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Pre-employment Polygraphs and Ohio Law Enforcement Officers' Perceptions of Police Misconduct

Peter Thomas Piraino
Walden University

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Walden University

College of Social and Behavioral Sciences

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Peter Piraino

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Abstract

Pre-employment Polygraphs and Ohio Law Enforcement Officers' Perceptions of Police

Misconduct

by

Peter T. Piraino

MA, Governors State University, 1986

BS, Western Illinois University, 1978

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy and Administration

Walden University

November 2017

Abstract

Despite convincing evidence of the polygraph instrument's lack of scientific validity and reliability in assessing deceptiveness in individuals, public-sector organizations in the United States continue to use the polygraph examination as a pre-employment screening tool. In addition to its lack of acceptance in the scientific community, little is known about the effectiveness of polygraph examinations, given as part of pre-employment screening, in predicting future misconduct in law enforcement officers. Two theoretical frameworks, Baumgartner and Jones' punctuated equilibrium model of policy change and Alvesson and Spicer's theory of functional stupidity, provided the theoretical foundation for this study. The purpose of this correlational study was to investigate the relationship between use of the pre-employment polygraph and officers' perceptions of police misconduct, which is a suspected precursor to actual future misconduct. Survey data were acquired through a convenience sample of 190 Ohio police officers. Data were analyzed using logistic regression. Findings revealed no statistically significant relationship between the pre-employment polygraph examination and officers' perceptions of police misconduct. The findings of this study begin to erode conventional thought that there are only positive aspects of the pre-employment polygraph. Law enforcement leaders and public policy makers such as police chiefs, county sheriffs, and local government administrators may benefit from this study. As a potential for positive social change, this study provides public policy makers with empirical data, as opposed to reliance on conventional wisdom and anecdotal evidence, for informed decision making about use of the pre-employment polygraph in public-sector hiring.

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Dedication

This work is dedicated to those employees and prospective employees of public agencies whose lives have been affected by a pre-employment polygraph examination.

Acknowledgements

John Adams was quoted as saying that scholars are made alone, and sober. While I might agree with the latter part of this assessment, I take issue with the first part. Colonial times aside, there are countless folks in today's world who contribute, in large and small ways, to the making of an academic scholar. My scholarship, and this dissertation, for instance, could not have been completed without the unfailing support of scores of colleagues, friends, and family through a 4-year journey which at times hit peaks and valleys of seemingly insurmountable proportions. I hardly know where to begin to say thank you to all who took an interest in my successful completion of this endeavor.

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Chapter 1: Introduction to the Study

In this study, I examined the effectiveness of polygraph examinations when used by public-sector organizations as a preemployment screening tool. Despite widespread debate regarding the general validity and reliability of polygraph results (Iacono & Lykken, 1997), and the controversial and potentially invasive practice of its use in the prescreening of public employees (Iacono, 2008), its use remains ubiquitous throughout the U.S. public-sector. Officials in public agencies seem to accept that polygraph screening enables the successful elimination of deceptive job candidates as evidenced by its continual widespread use throughout the United States.

This study potentially affects many public-sector applicants and employees who are subject to polygraph testing in order to either gain or retain employment with their agencies. The effects of an erroneously failed polygraph examination are far reaching for applicants seeking to gain a public-sector position (Wise & Charvat, 1990). A falsely failed polygraph examination may also hinder an applicant's prospects of future public employment. Conversely, the effects of a falsely passed polygraph examination can have dire consequences for public agencies as unwanted applicants may gain employment.

While there is an abundance of literature on the validity and reliability of the polygraph instrument itself (Palmatier & Rovner, 2015), knowledge is sparse, according to my review of the literature, about its effectiveness when used as a preemployment screening tool. Furthermore, research establishing a connection between an organization's choice to use the polygraph in preemployment screening and employee success is practically nonexistent. Lacking knowledge about the effectiveness of

polygraphs in screening prospective employees, public-sector administrators may not make fully-informed decisions regarding whether to use a polygraph as a prescreening tool, and if so, how to interpret a result.

This chapter provides an overview of the background of the polygraph in the public-sector hiring process, the problem inspiring the study, the study's purpose, its theoretical foundation, the research questions, and the assumptions and limitations.

Background

In response to decades of questionable ethical practices in the polygraph industry, the U.S. Congress, in 1988, passed the Employee Polygraph Protection Act (EPPA). This law significantly curtailed private sector employers' ability to use polygraph tests to screen job applicants. However, the law exempted public-sector employers, which is one factor accounting for why public agencies have become increasingly reliance on polygraph examinations as part of their hiring processes (Barnhorn & Pegram, 2011). Today, hiring managers in many U.S. federal, state, and local public agencies use the polygraph examination to screen for sensitive positions (Iacono, 2008).

In the law enforcement profession, the use of the polygraph for prescreening of prospective officers and agents is commonplace. According to the American Polygraph Association (2014), 62% of police departments nationwide give a polygraph examination as part of the selection process of officers. This significant percentage seems to indicate an elevated level of confidence by law enforcement agencies in the accuracy of polygraph examination results despite a body of research indicating a lack of acceptance

of the polygraph instrument in the scientific community (Iacono, 2008; Iacono & Lykken, 1997; Offe & Offe, 2007).

A growing number of researchers view a pre-employment polygraph examination to be invasive in nature (Barnhorn & Pegram, 2011). Unlike a specific incident-related polygraph examination, such as one administered to a criminal suspect in which the questions asked are tightly focused on whether the suspect was involved in a specific crime, a preemployment screening polygraph includes questions that are far afield of specific incidents. A polygraph operator is generally given leeway to explore many facets of the examinee's personal, as well as professional, life (Moore, 2014). According to critics, this leeway enables intrusive and irrelevant questioning (Cumming, 2007). This is arguably the reason why the U.S. Congress, through the Employee Polygraph Protection Act of 1988, outlawed preemployment polygraph testing in the private sector.

