

Age of Officers from Hulderman's (2003) Research*****

Age	Number	Percent
22-25	14	9.33
26-30	44	29.33
31-35	33	22.00
36-40	15	10.00
41-45	17	11.33
46-50	7	4.67

51-68	20	13.33

*Table taken from Hulderman (2003), where *N* = 150. (Note: data reported directly from Hulderman's dissertation and was accepted as reported)

For comparison, age data for the present study are shown in Table 7, which summarizes all data from the present study. Table 7 displays frequency data for each demographic variable for the officers in the present study, including group (original or archived), experience, supervisor status, education, gender, and age. Table 7 represents the data collected by the researcher gathered from the archival data at the Tulsa Police Department as well as the new data gathered from both the Broken Arrow Police Department and the Tulsa Police Department.

Table 7

Frequency of All Demographic Variables of Participants in the Present Study (N = 97)

Variable	Frequency	Percent
Group		
Original	69	71.1
Archival	28	28.9
Experience		
1-5years	2	2.1
6-10years	18	18.6
11-15years	27	27.8
16-20years	19	19.6
20+years	31	32
Supervisor		
yes	57	58.8
no	40	41.2

Education		
Some college	17	17.5
Bachelor's Degree	56	57.7
Some post-graduate	13	13.4
Post-graduate degree	11	11.3
Gender		
male	83	85.6
female	14	14.4
Age		
21-30	6	6.2
31-40	39	40.2
41-50	36	37.1
51-60	14	14.4
>60	2	2.1

The group variable in Table 7 above indicates whether the data were collected from original (71.1%) or archival (28.9%) sources. The original sources were collected by the researcher through an online survey of officers within the Broken Arrow and Tulsa, Oklahoma, Police Departments in the summer of 2011. The archival data were obtained from the records of police supervisors attending a leadership development class conducted at the Tulsa Police Department in 2008.

Officers also responded to whether they were supervisors or not. The majority of those responding (58.8%) were of the rank of officer. The remainder (41.2%) was supervisors. This

data was likely skewed by the fact that all data collected from the Tulsa Police Department was for supervisors. Hulderman's research did not survey rank, making comparisons on this variable impossible.

All officers in the present study, original and archived, (100%) were high school graduates. Those that responded with some college were 17.5% of the sample, 57.7% had a bachelor's degree, 13.4% had some post-graduate college, while 11.3% had post-graduate degrees.

Hulderman's research indicated that 58.7% were high school graduates, 16.7% had some college, 23.3% had bachelor's degrees, and 1.3% had post-graduate degrees. These data indicate that officers in the present study were better educated than those studied by Hulderman.

Officers also designated their gender as male or female. Of those that responded, 83% were male and 14% were female. Hulderman's research had 95.3% male and 4.7% female. These male-skewed distributions were not dissimilar and not atypical for the policing profession ("Bureau of Justice," 2013).

The officers also listed their age as determined within subsets of 10 years. Those who listed themselves within the 21–30 age brackets comprised 6% of the sample, officers 3–40 were 39%, 41–50 were 36%, 51–60 were 14%, and 60 or older comprised 2%. The comparison of the age variable in Table 6 and Table 7 indicates that the present sample had 38.66% age 30 or less, while Hulderman's group had only 6.2%. In the present study, 48% were age 31-50, while Hulderman's sample had the large majority (77.3%) in this middle-age group. The two studies had similar percentages in the >50-age group: 13.33% in the present study and 16.4% in Hulderman's study.

As a summary of the demographic profile of the 97 police officers who participated in the present study, it was observed they:

- Were relatively experienced – five or more years ("Bureau of Justice," 2013)
- Had similar percentages of officers and supervisors, but this was skewed toward the supervisor category by the fact that 28 of the 97 came from archived data from the Tulsa Police Department, all of whom were supervisors participating in leadership training
- Were relatively well educated – college graduate or more ("Bureau of Justice," 2013)
- Were predominantly male, which is typical in the policing occupation ("Bureau of Justice," 2013)
- Were predominantly in the age range of 31 to 60 years

RQ 2: What is the profile of participating police officers on decision-making styles as measured by GDMS?

Using SPSS 13, descriptive statistics were run on the raw scores of subjects on the five GDMS decision-making styles to address research question two. Six metrics were evaluated in the analysis: minimum style score, maximum style score, mean, standard deviation, skewness, and kurtosis. Results from the analysis indicated that on the GDMS, *rational decision-making style* had the highest mean with $M = 4.36$ and lowest standard deviation ($SD = .51$). This was followed by the intuitive style with $M = 3.72$, dependent style with $M = 3.02$, spontaneous with $M = 2.55$, and finally the lowest mean was avoidant at $M = 1.64$. Descriptive statistics for all five decision-making styles are summarized in Table 8.

Table 8

Distribution of Mean Scores and Descriptive Statistics for the GDMS Decision-Making Styles (N=97)

GDMS Decision-making Styles	Minimum	Maximum	Mean	Standard Deviation	Skew	Kurtosis
Rational Sum	1.80	5.00	4.36	0.51	-1.34	5.42
Intuitive Sum	2.00	5.00	3.72	0.66	-0.04	-0.44
Dependent Sum	1.00	5.00	3.02	0.77	-0.13	0.18
Avoidant Sum	1.00	4.40	1.64	0.65	1.28	2.47
Spontaneous Sum	1.00	4.60	2.55	0.74	0.41	-0.13

Note. Standard error Skew = .245, Standard error Kurtosis = .485.

The relative strength and weakness of the Rational and Avoidant styles respectively among participants of the study are demonstrated by the magnitude of the skew of their distribution curves as well as by their mean scores. The curves for the two styles showing their skews are shown in Figures 6 and 7.

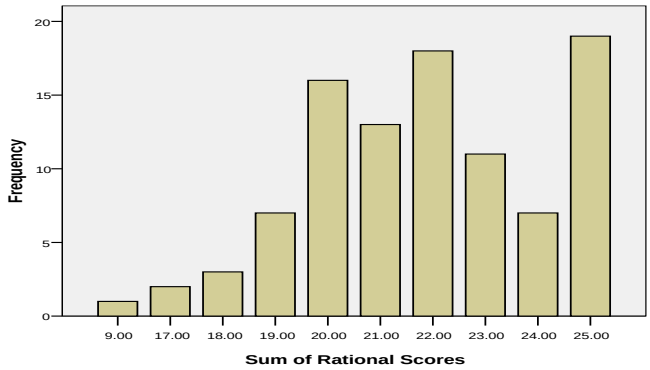

Figure 6. Rational Score Skew

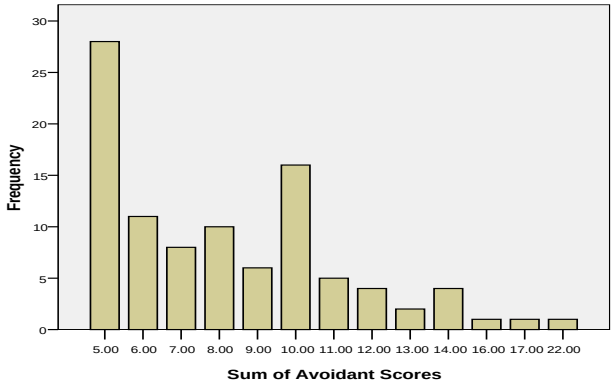

Figure 7. Avoidant Score Skew

RQ 3: What relationship exists between selected demographics and decision-making styles among participating police officers?