The validity and reliability of the polygraph instrument has been challenged in the scientific community throughout the polygraph's history (Palmatier & Rovner, 2015). Whether the instrument can consistently detect lies is a main point of contention. However, another major criticism toward the polygraph field is the potential for polygraph examiners to inflict psychological abuse on examinees (Kleinman, Faley, and Denton (1990). The perception of potential for abuse is magnified when the polygraph examination is administered to noncriminal subjects, such as in an employment screening application (Handler, Honts, Krapohl, Nelson, & Griffin, 2009), wherein wide latitude to explore personal information is afforded the examiner. Many experts in the field, thus, view polygraph examinations to be a questionable testing method for screening out

deceptive applicants from employment consideration and are unsure about the effectiveness of such examinations. Yet, research directly addressing these questions is minimal, based on my review of the literature.

Problem Statement

A great deal is known about the underlying theoretical basis of the polygraph. It is understood that the polygraph instrument is designed to measure involuntary bodily responses to external stimuli (Ben-Shakhar, Garner, Iacono, Meijer, & Verschuere, 2015). There is also some knowledge regarding the application of the polygraph in the public-sector hiring process (Horvath, 1993; Pogarsky & Piquero, 2004). I found that little is known, however, about the use of such testing in a law enforcement hiring setting. The question of whether officers who have successfully passed a polygraph as a condition of preemployment differ in their perceptions of officer misconduct from officers who have not successfully passed a polygraph seems to be unresearched. While it is clear that an officer's perception of misconduct correlates to actual acts of misconduct (Kutnjak Ivkovic, 2005; Moore, 2009; Pogarsky, & Piquero, 2004), what is not clear is whether an officer's perception of misconduct correlates to the passing of a preemployment polygraph examination.

Certain public-sector employment applicants in the United States are continually subjected to polygraph examinations as part of preemployment screening (Handler et al., 2009) despite convincing evidence that such examinations have questionable validity and demonstrated unreliability (Iacono & Lykken, 1997; Lewis & Cuppari, 2009; Saxe & Ben-Shakhar, 1999). Law enforcement agencies have traditionally used preemployment

polygraph examination results as a tool for assessing the potential for future ethical behavior in officers (American Polygraph Association, 2015; Forrer, Mino, & Ehart, 2008). The problem underscoring this study is that public agencies that, without question, accept preemployment polygraph examinations as effective may be subjugating their applicants to a potentially invasive process bearing unsubstantiated results.

Purpose of the Study

The purpose of this quantitative study was to fill the gap in knowledge about whether the polygraph examination, given as a law enforcement preemployment screening tool, effectively eliminates candidates who may be susceptible to higher rates of police misconduct. In this study, I assessed the perceptions of police misconduct among Ohio law enforcement officers who took a polygraph as a condition of employment versus officers who did not. The overarching question asked whether there are differences in perceptions of police misconduct between officers who take the polygraph as a condition of employment and those who do not. If a relationship can be identified between preemployment polygraph screening and perception of police misconduct, policy makers may draw conclusions as to the ability of the polygraph examination to successfully identify candidates susceptible to future unethical behavior.

Research Questions and Hypotheses

The overarching question for this study was whether there are differences in perceptions of police misconduct between officers who take the polygraph as a condition of employment and those who do not. Following are my primary research questions and their corresponding hypotheses:

Research Question 1 and Hypothesis 1 (Null and Alternative)

RQ1. Do law enforcement officers who took a polygraph examination as a condition of employment experience a greater level of intolerance for police misconduct, after controlling for educational level, tenure, and rank?

H_01 . There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's level of tolerance for police misconduct, after controlling for educational level, tenure, and rank.

H_A1 . Officers who took a polygraph examination as a condition of employment experienced a greater level of intolerance in their officers for police misconduct, after controlling for educational level, tenure, and rank.

Research Question 2 and Hypothesis 2 (Null and Alternative)

RQ2. Is there a relationship between an officer taking a polygraph examination as a condition of employment and an officer's opinion on the appropriate and expected discipline for police misconduct, after controlling for educational level, tenure, and rank?

H_02 . There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's opinion on the appropriate and expected discipline for police misconduct, after controlling for educational level, tenure, and rank.

H_A2 . There is an association between an officer's taking of a polygraph examination as a condition of employment and an officer's opinion on the appropriate and expected discipline for police misconduct, after controlling for educational level, tenure, and rank.

Research Question 3 and Hypothesis 3 (Null and Alternative)

RQ3. Is there a relationship between the use of the polygraph examination in an officer's hiring process an officer taking a polygraph examination as a condition of employment and an officer's willingness to report police misconduct, after controlling for educational level, tenure, and rank?

H_03 . There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's willingness to report police misconduct, after controlling for educational level, tenure, and rank.

H_A3 . There is an association between an officer's taking of a polygraph examination as a condition of employment and an officer's willingness to report police misconduct, after controlling for educational level, tenure, and rank.

Theoretical Foundation

The theoretical base for this study was Baumgartner and Jones' (1993) theory of punctuated equilibrium (PET). This theory explains an organization's inclination for stasis which is punctuated by decisive, infrequent shifts in policy and procedures (Baumgartner, Jones, & Mortensen, 2014). According to Baumgartner and Jones, an organization's equilibrium and forward movement is affected by this interaction of stasis and sporadic punctuated change. PET is helpful in explaining the roles that stasis and crisis play in public policy making.

In their analysis of public policy cases over time, Baumgartner and Jones (1993) established several things about organizational policymaking. First, they found that organizations typically experience extended periods of stasis punctuated by leaps of

change as issues emerge. Second, they found that the conservative nature of American political institutions tends to breed the status quo as opposed to measured, well-informed change in organizations. Third, they found that the tendency toward punctuated equilibria is exacerbated by the structure of U.S. political institutions. Sabatier & Weible (2014) expounded on the nature of these institutions as having been "...conservatively designed to resist many efforts at change and thus to make mobilizations necessary to overcoming established interests" (p. 62). Sabatier and Weibles' characterization of political institutions captures the essence of how PET might explain an organization's inclination for stasis.