To address research question 3, data were analyzed using SPSS 20.0 to perform multiple analyses of variance (MANOVAs), followed-up with analyses of variance (ANOVAs) in the presence of a significant MANOVA test. In the MANOVAs, the demographic variables were the independent variables. The set of the five decision-making style scores was combined in the MANOVA model and treated as a single dependent measure.

Age

The MANOVA was used with the age demographic to test if there was a significant overall difference in GDMS style scores among the age ranges. Results from the MANOVA test indicated that there was no significant difference overall in the style scores across the age ranges (Wilks' Lambda = .86; approximate F (df = 5) = .668; p >.69. Specifically, the sum of scores for each of the five decision-styles did not differ significantly across the five age groups. Post-hoc individual ANOVAs confirmed there were no significant results for any individual age group.

Gender

For the gender demographic, a MANOVA was used to test if there was a significant gender difference overall in GDMS scores. Results from the test indicated that there was no significant overall difference (Wilk's Lambda = .925; approximate F (df = 5) = 1.48; p = .21. However, in post-hoc exploration of the five styles individually using ANOVAs (general linear model with fixed effects), one significant style difference emerged. This difference presented for the Intuitive decision-making style (F $(df = 92)$ = 6.6; p = .01). The ANOVA found that females were more Intuitive in decision-making style than males. The ANOVA finding was supported by a simple cross tabulation of gender by dominant style. The cross-tabulation revealed that 29% of the females (n = 4 of 14) had Intuitive for a dominant style, whereas 13% (n = 11 of 83) of the males showed Intuitive as the dominant style. Because of the small number and disproportion of females in the sample due to the gendered nature of the policing profession, this finding must be interpreted with caution.

Experience

A MANOVA was used to test if there was a significant difference in GDMS styles among the experience ranges. Results from the test indicated that overall there was no significant difference in decision-making styles across the experience ranges (Wilks' Lambda = .76; p = .18; approximate F (df = 5) = 1.30). Specifically, the sum of scores for each of the five decision-styles did not differ significantly across the five age groups. However, on a post-hoc ANOVA, the Dependent style presented a significant difference (F $(df = 16)$ = 3.90; p = .006). Because only two officers reported their dominant style as Dependent, this number is too small to be meaningful, and this finding could not be clearly interpreted.

Supervisor/Officer (Office Rank)

MANOVA was used to test if there was a significant overall difference in GDMS styles between the supervisor/officer ranks. Results from the test indicated that there was no significant overall difference in decision-making styles across the ranks (Wilks' Lambda = .91; p = .11; approximate F (df = 5) = 1.84). Specifically, the sum of scores for each of the five decision-styles did not differ significantly across the officer ranks. However, in a post-hoc ANOVA, the Intuitive style did present a significant difference (F (df = 1) = 6.80; p = .01). This relationship was confirmed with a simple cross tabulation between officer rank and the five styles that revealed that 14.5% (n = 8 of 57) of supervisors indicated Intuitive as their dominant style while 17.5% (n = 7 of 40) of officers indicated Intuitive as their dominant style. While statistically significant, the sample is too small to be clearly interpreted or practically important.

Education

A final MANOVA was used to test if there was a significant overall difference in GDMS styles among education levels. Results from the test indicated that there was an overall significant difference in decision-making styles across age groups (Wilks' Lambda = .744; p = .03, approximate F (df = 15) = 1.9). This overall difference was demonstrated with a post-hoc ANOVA to derive from the Spontaneous style. This style presented a significant difference across the education levels (F = 2.90 (df = 16); p = .04). This finding was confirmed with a cross tabulation between education levels and the five styles which revealed that only two respondents indicated Intuitive as their dominant style. While statistically significant, the sample is too small to be meaningful.

RQ 4: Are there dominant decision-making style patterns in the policing occupation?

Using SPSS 13, descriptive statistics were run on the sum of each decision-making style to address this research question. Some participants did not report a dominant decision-making style, but rather had equal scores on two styles. These "bi-dominants" were coded as "6" rather than as the 1-5, which was the coding for the five styles. The sum of each style revealed that 69.1% of the officers (n = 67 of 97) reported themselves as possessing the Rational decision-making style as their dominant style, 15% (*n* = 15 of 97) as Intuitive, 2% (*n* = 2 of 97) as Spontaneous, and 1% (*n* = 1 of 97) as either Dependent or Avoidant. These findings are summarized in Table 9. They are shown graphically in Figure 8.

Table 9

Sum of Dominant Decision-Making Styles among Sample of Police Officers (N = 97)

Styles		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rational	67	69.1	69.1	69.1
	Intuitive	15	15.5	15.5	84.5
	Dependent	1	1.0	1.0	85.6
	Avoidant	1	1.0	1.0	86.6
	Spontaneous	2	2.1	2.1	88.7
	6.00 (No single dominant style)	11	11.3	11.3	100.0
	Total	97	100.0	100.0	

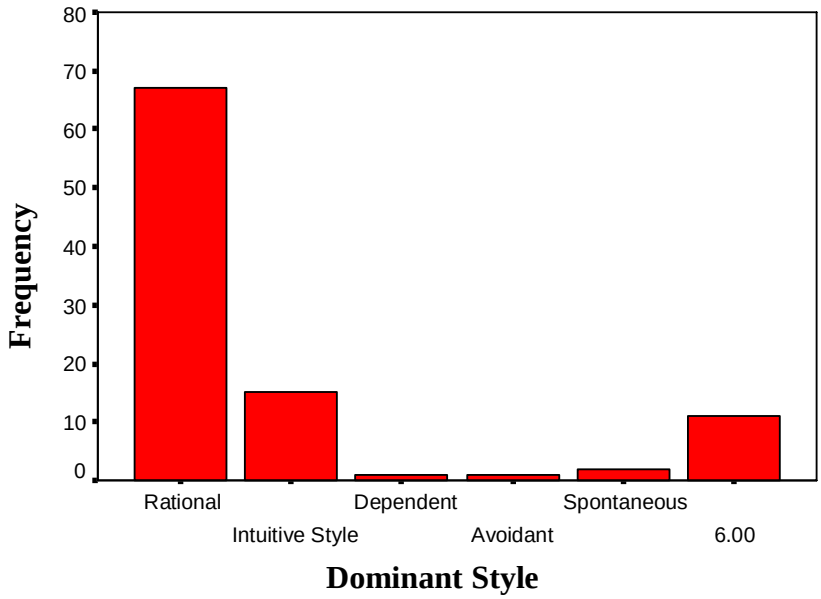

Figure 8. Distribution of dominant decision-making styles in sample

As a cross-check, the distribution of dominant decision-making styles obtained in this study was compared to the distribution obtained by Hulderman (2003). The officers who participated in Hulderman's research produced the following distribution: 61.33% reported to possess the dominant style of a Rational decision-maker, 18% Intuitive, 5.33% Dependent, 2% Spontaneous, and .07% Avoidant. Hulderman's distribution is shown in Table 10.

Table 10

Distribution of Dominant Decision-Making Styles Reported by Hulderman (2003)

Decision-Making Style	Frequency	Percent
Rational	92	61.33
Intuitive	27	18.00
Dependent	8	5.33
Spontaneous	3	2.00
Avoidant	1	0.07

Rational/Intuitive	15	10.00
Other Combinations	4	2.67

Comparing the two tables, it is quite apparent that the majority of police officers surveyed consider their dominant decision-making style as Rational. Equally as telling is the fact that only one officer in each of the two studies considers himself/herself as having the Avoidant decision-making style.

RQ 5: Describe the effect of leadership training on decision-making styles of participating officers?

To discover if leadership training had any effect on the decision-making styles of officers who participated in the training in 2009, a pre-test/post-test GDMS survey was administered before and after the intervention. Five paired-sample *t*-tests were conducted to evaluate differences in the pre and post-test scores. All five t-tests were statistically significant (*eta* = .05). Scores on the rational decision-making style decreased after the intervention (ΔM = -0.11; t (27) = 1.307; $p < .05$; $\acute{\eta}^2 = 0.06$). Scores also decreased for the intuitive decision-making style (ΔM = -0.10; t (27) = 0.889; $p < .05$; $\acute{\eta}^2 = 0.028$). Scores for the remaining three decision-making styles increased after the intervention. The dependent decision-making style revealed an increase (ΔM = -0.10; t (27) = -1.232; $p < .05$; $\acute{\eta}^2 = 0.053$), the avoidant also increased (ΔM = -0.10; t (27) = -0.384; $p < .05$; $\acute{\eta}^2 = 0.005$), as did the spontaneous (ΔM = -0.10; t (27) = -1.044; $p < .05$; $\acute{\eta}^2 = 0.039$). These findings are summarized in Table 11.

Table 11

Inferential Statistics Derived For Each Paired-Sample t-Test

Variable	*ΔM*	*df*	t	p	$\acute{\eta}^2$
Pre-Rational x Post-Rational	0.017	27	1.307	< .05	0.006
Pre-Intuitive x Post-Intuitive	0.100	27	0.889	< .05	0.025
Pre-Dependent x Post-dependent	0.107	27	1.230	< .05	0.053
Pre-Avoidant x Post-Avoidant	0.050	27	0.384	< .05	0.005
Pre-Spontaneous x Post-Spontaneous	0.128	27	1.044	< .05	0.039

While statistically significant, and therefore likely to generalize beyond the sample, the observed differences in the delta-means (e.g., differences between pre-test and post-test means), are very small and without practical importance. All observed eta-squared effect sizes ($\acute{\eta}^2$) are also small, as defined by Cohen (2009) as below $\acute{\eta}^2$ =.06 (p. 240). Thus, the findings from the paired-sample *t*=tests indicates very little effect of leadership training on decision-making styles.

The results of a second analysis of the mean scores of the decision-making styles data to address this research question are shown in Figure 9.

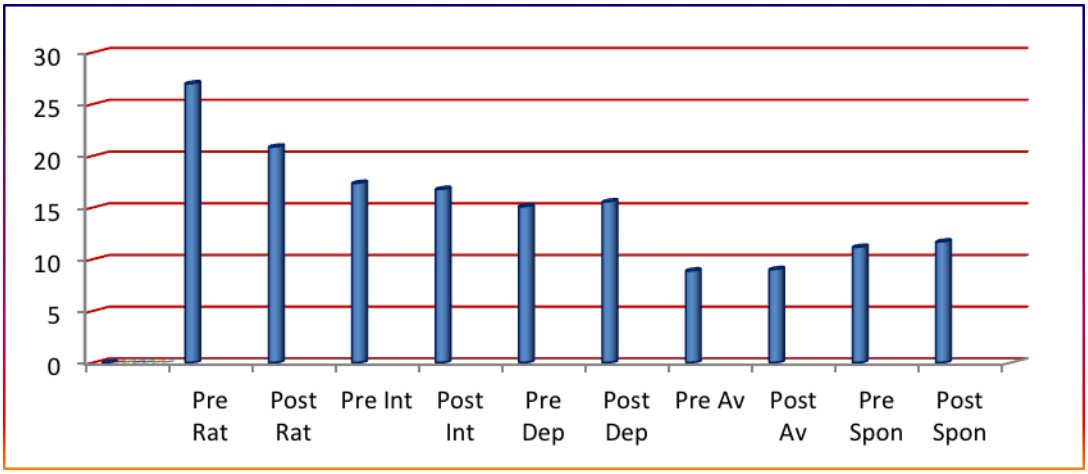

Figure 9. Pre-test and post-test results as exhibited by the mean scores

The inferential statistics combined with an analysis of the mean scores reveals that there may be a statistically significant difference in the scores after the leadership-training course. However, the differences are too small to have practical importance; in fact, there were very few changes in the decision-making styles after the leadership training course. Also, because there were only 27 usable surveys, there was not enough data to present conclusive evidence suggesting that decision-making styles may be altered with leadership training. Based on the limited evidence presented in this study, it seems that decision-making styles may in fact not be strongly affected by leadership training.

CHAPTER V

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

Overview of the Study

Background, Theoretical Framework, and Purpose

Police organizations must train officers throughout their careers to maintain the professionalism the public expects. Police organizations introduced training in soft-skills during the 1990s and seek to continue educational opportunities in soft-skills training. Within the policing industry is a growing demand for management approaches that are less paramilitary and more employee focused (Kania, 2008; Peak, 2010; Wuestwald, 2012). Wuestwald (2012) revealed, "Many of these critical assessments of police administration also call for bottom-up management shifts that afford greater autonomy and involvement in decision-making for baseline officers" (p. 94). Even with all of the efforts to improve opportunities for police employees to be involved in the decision-making processes of their departments, a review of the research found little information on the decision-making styles of police officers.