As a supplement to PET, I drew upon Alvesson and Spicers' (2012) seminal theory of functional stupidity. Alvesson and Spicer challenged the widespread assumption that organizations only benefit from positive cognitive capacities. Defining functional stupidity as an organizational "...absence of reflexivity, a refusal to use intellectual capacities in other than myopic ways, and avoidance of justifications..." (p. 1194), they proposed that functional stupidity can have both positive and negative effects on an organization in terms of employee certainty on the one hand and dissonance on the other. Moreover, functional stupidity is exemplified by an organizational avoidance of substantive reasoning in anything other than the narrowest ways (Alvesson & Spicer, 2012).

Functional stupidity theory complements PET in shedding light on possible reasons for organizational stasis, an underlying theme in this study. Additionally, Alvesson and Spicer (2012) outlined well the need for further research in the theory of

functional stupidity, particularly how it might play out in various organizational settings, including ones "...where the contribution to the social good is disputed..." (p. 1215). To this end, law enforcement agencies are one such setting that may illustrate functional stupidity theory.

PET informed my development of the research questions in this study regarding possible connections between preemployment polygraph screening and misconduct issues in law enforcement agencies. In seeking to understand the effectiveness of polygraph testing in an employment setting, I also wanted to examine the tendency of law enforcement agencies to remain in stasis, as suggested by PET (Baumgartner & Jones, 1993). Viewing these questions through the lens of PET enables better understanding of the status quo position taken by a considerable number of U.S. law enforcement agencies regarding preemployment polygraph screening.

While PET offers an explanation as to how law enforcement agencies tend to gravitate toward stasis in preemployment polygraph screening, Alvesson and Spicer's (2012) theory of functional stupidity offers possible answers as to why this is so. Alvesson and Spicer posited that stupidity may be systematic and ubiquitous in organizations. This is not to say that the existence of functional stupidity necessarily results in negative outcomes. In fact, Pfeffer and Sutton (2006) argued that most organizations adopt their policies based on accepted wisdom completely lacking in evidence. In this study, functional stupidity theory may lend credence to the perception that law enforcement agencies base their continual support of preemployment polygraph screening due to the accepted wisdom (in the law enforcement field but not necessarily in

the scientific community) that polygraph results are valid. Chapter 2 has more detailed analyses of PET and the theory of functional stupidity, and how they intersect to provide a theoretical frame to this study.

PET addresses the core of the overarching question of the study: why police organizations continue to use the polygraph in a pre-employment screening capacity despite convincing evidence of the polygraph's fallibility in consistently detecting deception. The phenomenon connecting this study to PET is the reluctance of law enforcement administrators to abandon an arguably flawed procedure such as the polygraph examination in their hiring processes. Instead, many continue the path of the status quo while apparently ignoring evidence that a contrary action may be warranted. Thus, these administrators contribute to organizational stasis by clinging to an ostensibly obsolete procedure.

Likewise, the theory of functional stupidity informed the study's approach in that the research questions challenged the conventional wisdom relied upon by public administrators who continue to use the polygraph as a pre-employment screening tool with scant evidence of its effectiveness. The reliance upon conventional wisdom, as opposed to informed decision making, is a core component of functional stupidity within organizations. This study employed the theory of functional stupidity as a lens through which we might understand the phenomenon of public administrators steadfastly adhering to the status quo.

Nature of Study

Quantitative methodology was appropriate for this study given the narrow focus of the research questions. A primary thrust of this study was to measure the relationship between variables, and quantitative research best served this purpose. Creswell (2009) posited that quantitative research examines variable interaction and draws conclusions about their relationships. Additionally, cross-sectional designs have proven to be ideal for investigating relationships between variables where establishing causal relationships is not a factor of the study (Frankfort-Nachmias & Nachmias, 2008). As this study explored relationships between a law enforcement agency's use of the polygraph in the hiring process of their officers (independent variable) and the perception of police misconduct in officers (dependent variable), conclusions were drawn regarding the effect the pre-employment polygraph examination has on officers, and the effectiveness of the polygraph examination in the hiring process.

In this study, the independent variable was the law enforcement agency's use of the polygraph examination in their hiring process of officers; specifically, whether it is part of their officer hiring process. The dependent variable was perception of police misconduct in law enforcement officers. There are several covariates which were controlled for in the data analysis such as educational level of officers, tenure of officers, and rank of officers. This study used a cross-sectional survey design and convenience sampling to gather data from various law enforcement officers in the State of Ohio regarding two primary factors:

1. Use of the polygraph examination in their hiring processes.

2. Their perception of police misconduct.

Participants in the study were municipal, township, and county law enforcement officer in the State of Ohio, selected through convenience sampling.

SPSS software analyzed the data collected after first cleansing the data using SPSS for missing values and reverse coding. To determine statistical dependence between the independent variable and dependent variable, the Mann-Whitney U-test, an independent samples t-test and logistic regression was employed.

Operational Definitions

Control Question Test (CQT): A type of polygraph examination that compares control questions to relevant questions for determining deception. The CQT may also be referred to as the Comparison Question Test (American Polygraph Association, 2015).

Employee Polygraph Protection Act of 1988: A federal law passed by the United States Congress greatly limiting private sector employers' authority to administer pre-employment polygraph examinations while exempting public employers from these constraints (Employee Polygraph Protection Act, 1988).

Educational level: The level of education achieved by law enforcement officers; categories include high school, some college, baccalaureate degree, and graduate degree.

Law enforcement agency: Any municipal, township, or county agency prescribed by law to employ sworn officers and enforce the law of their jurisdiction.

Law enforcement officer: Any sworn officer employed by a law enforcement agency to enforce the law, including municipal peace officers, township peace officers, and county sheriff's deputies.

Police misconduct: Unwanted activity on the part of law enforcement officers ranging from minor issues of integrity to abuse of authority and criminal activity ((Klockars, Kutnjak Ivkovic, & Haberfeld, 2006).

Polygraph: An instrument designed to measure involuntary bodily responses to verbal stimuli for detecting deception in an individual (American Polygraph Association, 2015).