Community-oriented policing is the concept of encouraging police officers to collaborate with their community to discover and solve the crime problems of that community. This collaboration leads to more solutions for the communities and greater effectiveness for the police department (Hulderman, 2003; Peak, 2010; Walker & Katz, 2005). Research indicates that

officers employing the problem-solving models of community-oriented policing apply decision-making skills that affect the residents, employees, companies, churches, and others involved or residing in those communities.

The concepts of community-oriented policing, problem solving, and leadership all imply the ability to make complex decisions. Literature review revealed that little is known at this time about the decision-making styles of police officers, which provided the impetus for this study. The purpose of this study was to describe the demographics and decision-making profiles of active-duty police officers, as well as any relationships that may exist among these variables, and the effects of training on decision-making styles. Specifically, the study used three different data sets to compare and describe the demographics and decision-making characteristics of police officers, general decision-making style patterns in the occupation, and effects of leadership training on decision-making styles.

Following are theoretical concepts that comprised the research constructs and framework for this study.

Adult Learning: The concept developed by Malcolm Knowles considered the "art of helping adults learn" (Knowles, 1980, p. 43). Adults continue to learn throughout their lifetime and police officers continue their education due to personal or mandated reasons throughout their career (Merriam, Caffarella, & Baumgartner, 2007; Kania, 2008).

Transfer of Training/Learning: This refers to whether the education gained in a training environment results in behavioral or attitudinal changes on the job. "There is strong consensus that acquisition of knowledge, skills, behaviors, and attitudes through training is of little value if the new characteristics are not generalized to the job setting and are not maintained over time (Kozlowski & Salas, 1997 as cited in Yamnill & McLean, 2001, p. 195).

Career Choice Models: Research has demonstrated that, "People choose careers through several factors, including decision-making styles, emotion, and content" (Swanson, 2002, p. 41). People process career decisions using their personal decision-making style.

Leadership Development and Training: Leadership development and training is an ongoing education effort in many organizations and law enforcement agencies. Because leadership is considered a soft-skill, the education of police officers in leadership is difficult to assess. While many may learn leadership by observing it, this does not address the question of whether or not leadership can be taught in a structured setting.

Decision-Making Style: This is the "learned, habitual response pattern exhibited by an individual when confronted with a decision situation" (Scott & Bruce, 1995, p. 819). The decision-making style can be affected by the situation. Scott and Bruce (1995) created an instrument to determine an individual's primary decision-making style. The General Decision-Making Styles survey (GDMS) is an instrument that identifies which primary style emerges, the rational, intuitive, dependent, avoidant, or spontaneous.

These concepts were chosen for the theoretical framework and design of this study because each contributes to the manner in which decision-making is employed while acting as an active-duty police officer. Community policing emphasizes the importance of problem solving. Problem solving requires the ability to make decisions.

Leadership development requires the student to make decisions with information presented. The students are required to assess a case study, seek the necessary information, and act upon that information. The student must then assess the results to determine if the decision enacted led to the desired result. All of these steps require decision-making.

In adult education, students are required to process information and make decisions based upon the information provided. Career Choice model infers that one must decide upon a career and will use a decision-making method to arrive at that decision (Swanson, 2002).

This study examined relationships among career choice, decision-making styles, leadership training, and transfer of training in the policing occupation. It also included selected demographic variables in the interacting variables mix. The study situated policing in an environment of adult learning and a job context of community policing. While the study did not actually assess on-job performance of police officers, it did assert that performance of officers in a community-policing environment could be affected by the variables included in this study. Similarly, the study did not examine the nature or effectiveness of the transfer of training; it did assume that transfer must occur in order for training in leadership and decision-making to affect job performance. Career choice decisions must occur before police officers can enter the central panel of the framework of this study. However, the career choice decision process was beyond the scope of this study. Similarly, this study hypothesized that what occurs within the framework of this study affects on-job performance of officers in community policing through transfer of training, but testing this working hypothesis was beyond the scope of this study.

Research Questions

Literature review guided the development for this study of five research questions, a conceptual model, and three hypotheses. The first research question considered the profile of participating police officers on selected demographics. The second research question discovered and described the profile of participating police officers on decision-making styles as determined by the GDMS. The third research question examined what relationship(s) might exist between selected demographics and decision-making styles among the participating police officers. The

fourth research question explored if there are dominant decision-making style patterns in the policing occupation. The final research question tested the effect of leadership training on decision-making styles of officers who participated in the Leadership in Police Organizations training.

Procedures

Officers from two police departments, a large-size and a medium-size department, were provided the opportunity to participate in this research via their departments' internal email system. The survey was posted as a website and the respondents were emailed through their departments' internal email system. Participants had a three-week window to respond. One thousand officers had the opportunity to participate. Ultimately, 69 officers responded and provided complete answers to the survey. Because the response rate was so low, the external validity or generalizability of this study was limited.

Data from the Hulderman study was obtained by reviewing Hulderman's 2003 doctoral dissertation. Archived data from the pre-test/post-test study was obtained from the large, municipal police department. Hulderman's research yielded 150 respondents.

A third set of data was gathered from the Tulsa Police Department. This data was gathered during a leadership development course the department provided for all supervisors. The archived data netted 28 responses with complete data.

Demographic data was gathered in all three studies. This data was analyzed for the present study to provide profile data.

Conclusions

Several conclusions can be drawn from the findings of this study, these include:

Conclusion 1: The participants in this study were generally representative of national

trends for the policing profession. Their demographic profile was in line with national trends. In particular, females continue to be under-represented in this occupation.

The first research question for the study related to the demographic profile of the participants, was addressed by comparing demographic data collected for the present study with the data from two previous studies. The profiles were comprised of experience, age, education, gender, and whether or not the officers were supervisors.

On the demographic of supervisor versus non-supervisor, the sample for this study was skewed in favor of supervisory status. This was due to two factors. First, all participants in leadership development training were supervisors. Second, patrol officers have very little time to check their emails while on duty. Supervisors however, have ample time to read and respond to emails. While patrol officers' cars have mobile data terminals, they do not receive email. Supervisors usually spend the first two to three hours each day in their offices answering emails and reviewing reports.

Comparing other demographics of this study nationwide revealed that this study is in line with national trends. In 2008, 13% of officers were female ("Bureau of Justice," 2013). This study's participants had 14% female. Hulderman's research had only 4.7% female. There are no statistics available for the number of supervisors or experience levels within policing on a national basis.

This study revealed, as the national trends indicate, that females are underrepresented in the policing career. Both studies show a low representation of females in the study and the national statistics reveal a low percentage of police officers in the United States are female. The policing profession is still a male-dominated profession.

Conclusion 2: The decision-making profile of the police officers in this study had two clearly delineated aspects.