Polygraph examiner: An individual formally trained in the operation of the polygraph instrument and the process of the polygraph examination (American Polygraph Association, 2015).

Polygraph examination: The process by which an examiner, utilizing a polygraph instrument, seeks to detect deception in an individual being tested (American Polygraph Association, 2015).

Preemployment screening tool: One of many procedures undertaken by an agency when hiring its employees including but not limited to testing, interviewing, polygraph examinations, medical examinations, and psychological evaluations.

Public-sector: The sector of organizations and agencies publicly funded that deliver public programs, goods, or services (Institute of Internal Auditors, 2011).

Public-sector hiring process: The selection process by which prospective public-sector employees are hired into their jobs.

Sensitive position: A public-sector job in which the employee, by nature of the job's duties, is exposed to certain materials deemed by the agency to be crucial to its

operation or entrusted with law enforcement responsibilities, thus requiring an elevated level of trust and confidence from the employee.

Specific incident polygraph examination: A type of polygraph examination focused on determining an examinee's truthfulness about his or her knowledge regarding a specific crime or incident (American Polygraph Association, 2015).

Assumptions

The primary assumption made in this study, supported by significant research (Handler et al., 2009; Iacono & Lykken, 1997; Lewis & Cuppari, 2009; Saxe & Ben-Shakhar, 1999), however not necessarily verified by this study, was the general fallibility of the polygraph instrument owing to its lacking validity and reliability in the scientific community. Therefore, it was also assumed that there is healthy debate among professionals in the law enforcement field regarding the overall efficacy of the polygraph examination as a method of lie detection. This point was further expounded in Chapter 2 of this study.

A second assumption was that law enforcement participants would understand nature and meaning of the study and the survey questions put forth to them in the data gathering phase. A third assumption was that law enforcement participants would respond with candidly the survey questions. A final assumption was that given my professional background and contacts in the profession, gathering data from participants would not present itself as an issue.

These assumptions involved the nature of the study, the role of the researcher, and the participants in the study. The primary assumption regarding the validity of the

polygraph instrument underpinned the entire study in that it illustrated the unstable scientific ground on which the instrument lies. As this study involved measuring the effectiveness of the polygraph examination in the public-sector hiring process, it is important to understand the existence of the debate over the polygraph's validity, reliability, and overall efficacy. The assumptions regarding the participants in this study were necessary in that validity of the data gathered depended on candid and honest disclosure by the participants.

Scope and Delimitations

In this study, I focused on law enforcement agencies in the State of Ohio including municipal police departments, township police departments, and county sheriff's offices. Specifically, I sought sworn law enforcement officers as participants for the study. They were surveyed primarily as to their departments' policies on the use of the polygraph in their hiring processes and their perceptions of police misconduct. While there are several types of law enforcement agencies in the State of Ohio, focus on municipal, township, and county agencies resulted in a level of uniformity of the participants, thus simplifying the data collection process.

A representative sample was drawn from the law enforcement agencies in Ohio. The sample was of sufficient size to allow inferences to be drawn about the participant population (Frankfort-Nachmias & Nachmias, 2008). The sample size reflected a large enough sample to obtain a confidence level of 95%.

As the sample for this study was a convenience sample drawn from participant law enforcement agencies in the State of Ohio, generalizability of the results throughout

the U. S. was not be possible. However, it was expected that the results would be generalizable to law enforcement agencies throughout the Ohio.

Generalizing the results of this study over public-sector organizations in general was not be possible as law enforcement agencies, being a subset of the public-sector, are not necessarily representative of the many several types of public-sector agencies staffing sensitive positions which require pre-employment polygraph screening.

While there are many types of law enforcement agencies in the State of Ohio, this study confined itself to police departments and county sheriff's offices. Absent from the study were federal law enforcement agencies. Federal law enforcement has been excluded for two reasons. First the exclusion avoids an unnecessary mixture of law enforcement personnel being studied. Studying both federal agencies along with county and local law enforcement agencies would have added nothing meaningful to the results; in fact, it only would have served to dilute the results and potentially provide an unnecessary confounding variable. Second, I saw little purpose in including the Ohio State Highway Patrol (OSHP) as an agency in this study despite their status as a bona-fide law enforcement agency. OSHP is a massive state-wide law enforcement agency whose various districts operate under a one central authority. Nonetheless OSHP, for the purposes of this study and by its design, would only count as one participant agency in the sample. Like the exclusion of federal law enforcement agencies in this study, any benefit derived from including the OSHP would have been outweighed by the possibility of adding an unnecessary confounding variable considering its size and centralized authority.

Limitations

The most obvious weakness in this study was the dependence upon participant law enforcement officer participants to be candid in their answers to the survey questions. Some participants may have found questions regarding misconduct issues confronting in nature, and may have downplayed the severity of any issues. Another limitation of the study was its cross-sectional survey design. This type of design was intended to capture law enforcement agencies' policies on pre-employment polygraph screening and officers' perception of misconduct. It cannot be presumed that these findings were representative of such policies at various times.

While this study's intent was to measure the effectiveness of the polygraph examination in the public-sector hiring process, it was not designed to address reasons *why* the polygraph may or may not be effective in such an application. The results were limited to the establishment of a relationship between the polygraph examination and officer success. Moreover, this study was designed to show correlation between independent and dependent variables—not causality. Reasons for the polygraph's effectiveness or ineffectiveness would be the subject of additional study.

Finally, while this study encompassed the use of the polygraph in the public-sector hiring process, it confined itself to law enforcement agencies as a participant population—a somewhat divergent subset of the overall public-sector. Therefore, generalizations made regarding the public-sector in general would not have been possible.

A potential for bias in this study resided in the participant's interpretation of the survey questions put forth to them. Specifically, as the survey asked for opinions regarding various police misconduct issues, the participants' personal definitions of police misconduct may have varied to a significant extent. Accordingly, it is important that all participants responded to these questions in like-minded fashion; that is, they must have shared the same definitions of several types of misconduct in order avoid invalid participant response data. To address this potential validity issue, I used a survey instrument which described various aspects of police misconduct in specific detail so as to standardize the definition for all participants.