Research question two addressed this issue. The findings indicated that the *rational decision-making style* had the highest mean (4.36). The *avoidant decision-making style* had the lowest mean (1.64). These results indicate that most officers consider their dominant, decision-making style as rational, while very few—one in the new study and one in Hulderman's study—indicated preference for the avoidant decision-making style. This was confirmed visually in tables 9 and 10 in Chapter 4.

Previous research indicates a negative correlation between the rational decision-making style and the avoidant decision-making style (Loo, 2000; Scott & Bruce, 1995; Spicer & Sadler-Smith, 2005). The findings of this study of the clear dominance of the rational style and the absence of the avoidant style support a negative relationship. Some researchers have also found a relationship between rational style and cognitive engagement, which is the opposite of avoidance.

> The positive association between the rational decision-making style and rationality is in line with previous results that reported a positive association between the rational style and cognitive engagement conceptualized as connected knowing (emphatic way of knowing by taking others' perspectives into account), separate knowing (critical, detached, and independent way of knowing), and planning (the extent to which decision makers tend to plan their actions in advance (Galotti et al., 2006 as reported in Curseu and Schruijer, 2012, p. 1060).

Research indicates that future studies are likely to reveal few active-duty police officers possess the avoidant decision-making style. The majority of police officers are likely to possess the rational decision-making style as their primary style.

Conclusion 3: Demographic factors were not related to decision-making style preferences.

Research question three asked if there was a relationship between the selected demographics and decision-making styles of participating police officers. Consistent with most

of the previous research, data analysis revealed that in this study demographic information was not a factor in identifying the dominant decision-making styles of the officers (Driver, Brousseau, & Hunsaker, 1990; Hunt, Krzytofiak, Meindl, & Yousry, 1989; McKenney & Keen, 1974; Mitroff, 1983; Scott & Bruce, 1995).

The ANOVA analysis found the exception to this finding was that females reported a greater likelihood to possess an Intuitive decision-making style. A simple cross-tabulation of gender by dominant style confirmed that 29% of females reported the Intuitive decision-making style as dominant. Only 13% of males showed the Intuitive style as dominant. Because the number of female participants in this study was so low, this finding must be interpreted with caution.

This finding conflicts with previous research however, indicating that females are no more likely to report an Intuitive dominant style than males (Curseu & Schruijer, 2012; Sadler-Smith, 2011). Loo (2000) discovered that females were more likely to report an Avoidant dominant style than men. The present study did not support that finding.

Further research into the possibility of a gender correlation with the Avoidant and Intuitive decision-making styles is necessary.

Conclusion 4: There appears to be a clear occupational pattern of decision-making styles in the policing profession.

Research question 4 examined if there are dominant decision-making style patterns in the policing occupation. Hulderman's (2003) research indicated that the majority (61.33%) of police officers reported a dominant decision-making style of *rational*. This was confirmed in the findings of the present study (69.1%).

The other pattern that is revealing is that less than 1% of active-duty police officers in both studies reported a decision-making style of *avoidant*. In a very recent study, Curseu and Schruijer (2012) used the GDMS to survey 102 mid-level managers. They hypothesized, "…that rationality is positively correlated with rational style, whereas indecisiveness is positively correlated with the avoidant and dependent styles negatively with the rational decision style" (p. 1055). Reporting the results of that study the authors wrote, "Our study contributes to the research in indecisiveness by showing that the avoidant and dependent styles are positively associated with indecisiveness, whereas the rational style has a strong negative influence on indecisiveness" (Curseu & Schruijer 2012, p. 1060).

This study confirms previous research that there is a negative relationship between the rational decision-making style and indecisiveness. It also affirms the hypothesis that there is a dominant decision-making style pattern within the policing occupation.

Conclusion 5: Leadership training appears to have no effect on dominant decision-making style preference. Decision-making style preference appears to be resistant to change through training.

Research question 5 addressed the effects leadership training might have on decision-making styles. The pre-test/post-test administered to the police supervisors only netted 28 usable survey instruments; all of the surveys that had missing responses were eliminated from the pool of data. The small size of this sample indicates caution must be exercised in interpreting or generalizing the findings leading to this conclusion.

All five of the paired-sample *t*-tests used to address this research question were statistically significant but too small to have practical importance, demonstrating that scores on the rational decision-making style decreased slightly after the intervention as well as scores for the intuitive decision-making style (see Table 11).

Additional analysis using the observed eta-squared effect sizes and the pre-test/post-test delta-means (differences between the means) led to the conclusion that the paired-sample *t*-tests showed little effect from the leadership training on decision-making styles (Driver, Brousseau, & Hunsaker, 1990; McKenney & Keen, 1974; Mitroff, 1983; Scott & Bruce, 1995). This led, in turn, to the conclusion that decision-making styles, like other aspects of cognitive style discussed in the literature, are deeply embedded and resistant to change.

The eta-squared results combined with the delta-means led this researcher to conclude that although there did appear to be a slight shift decrease in the rational and intuitive decision-making styles and an increase in the dependent and avoidant styles after the training intervention, the shift was negligible and supports the resistance of decision-making styles to change through training.

These results support the findings in previous studies that even when an intervention involving learned decision-making process is employed, individuals are not likely to change their dominant decision-making style.

Discussion and Implications

The first implication to be drawn from this study is that, as the research indicated, there does not appear to be a relationship between the selected demographic data and decision-making style. Although some variance was indicated that females are more likely to score higher on the intuitive scale, the sampling was too small to be conclusive. Because age and experience demonstrated no effect upon the decision-making styles, it is likely that decision-making styles do not change with on-the-job time and experience.

This supports the assertion of recent studies suggesting that decision-making styles may be a subset of a cognitive style and subject to the general characteristics of cognitive styles (Loo, 2000; Spicer & Sadler-Smith, 2005). Because cognitive styles are unlikely to change throughout

one's lifetime, it is reasonable to infer that one's dominant decision-making style is also unlikely to change. The important implication here is that inducting police recruits with inappropriate decision-making styles and planning to change their style through training is not likely to be an effective strategy.

The dominant decision-making style was not influenced in this study by the intervention of leadership training. Even though the leadership-training course strongly emphasized collaborative decision-making, the pre-test/post-test results indicated that dominant styles remained unchanged. This again supports the assertion that decision-making styles are resistant to change. This resistance was also demonstrated in the policing occupation by a pre-test/post-test study involving police officers during firearms training which discovered that dominant decision-making styles were not altered during a Firearms Training Simulation (FATS) course (Mitchell & Flin, 2007).

With the present study in *soft-skills training* and Mitchell and Flin's research involving *technical skills training*, it appears unlikely that future research will discover dominant decision-making styles changing in the policing occupation through training interventions.

What is quite evident from this research is that the overwhelming majority of active-duty police officers possess the *rational decision-making style as their dominant style. This supports the hypothesis that there is a primary decision-making style within the career of policing.* This is the first evidence of occupational patterning in decision-making styles observed by this researcher.