The primary limitation that was addressed was the study's dependence upon the participants' survey responses to be candid in their survey responses. Creation of a high-quality survey questionnaire was essentially to reduce the impact of this limitation. To address issues of participant response accuracy, the use of an established survey instrument previously tested over several thousand participants served to standardize responses regarding various levels of officer misconduct.

This study went no further than addressing questions of effectiveness of the polygraph in the public-sector hiring process. It did not address the question of scientific validity and reliability of the polygraph instrument in pre-employment screening or any other legitimate application. It did not address perceptions of polygraph examinees or the impact of the results of polygraph examinations. This study also did not address directly the question of public interest versus individual privacy rights, although the spirit of this debate may have acted as an underlying theme in this study.

One of the general limitations of quantitative methodology is the narrow focus its research questions tend to generate (Frankfort-Nachmias & Nachmias, 2008). This limited, to some extent, the scope in which a topic can be studied. It relied heavily upon statistical analysis to answer the research questions, leaving little room for expansion and elaboration of questions based upon incoming data—such as might have been found in a mixed-methods study.

Significance of Study

Presently, public employers seem to blindly accept that the results of pre-employment polygraph examinations are valid and reliable (Barnhorn & Pegram, 2011). They do so in the face of a significant lack of research establishing such validity and reliability. As a result, public-sector employers continue the practice of pre-employment polygraph screening despite evidence of the instrument's fallibility, lack of validity, and overall inefficacy (Iacono, 2008). There is a gap in polygraph research that might otherwise answer the question of whether the instrument is effective in a pre-employment screening application. This study sought to close this gap in understanding and determine if the polygraph examination is effective as intended.

The results of this study had practical implications for the public employment sector including the federal, state, and local agencies that utilize the polygraph examination to screen job applicants during their hiring process. There is a presumption among many public-sector agencies that the polygraph examination is a reliable, efficient, and cost-effective means of screening applicants (Handler et al., 2009). By focusing on how police departments use the polygraph in the hiring of police officers,

this research filled a gap in understanding of the effectiveness of the polygraph when used in a pre-employment setting, providing insights into this understudied area of polygraph. The results of this research affect current and future public employees, whose jobs are sensitive in nature, thus requiring polygraph examinations.

We know much about the theory underlying the polygraph instrument and the extensiveness of the debate of the validity of this theory in the scientific community. We also know that the polygraph examination, besides its role in criminal investigation, has been used for many decades in pre-employment screening. It was first used in both the private and public-sectors; then, following the Employee Polygraph Protection Act of 1988 (EPPA), it was used primarily by government agencies (Lewis & Cuppari, 2009). What was lacking was information about its actual effectiveness in accomplishing its intention—to eliminate deceptive, and therefore undesirable, applicants from consideration. Presently, many policymakers simply presume the polygraph's effectiveness with no empirical data backing up this presumption. This study addressed this lack of knowledge directly, developing data that cast light on the level of effectiveness of a long-standing routine procedure.

This study was intended to empower the prospective public employee. For decades, certain public employees have been subjected to pre-employment polygraph screening, a procedure whose veracity is widely debated in the scientific community, without empirical evidence justifying the necessity of such a personally invasive procedure (Iacono & Lykken, 1997), with little or no recourse in the event of flawed

results. This study sought to begin a needed trend of research that empirically explores the results of the pre-employment polygraph procedure to determine if its use is justified.

This study may also have had impact on the larger question of public interest versus individual privacy. Traditionally, public-sector employers have placed great emphasis on protecting the integrity of their organizations, resulting in harsh screening of prospective employees (White, 2001). As a result, it has been commonplace that public employees are expected to sacrifice, to some extent, their personal privacy during the hiring process in exchange for the safeguards organizations deem necessary to remain secure.

Summary

Chapter 1 presented the problem of a lack of knowledge in the effectiveness of the polygraph examination when used as a pre-employment screening tool in the public-sector hiring process. This chapter also addressed the need for public-sector administrators to have the information necessary for informed decisions regarding the polygraph's use in the hiring process within their organizations. Presently there is no scientific basis for determining whether the polygraph examination is an effective tool for screening public-sector applicants. A considerable number of public-sector administrators continue to require pre-employment polygraph examinations for sensitive positions, notwithstanding convincing evidence of the questionable validity and reliability of polygraph results. This study proposes to explore the effectiveness of the pre-employment polygraph examination by examining relationships between pre-

employment polygraph screening in law enforcement agencies and perceptions of police misconduct in their newly-hired officers.

Chapter 2 focuses on a review of the literature centering on three primary areas within the topic of public-sector pre-employment polygraph screening: the polygraph's reliability, validity, and overall efficacy; the polygraph's use in the public-sector hiring process; and legal issues involving the polygraph's use in employment screening.

Chapter 2: Literature Review

Introduction

The purpose of this quantitative study was to explore the effectiveness of polygraph examinations in the public-sector hiring process. I sought to understand the relationship between the polygraph examination, given as a preemployment screening tool to law enforcement officers, and those officers' perceptions of police misconduct. Specifically, in the study, I focused on whether polygraph use by law enforcement agencies in the hiring process of officers relates to future officer misconduct.

As of 2014, 62 % of the law enforcement agencies nationwide use polygraph testing in the preemployment screening of their officers (American Polygraph Association, 2015). Yet, there is sparse knowledge, based on my review of the literature, as to how effective the polygraph examination is as a screening method in the hiring of law enforcement officers. For hiring managers in law enforcement agencies, the intent of the polygraph examination is to eliminate deceptive applicants from consideration and predict the potential for future unethical behavior (Horvath, 1993); however, it is unclear whether this outcome is being realized. The purpose of this study was to explore the polygraph as a preemployment screening tool in hopes of answering the question of whether there is a correlation between pre-employment polygraph screening and future ethical behavior in officers; thus, filling this gap of knowledge.