The fact that less than 1% of active duty police officers in this study possessed the dominant decision-making style of *avoidance* is quite revealing with important implications. If the avoidant decision-maker was, as the theorists have suggested, seeking to avoid making

decisions, then law enforcement would certainly not be a desirable career. The law enforcement career is fraught with decisions daily. Administrative, patrol, investigative, inquisitive, and logical decisions face an officer each day he or she is on duty. It simply would not be prudent to have individuals that avoid decision-making in this responsibility.

Because research (including the present study) has shown that decision-making style is resistant to change and the avoidant decision-making style actually seeks to avoid making decisions, it is reasonable to surmise that if one possesses the avoidant decision-making style, that individual would not be able to train away from that style.

This calls into question the wisdom of hiring individuals who possess the avoidant decision-making style as police officers.

Recommendations

For Theory and Theory-Related Research

Harren (1979) began research into the decision-making process with his study about career decision-making. In his research, Harren identified the dependent, rational, and intuitive decision-making styles. He considered the manner in which students arrived at their career decisions. He did not investigate whether specific decision-makers consider or reject certain careers as an element of their decision-making process.

Scott and Bruce (1995) defined decision-making style as:

> Decision-making style is defined here as the learned, habitual response pattern exhibited by an individual when confronted with a situation. It is not a personality trait, but a habit-based propensity to react in a certain way in a specific decision context. (p. 820)

The Scott and Bruce (1995) research discovered two additional decision-making styles: the avoidant and the spontaneous. After testing four sample groups consisting of 1,441 military officers, 84 MBA students, 229 upper-level undergraduate business students, and 189 engineers

and technicians, Scott and Bruce (1995) arrived definitively at the five factors comprising their decision-making survey instrument.

Scott and Bruce (1995) tested specific groups of military officers and engineers but never analyzed the data to determine if the research indicated that specific decision-making styles gravitate to specific careers.

Scott and Bruce (1995) also confirmed previous research when they observed the following:

> The negative correlation between the rational and avoidant decision-making styles (in both military officer and undergraduate student samples) supports the conclusion of Phillips et al. (1984) that rational decision makers tend to approach, rather than avoid problems. However, in contrast to Phillips' et al. (1984) conclusion that dependent decision makers were no less likely to avoid problems than were rational or intuitive decision makers, the present study found that dependent decision makers were more likely to avoid decision-making. This supports Harren's (1979) notion that dependent decision makers are relatively passive and seek to avoid decision-making. (Scott & Bruce, 1995, p. 829)

Examining Hulderman's (2003) research and combining those results with new data from active-duty police officers in the present study supports the notion that there is a negative relationship between rational decision-makers and dependent and avoidant decision-makers.

This study also considered the possibility that people not only decide upon a career choice using a specific decision-making style as Harren (1979) suggests, but certain decision-making styles appear to gravitate toward or avoid certain careers.

This researcher recommends further research be undertaken to test the hypothesis that one's decision-making style influences how one chooses a specific career. Do patterns of decision-making styles exist in other careers? For example, would an airline pilot exhibit the rational, intuitive style, or spontaneous style?

Within the career choice, are there patterns given one's preference for examining data? For example, would a professor who prefers quantitative research prefer a rational style while a qualitative researcher possesses the intuitive style? Since the intuitive style is relying more heavily upon "gut" feeling, is this the decision-making style more closely aligned with those interested in observing the emotional constructs of people?

Research does indicate that individuals do not use only one decision-making style, but tend to also have a secondary style (Scott & Bruce, 1995). Research into when and how the secondary style becomes primary is recommended.

While the GDMS creates a baseline for examining one's primary decision-making style, it does not measure the *behavior* of one's decision-making style. Research observing groups of individuals working through problem-solving cases to determine behaviors associated with the various styles could be quite revealing. Does one who possesses the dependent decision-making style actually call another to assist in arriving at a decision or is the burden of placing the decision upon another a mental process? Curry (1983; as cited in Spicer & Sadler-Smith, 2005) considered that decision-making styles are part of a layer of an onion and that perhaps the decision-making style is the outer layer, "a surface manifestation of more deep seated personality constructs" (p. 146).

Another call to action for research on decision-making styles is to actually interview individuals that have been given the GDMS, adding the depth inherent in qualitative research to this body of theory. This researcher could not find any data indicating that the study participants were asked if they agreed with the GDMS findings. It would be valuable data to interview groups from each of the decision-making styles to determine first if they agreed with the indication and then ask them to walk through a typical decision-making process.

Finally, how do decision-making styles relate to other theories and measures of cognitive and behavioral styles? Is there any correlation between decision-making styles and the D.I.S.C. personality profile for example? Does the secondary decision-making style emerge due to emergency situations or due to cognitive abilities? Will a rational decision-maker resort to intuitive decision-making because of stress factors or time?

This research line-of-inquiry would add significantly to what is currently known about the decision-making styles theory base. It would add detail and precision to the theory, and would tie it directly to the field of occupational and career aspirations, choices, and guidance.

For Practice and Expansion of Policing Occupational Research

The findings of this research indicate that only two individuals within this sample of police officers reported preference for the avoidant decision-making style as their primary style. Because the avoidant decision maker is characterized by the desire to avoid making a decision and the police career is one where decisions could be life or death, there may be reason to eliminate those with the avoidant decision-making style from the pool of applicants. If one is confronted with the decision to shoot an individual and that decision will cost another person his/her life, is that a situation in which the avoidant decision maker should be placed? It may be unfair for that type of person to be given that responsibility. It may also be dangerous.

Instructors, administrators, and the active-duty police officers themselves need to understand the implications of the decision-making process. Research indicates that decision-making styles may be fluid given the situation (Harren, 1979), but they do not change with time or training. Attempting to "train one out" of his/her primary decision-making style is most likely in vain.

Providing instructors with the definitions of decision-making and helping them to become aware that there are five distinct decision-making styles will help instructors tailor their approach to the students. Police officers must continue training throughout their career. Officers who are already in the profession should not be asked to leave based upon the results of a GDMS survey. Therefore, it is necessary to work with them to train them in a manner that will best help them arrive at a positive decision.

Recent research into the study of GDMS has appeared in the literature since this researcher conducted the review of literature for this study. The study conducted by Curseu and Schruijer (2012) revealed that theorists are now referring to the survey instrument as the General Decision-making Styles Inventory (GDMSI).

Wuestwald (2011) performed research into employee empowerment. In his study, he was able to survey more than 1,800 officers using research tools known to administrative police personnel but not readily available to the rank and file. Informing police researchers of these sources could enhance further research and is recommended new practice for police administrators/supervisors. Many of these sources are available online but they solicit input from department heads, not from patrol officers. Because the bulk of policing is performed on the streets, making this information available to patrol officers could result in valuable research for the policing profession.