The problem statement noted in Chapter 1, where I questioned whether the polygraph examination, as a public-sector preemployment screening tool, effectively accomplishes its intent, guided my literature exploration. Initial literature searches of

various criminal justice, business, and dissertation databases on the topic of the polygraph and public-sector employment netted limited research on the polygraph in the employment screening process. Accordingly, I widened the literature search to include articles related to the efficacy of the polygraph in other applications, including criminal investigation. Within this literature, the debate among scholars involving the polygraph's fallibility emerged and became a central theme to the review.

I focused this literature review on the available knowledge as it related to polygraph use in the public-sector hiring process. At the heart of the issue is an ongoing debate involving how the polygraph examination screens public employees. This debate centers on the way prospective public employees are tested and which specific type of polygraph test is administered. Critics insist the polygraph can only be effective in specific-incident testing, where the incident in question is known to both examiner and examinee (Moore, 2014); they also assert that in employment screening, since the relevant questions put forth during the polygraph examination must be general in nature, this often results in broad ranges of questions, whereby the polygraph examiner has license to probe into various aspects of an examinee's personal life (Moore, 2014). Additionally, critics assert that the findings of non-specific-incident polygraph testing are not reliable and result in high rates of false positive and false negative outcomes (Moore, 2014; White, 2001). Thus, the nature of polygraph employment screening raises both practical and ethical issues.

Over the past 5 decades, researchers have questioned the scientific reliability of the polygraph in general (Iacono & Lykken, 1997), identified potential misuses of the

polygraph instrument (White, 2001), and challenged the sheer validity of its theoretical foundations (Iacono, 2008). However, a research gap exists in the use of the polygraph as a preemployment screening tool, especially in the exploration of relationships between the preemployment screening polygraph examination and later employee success on the job. This broad gap made challenging a focused review of research involving public-sector employees and their taking of a pre-employment polygraph examination.

I considered literature regarding the polygraph screening of law enforcement officer applicants. However, this literature was sparse at best. More predominant were studies involving the polygraph screening of public-sector employees in general. A common theme seen throughout the literature establishes a dividing line between the practitioner and the academic. It is noted in several studies that practitioners (those who routinely administer polygraph examinations) are generally proponents of the polygraph examination in the screening of employees (Palmatier & Rovner, 2015), while academics (those who primarily conduct polygraph research) tend to be more skeptical of the polygraph's ability to offer valid and reliable results on a consistent basis (Ben-Shakhar et al., 2015; Iacono, 2008).

With the overarching theme of this literature review being the use of the polygraph examination in the public-sector hiring process, I divided this chapter into several sections to best address specific areas of concern within the topic. Following a description of the search strategy, I address the theoretical foundation for the study. The main body of the literature review consists of an overview of research on three topics. First, I discuss the way the polygraph examination is used in the United States. Second, I

explored the literature regarding the validity and reliability of the polygraph, which accounted for a sizable portion of existing polygraph research. Third, I examined the federal and state laws and industry standards that are used to oversee and regulate the polygraph industry in the United States. Finally, there is a review of the literature that inspired my selection of a quantitative methodology for this study.

In the first major section of this literature review I explore the theoretical foundations underpinning the study: punctuated equilibrium theory (Baumgartner & Jones (1993), complemented by the theory of functional stupidity (Alvesson & Spicer (2012). Current research regarding these theories sheds light on potential explanations for organizational behavior: specifically, a law enforcement organization's continued use of the polygraph in the preemployment screening process despite convincing evidence of its fallibility and lack of scientific community support.

I divided this literature review into three major subcategories to best relate it to the topic of preemployment polygraph screening of law enforcement officers. In the first subcategory, I examined the two primary uses of the polygraph examination today, in criminal investigation and preemployment screening. This literature showed the stark differences in process and procedure between the two and illustrated the shortcomings of attempting to apply the same assumptions to both. The second subcategory addressed the validity, reliability, and overall efficacy issues related to the polygraph instrument and the polygraph examination in general. I particularly explored the Control Question Test (CQT) and the Concealed Information Test (CIT), two areas spawning great debate in the topic of polygraph examination (Meijer & Verschuere, 2015). The final subcategory

showed the myriad of legal aspects surrounding polygraph use, especially in the public-sector hiring process. Some of the issues addressed were the EPPA and regulation of the polygraph industry by the American Polygraph Association.

Literature Search Strategy

I conducted the literature search using Walden University Library databases including Thoreau Multi-Database Search, Academic Search Complete, and ProQuest Central. Additionally, I used the Pfeiffer Library of Tiffin University in Tiffin, Ohio, to access OhioLink to supplement full-text searches. I also used Google Scholar in the search for current literature. Additional databases including Business Source Complete, Dissertations & Theses, LexisNexis Academic, and ProQuest Criminal Justice were queried.

Key search terms used in the literature search were *polygraph*, *lie detector*, *hiring*, *job interview*, *police hiring*, *public-sector hiring*, *employment screening*, *pre-employment screening*, *police disciplinary action*, *federal government employment*, *police employment*, *civil service*, and *employment privacy*. I applied various combinations of these terms as well. They were *polygraph and hiring*, *polygraph and pre-employment screening*, *polygraph and police*, *polygraph and employment*, and *law enforcement and hiring*.

The years for the collected literature spanned between 1961 and 2015, with most of the articles having been published in the last decade. The older literature used was seminal in nature. I found approximately 70 articles in the literature search; roughly, 60 of these were peer-reviewed. Non-peer review sources were extracted mostly from .org

and .gov websites. For example, some sources were derived from www.polygraph.org, the website of the industry-recognized national organization providing direction and guidance to the polygraph industry in the United States.