Final Thoughts

This study asked if there is a pattern of decision-making styles among active-duty police officers. Reviewing historical data and acquiring new data, the conclusion is yes. There is strong evidence to believe an overwhelming majority of police officers will possess a rational decision-

making style as their primary style. Importantly, the study discovered that a very small number of police officers prefer the avoidant decision-making style.

Research strongly indicates that decision-making styles may be situational but that the primary style will resist change and remain dominant in arriving at a decision. Due to the fact that decision-making styles are unlikely to change with time or through intervention, it is important to consider using the GDMS as an instrument to qualify future police candidates. Eliminating avoidant decision makers from the pool of candidates could prevent tragic consequences. Future research in decision-making styles and partner selection could also offer insight.

Finally, additional research into the relationship between decision-making styles and other cognitive style constructs is necessary. Considering a relationship between decision-making styles and personality profiles could yield productive results and enhance understanding of the complexity of cognitive and affective profiles for those that serve in the policing profession. Qualitative research using interviews with study participants, asking their views on the GDMS results could provide interesting insight from multiple viewpoints. The community leaders involved with police officers through community policing, police leadership, and police trainers could offer valuable qualitative information.

Additional research into the possibility of decision-making style patterns emerging in career choice should also continue. This is a new arena of research. The possibility that people choose careers using decision-making styles created this line of research. It should now be expanded into the possibility that people possessing a particular decision-making style gravitate to or away from a particular career or are more successful in certain occupations. The

implications and possibilities of this line of inquiry for the fields of career aspirations, choice models, and guidance are clear and exciting.

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APPPENDICES

Appendix A: Approval Email from Chief Webster

On Fri, Apr 5, 2013 at 12:44 AM, Pat Calhoun <pat.calhoun007@gmail.com> wrote:
From Deputy Chief Daryl Webster of the tulsa Police Department:

Approved.

From: Pat Calhoun [mailto:pat.calhoun@cox.net] **Sent:** Wednesday, June 08, 2011 4:11 PM **To:** Webster, A. Daryl **Subject:** FW: Research Study

Hello Chief,

Was just wondering if you had heard anything from Chief Larsen yet. Hoping to submit my study for permission to the IRB by June 15th. Thanks

Pat Calhoun

Appendix B: Approval Letter From Chief Weustwald of the Broken Arrow Police Department

Pat, you have my permission as Chief of the Broken Arrow Police Department to conduct your dissertation study with our police officers. I should be done gathering my data by mid-June so it should work out. Just confirm with me that it's a green light before you contact our people.

Todd Wuestewald

Chief of Police

Broken Arrow Police Department

2302 South First Place

Broken Arrow, OK 74012

(918) 451-8404

Fax (918) 451-0979

Appendix C: Invitation/Solicitation Email to

Tulsa and Broken Arrow Police Department Officers

INVITATION TO PARTICIPATE IN THIS RESEARCH

As a serving police officer, you are being invited to take part in a research study that is designed to describe the general decision-making styles of active-duty police officers. Your participation in this research is completely voluntary. The research is part of my doctoral dissertation study at Oklahoma State University. The research will help us learn more about how police officers make decisions, which is a very important part of the job of policing.

The information for this research study will be gathered in a short questionnaire that you can access online. The questionnaire will ask for some information about your background and will then present 25 questions that will demonstrate how you prefer to make decisions. Completing the research questionnaire should take only about 10 to 15 minutes of your time.

Please be assured that any information you provide on the online questionnaire will be kept strictly anonymous and confidential. Before you decide to answer the questionnaire, you will have an opportunity to read about how your identity will be protected.

After you read the provided information about how your identity will be protected, if you wish to participate in the research by completing and submitting the questionnaire online, you will proceed directly to the questionnaire.

If you wish to participate, please click on the link below to go to the consent information and then to the questionnaire.

Thank you for your assistance with this important research.

Sincerely,

Pat Calhoun

Tulsa Police Department (Retired)

Candidate for the degree of Doctor of Philosophy in Education (Occupational Education)

Appendix D: Consent Screen

(To proceed to accesss to online questionnaire)

Decision-making Styles of Active-Duty Police Officers: A Cross-Case Occupational Study

Principal Researcher: Pat Calhoun, Tulsa PD (Retired)

Thank you for your interest in this research on the preferred decision-making styles of police officers. Your participation in this research is completely voluntary. There are no known risks to participating in this research beyond those of daily living. Your participation will contribute to the understanding of how police officers make decisions, which is an important part of the policing occupation. Completing this online research questionnaire – which is created and maintained with MicroSoft FrontPage software - should take only about 10 to 15 minutes of your time. You will be asked to provide some basic information about yourself and then to answer 25 questions about how you prefer to make decisions. All information you provide on the online questionnaire will be kept strictly anonymous and confidential by the researcher. All information obtained will be reported only in summary or aggregate form, and no reference will ever be made to you as an individual. All data will be maintained in locked security by the researcher and accessible only to the researcher. Data will be retained for analysis for 2 years and then destroyed. Completing and submitting the questionnaire implies your consent to participate in the research and to have your data included in statistical analysis by the researcher. Once you have submitted your questionnaire, it will be impossible for the researcher to associate your responses with you personally and therefore your data cannot be identified and withdrawn. If you choose to complete the questionnaire and participate in this research, please click on the button below to proceed. If you choose not to participate, you are free to exit at this time without giving any reasons for your decision. **If you have any questions about this research, you are welcome to contact the researcher Pat Calhoun, Oklahoma State University doctoral candidate, by phone at 918-694-6533 or by email at pat.calhoun@cox.net**. You may also contact Mr. Calhoun's OSU faculty advisor Dr. Lynna Ausburn by phone at 405-744-8322 or by email at lynna.ausburn@okstate.edu. If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-3377 or irb@okstate.edu

Please print a copy of this information for your use.

Appendix E: General Decision-Making Styles

Directions: Listed below are statements describing how individuals go about making ***important*** decisions. Please indicate the extent to which you agree or disagree with each statement.

Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
1	2	3	4	5

1. I plan my important decisions carefully	1 2 3 4 5
2. I double-check my information sources to be sure I have the right facts before making decisions.	1 2 3 4 5
3. I make decisions in a logical and systematic way.	1 2 3 4 5
4. My decision making requires careful thought.	1 2 3 4 5
5. When making a decision, I consider various options in terms of a specific goal.	1 2 3 4 5
6. When making decisions, I rely upon my instincts.	1 2 3 4 5
7. When I make decisions, I tend to rely on my intuition.	1 2 3 4 5
8. I generally make decisions which feel right to me.	1 2 3 4 5
9. When I make a decision, it is more important for me to feel the decision is right than to have a rational reason for it.	1 2 3 4 5
10. When I make a decision, I trust my inner feelings and reactions.	1 2 3 4 5
11. I often need the assistance of other people when making important decisions.	1 2 3 4 5
12. I rarely make important decisions without consulting other people.	1 2 3 4 5

13. If I have the support of others, it is easier for me to make important decisions.	1 2 3 4 5
14. I use the advice of other people in making my important decisions.	1 2 3 4 5
15. I like to have someone to steer me in the right direction when I am faced with important decisions.	1 2 3 4 5
16. I avoid making important decisions until the pressure is on.	1 2 3 4 5
17. I postpone decision making whenever possible.	1 2 3 4 5
18. I often procrastinate when it comes to making important decisions.	1 2 3 4 5
19. I generally make important decisions at the last minute.	1 2 3 4 5
20. I put off making many decisions because thinking about them makes me uneasy.	1 2 3 4 5
21. I generally make snap decisions.	1 2 3 4 5
22. I often make decisions on the spur of the moment.	1 2 3 4 5
23. I make quick decisions.	1 2 3 4 5
24. I often make impulsive decisions.	1 2 3 4 5
25. When making decisions, I do what seems natural at the moment.	1 2 3 4 5

Appendix F: General Decision-Making Styles

Directions: Listed below are statements describing how individuals go about making important decisions. Please indicate the extent to which you agree or disagree with each statement.

Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
1	2	3	4	5

1. I plan my important decisions carefully.

2. I double-check my information sources to be sure I have the right facts before making decisions.

3. I make decisions in a logical and systematic way.

4. My decision making requires careful thought.

5. When making a decision, I consider various options in terms of a specific goal.

6. When making decisions, I rely upon my instincts.

7. When I make decisions, I tend to rely on my intuition.

8. I generally make decisions which feel right to me.

9. When I make a decision, it is more important for me to feel the decision is right than to have a rational reason for it.

10. When I make a decision, I trust my inner feelings and reactions.

11. I often need the assistance of other people when making important decisions.

12. I rarely make important decisions without consulting other people.

13. If I have the support of others, it is easier for me to make important decisions.

14. I use the advice of other people in making my important decisions.

15. I like to have someone to steer me in the right direction when I am faced with important decisions.

16. I avoid making important decisions until the pressure is on.

17. I postpone decision making whenever possible.

18. I often procrastinate when it comes to making important decisions.

19. I generally make important decisions at the last minute.

20. I put off making many decisions because thinking about them makes me uneasy.

21. I generally make snap decisions.

22. I often make decisions on the spur of the moment.

23. I make quick decisions.

24. I often make impulsive decisions.

25. When making decisions, I do what seems natural at the moment.

Style	**Items**
Rational	1-5
Intuitive	6-10
Dependent	11-15
Avoidant	16-20
Spontaneous	21-25

Appendix G: Demographic Survey

Demographic Information

Please complete the following information:

1. Are you a full-time sworn police officer? _____ Yes ____ No
2. If yes, how many years of full-time law enforcement experience do you have? ____
3. Are you a supervisor? _____ Yes _____ No
4. What is your current educational experience?
    A. High School Graduate
    B. Some College
    C. Bachelor's Degree
    D. Some Post Graduate Work
    E. Post Graduate Degree
5. What is your gender? ____ Male ____ Female
6. What is your age? _____

Appendix H: IRB Approval

Oklahoma State University Institutional Review Board

Date:	Friday, July 15, 2011
IRB Application No	ED11125
Proposal Title:	Decision Making Styles of Active-Duty Police Officers: A Cross-Case Occupational Study
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 7/14/2012

Principal Investigator(s):

Patrick Calhoun
11008 S. Darlington Ave.
Tulsa, OK 74137

Lynna Ausburn
257 Willard
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

[X] The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Shelia M. Kennison

Shelia Kennison, Chair
Institutional Review Board

VITA

Patrick Wayne Calhoun

Candidate for the Degree of

Doctor of Philosophy/Education

Thesis: DECISION-MAKING STYLES OF ACTIVE-DUTY POLICE OFFICERS: A MULTIPLE-CASE OCCUPATIONAL STUDY

Major Field: Occupational Education

Biographical:

Education:

Completed the requirements for the Doctor of Philosophy/Education in Occupational Education at Oklahoma State University, Stillwater, Oklahoma in May, 2013.

Completed the requirements for the Master of Science in Management at Southern Nazarene University, Bethany, OK in 1994.

Completed the requirements for the Bachelor of Science in Interpersonal/Interorganizational Speech Communication at Oklahoma State University, Stillwater, OK in 1984.

Experience:

Area Chair, Criminal Justice, University of Phoenix, Rogers, AR 1994 – Present
Adjunct Faculty, Oklahoma Wesleyan University, Bartlesville, OK 2013 - Present
Police Officer, Tulsa, OK 1987 - 2011

Professional Memberships:

Phi Kappa Phi Collegiate Honor Society
Omicron Tau Theta
Kappa Delta Pi International Honor Society in Education
Eta Theta a Chapter of Alpha Phi Sigma, National Criminal Justice Honor Society

Name: Patrick Wayne Calhoun Date of Degree: May, 2013

Institution: Oklahoma State University Location: Tulsa, Oklahoma

Title of Study: DECISION-MAKING STYLES OF ACTIVE-DUTY POLICE OFFICERS: A MULTIPLE-CASE OCCUPATIONAL STUDY

Pages in Study: 102 Candidate for the Degree of Doctor of Philosophy/Education

Major Field: Occupational Education

Scope and Method of Study:

The purpose of this study was to describe the demographics and decision-making profiles of active-duty police officers, as well as any relationships that may exist among these variables, and the effects of training on decision-making styles. Specifically, the study used three different data sets to compare and describe the demographics and decision-making characteristics of police officers, general decision-making style patterns in the occupation, and effects of leadership training on decision-making styles. Two historical data sets containing GDMS styles of active duty police officers were cross-analyzed with new data obtained by administering a survey to existing active-duty police officer from one medium sized Oklahoma police department and one large sized Oklahoma police department. The survey instrument also contained demographic data. Officers were emailed the survey and provided with a hyperlink via a web-based survey provided by the instructional support specialist from the College of Education at Oklahoma State University.

Findings and Conclusions:

The findings of this research indicate that only two individuals within this sample of police officers reported preference for the avoidant decision-making style as their primary style. Because the avoidant decision maker is characterized by the desire to avoid making a decision and the police career is one where decisions could be life or death, there may be reason to eliminate those with the avoidant decision-making style from the pool of applicants.

What is quite evident from this research is that the overwhelming majority of active-duty police officers possess the *rational decision-making style as their dominant style.* This supports the hypothesis that there is a primary decision-making style within the career of policing. This is the first evidence of occupational patterning in decision-making styles observed by this researcher.