Perhaps the greatest challenge of this literature review was the scarcity of research on the specific topic of this study—the effectiveness of the polygraph examination in the public-sector hiring process. Most of the literature addressing the polygraph is related to the validity, reliability, and accuracy of the instrument itself. Largely ignored in the literature is the polygraph as a hiring tool for public organizations. There is great focus in the literature on the accuracy of the Control Question Test (CQT) that spawns a larger debate regarding the overall efficacy of the polygraph examination in general. However, the focus of this literature is on whether polygraph results achieve an acceptable level of validity; hence the question: Does the polygraph measure what it intends to measure? Nevertheless, the discussion of the polygraph's overall validity cannot be disregarded in any meaningful study having the instrument as a centerpiece. As a result, a significant amount of literature in this review relates to the topics of validity, reliability, fallibility, and overall efficacy of the polygraph examination.

Furthermore, the passage of the Employee Polygraph Protection Act (EPPA) of 1988 produced a flurry of literature at that time focusing on employee rights in both the private and public-sectors. However, nearly three decades since the EPPA's passage, interest in employee rights regarding pre-employment polygraph screening, at least from a research standpoint, has waned. This is likely due to the EPPA effectively ending the compelled polygraph examination in the private sector workplace. As public-sector

employers and employees remain subject to the various state laws regulating workplace polygraph use, and, as federal employees are completely exempt from EPPA restrictions, little attention has been given in the literature over the past 20 years to the polygraph's use in the hiring process of public-sector employees.

Theoretical Framework

Punctuated Equilibrium Theory

The primary theory underlying this study was the theory of punctuated equilibrium (PET) as a social policy process theory applied to organizations and public policy. Borrowed from evolutionary biology, PET, as developed by Baumgartner and Jones (1991), explains how organizations tend to remain in stasis until punctuated by rapid shifts in policy that usher in organizational change. These punctuated shifts explain patterns of change within various entities such as corporations, government agencies, and nonprofit organizations.

Refined by paleontologists Eldredge and Gould in 1972, PET (as applied to evolutionary biology) espouses that, during evolution, biological species develop and then remain in stasis for extended periods of time until this equilibrium is disturbed by rapid events that punctuate the stasis. Applying this theory to today's public, nonprofit, and private organizations with respect to social and institutional change, Baumgartner and Jones (1993) posited that stasis is the norm for most organizations. However, there are periods when change occurs through punctuated shifts in policy and procedures, usually in reaction to internal or external events. These drastic changes occur mostly out of organizational necessity.

Baumgartner and Jones (1991) retooled the evolutionary biological theory of punctuated equilibrium into a social theory with public policy implications. They suggested that organizations and their policies and operational procedures tend to remain in stasis until punctuated by sudden, drastic shifts. This stasis, they explained, is due to several factors including vested interests, lack of vision by decision makers, and the constraints of institutional culture. Only incremental change occurs during periods of stasis. Breaking this stasis are internal or external events of such great consequence that ignoring the event would not be feasible and of dire consequence for the organization (Gersick, 1991).

In social theory, PET has several major theoretical propositions. These propositions can be applied not only to institutions but to public policy areas such as gun control and environmental policy. First, social systems, while they exist in stasis for extended periods, are punctuated by sudden and drastic shifts in policy. Second, there are several causes attributed to institutional stasis including organizational culture, decision makers' bounded rationality, and vested interests of internal and external partners. Finally, the radical and sudden changes within social systems are the result of changes in some of these factors.

PET informed this study by explaining the phenomenon central to this study—a public organization's continued reliance upon the polygraph examination to screen its applicants despite convincing evidence of the instrument's potential fallibility (Baumgartner, Jones, & Mortensen, 2014). The overarching theme in this study asked whether the polygraph examination is effective in its endeavor to eliminate deceptive

applicants in the hiring processes of public organizations. This theme informed the larger question of why public organizations continue to rely on the polygraph examination despite its scientifically questionable reliability. PET explains this organizational phenomenon in that it illustrates how stasis and complacency tend to mitigate organizational momentum. The often-heard organizational adage “but we’ve always done it this way” is the salient theme of this narrative.

It is reasonable to conclude, considering PET, that organizations often pursue the path of least resistance in their policies and procedures. This gives rise to the organizational stasis purported by PET. The research questions generated by this study sought to challenge the stasis of public organizations that rely on the polygraph examination in the pre-employment screening process. They challenged whether this continued use and reliance upon the polygraph examination was an effective personnel screening tactic, or if organizational stasis has stunted advancement in this area.

This study attempted to apply PET, normally reserved for explanations of public policy on a large scale, to a small segment of the public-sector—local and county law enforcement agencies in the State of Ohio (Jones & Baumgartner, 2012). Some studies have successfully applied PET to similarly small applications. For example, Kwon, Choi, and Bae (2013) examined the effects of PET on county emergency management policy in Florida. In their cross-sectional study of 65 Florida counties, kurtosis analysis was used to determine that counties with reformed governments and innovative managers experience higher levels of punctuation than those that do not have these factors. Similar

studies have applied PET to various segments of the public-sector (Feder-Bubis & Chinitz, 2010; Schneider, 2006).

Since Baumgartner and Jones (1991) retooled PET from a biological theory to a social policy process one, several studies have reinforced their work. Prindle (2012) and Jones and Baumgartner (1991) agreed that PET can explain the ebb and flow of public policy stasis and change. However, Givel (2010) challenged this idea by pointing out several significant differences between biological PET and adapting it to explain policy process change. Some of these stark differences included time frame for change, external disturbances igniting disturbance of equilibrium, and patterns of change. Yet, other researchers have successfully applied PET to specific public venues, such as changes in U. S. Supreme Court precedent citations (Robinson, 2013).

Romanelli and Tushman (1994) formally tested the punctuated equilibrium model of organizational change and found that organizational transformations occurred largely in rapid and discontinuous fashion. Until their study, PET had been put forth to explain organizational change while supporting research had been lacking. They further found that accumulated small strategy changes did not lead to organizational transformation; change in the chief executive officer position, however, did contribute significantly to change in the organization.

By contrast, several studies have revealed that in various aspects of American industries, no punctuated shifts had occurred despite organizational efforts to bring them about (Givel, 2010). It has been argued that the significant differences between the biological PET and PET as applied to public policy, including time frames for change,

equilibrium disturbance, how change is analyzed, and change patterns, inhibit the application of PET to public policy (Givel, 2010; Prindle, 2012). This argument concludes that borrowing theory from one discipline to another can result in degradation to the extent that the theory is inapplicable to the new discipline.

Others have successfully applied PET to public policy change. Robinson (2013) examined PET as it might apply to the United States Supreme Court and its effect on legal policy. While evidence exists to show that PET can describe patterns of change in public policy, there is little knowledge as to how it might apply to legal policy change. To address this gap, Robinson examined Supreme Court precedent citings to show punctuated equilibrium effects in legal policy change. He found convincing evidence of punctuated equilibrium processes behind legal policy change affected by the Supreme Court. Also, in an earlier study, Gersick (1991), building on Baumgartner & Jones's (1991) work, compared models from six domains—individuals, groups, organizations, science history, biological evolution, and physical science—applying the concepts of punctuated equilibrium to each and gleaning commonalities.

Functional Stupidity

As a complement to PET in this study, the theory of functional stupidity, developed by Alvesson and Spicer (2012), proposes that organizations, through what they term as “stupidity management,” maintain control of their employees, and to a larger extent, their organizations as a whole. The theory of functional stupidity complements PET in that, while PET may explain the central phenomenon of this study, functional stupidity theory may serve to expound on this explanation, illustrating underlying causes

of the organizational behavior. In this study's context, if PET explains law enforcement organizations' tendency toward stasis in their continued use of the polygraph examination to screen applicants, then functional stupidity may offer an explanation as to why.

Functional stupidity theory suggests that organizations maintain their stability through the presence of stupidity management designed to marginalize and stifle employee rebuttal. The primary proposition is that organizations place, intentionally or not, severe restrictions on the cognitive capacities of its personnel that limit the mobilization of these capacities. Functional stupidity manifests itself in a lack of reflexivity and in myopic applications of intellectual capacities (Alvesson & Spicer, 2012). Doubt is marginalized and communication pathways are blocked because of stupidity management. Accordingly, organization members' internal narratives are bent toward positive ones, thus keeping the organization functioning smoothly.

Both positive and negative outcomes may ensue because of functional stupidity (Alvesson & Spicer, 2012). A degree of certainty for both members and the organization may inhere. On the other hand, organizations risk a sense of dissonance among membership that results in low morale and counterproductive organizational dynamics.

Morrison (2011) recognized that employees of organizations are continually subject to decisions regarding whether to speak up in the face of potentially useful and beneficial ideas of their own. Recently, there has been a flurry of study, including Alvesson and Spicer's (2012) seminal work on the theory of functional stupidity, involving the factors that tend to increase and enhance employee "voice" in organizations. However, Morrison called attention to the unresolved issues for which this

research has not yet accounted. The concept of employee voice behavior in organizations coincides with the theory of functional stupidity in that it explains the workings behind the theory, potentially adding credence to it.

Alvesson and Spicer's (2012) work on functional stupidity remains largely unchallenged. In fact, their seminal work is an attack on the massive body of existing knowledge surrounding organizational advancement and how an organization thrives based on its knowledge. They boldly challenged the status quo by offering a counter-theory (functional stupidity) as an alternative to the conventional assumptions made by organizational researchers about how organizations use cognitive resources to move forward. While some researchers referred to the concept of functional stupidity in their work (Gaddefors, Johansson, Lundberg, & Rossell, 2013), the theory suffers from a lack of empirical study to support it.

Summary of Theoretical Framework

PET and the theory of functional stupidity provided a lens through which to view the overarching problem of this study: why law enforcement agencies continue to employ the polygraph examination as a pre-employment screening tool despite evidence of its fallibility. These theories may offer predictive generalizations for this organizational behavior. However, the research questions stemming from these theories need measurable variables by which to address the questions.

The variables in this study (polygraph use as the independent variable, and perception of officer misconduct as the dependent variable), once operationalized, served to answer the research questions regarding the relationship between polygraph use in the

hiring process and the potential for subsequent officer misconduct. Answering the research questions may shed light on the overarching problem. This study was not exploring a causal relationship between the variables. However, it is reasonable that if a correlational relationship between the independent and dependent variables was established, deductions may be drawn regarding the effectiveness of the polygraph examination as a pre-employment screening tool. Such deductions may allow a clearer picture of the overarching question in this study, and set the tone for future study in exploration of the problem.

Brief Historical Perspective

Skolnick (1961), in an early discussion on the topic, outlined the theory of the polygraph examination, which to this day is the heart of ongoing debate in the scientific community. Simply stated, the act of lying invokes a mental conflict, which induces anxiety, which results in a measurable physiological change in the human body. The polygraph instrument measures this physiological change through the monitoring of three involuntary responses: blood volume changes, changes in respiration, and changes in galvanic skin response (sweating). He illustrated two main assumptions upon which the theory is dependent. First, that a relationship exists between lying and anxiety states. Second, that a relationship exists between anxiety states and physiological changes in the body. These assumptions are not made without challenge, especially the first assumption. Skolnick posited that lying may conceivably invoke a plethora of emotional states, including guilt, fear, sadness, excitement, humor, satisfaction, and boredom, to name a few, and any combination of them. Additionally, pathological liars are unmoved

by their lies or simply believe in them. The assumptions Skolnick identified have given rise to studies that illustrate the importance of the examiner's role in the polygraph examination—that the polygraph instrument is wholeheartedly dependent upon the skill and experience of the examiner for its accuracy in detecting deception.

For example, Mann, Vrij, and Bull (2004) determined that police officers' level of experience in detecting lies directly correlates to success in the detection of deceptive criminal suspects. In an experiment involving 99 police officers viewing videotapes of suspect interviews, accuracy in the officers' judgments was positively correlated with their experience and with cues given by the suspects in the telling of their story. Lewis and Cuppari (2009) also highlighted the importance of the role of the polygraph examiner in the administration of the polygraph examination and the interpretation of the subsequent results. They posited the instrument itself does not detect lies; rather, it measures involuntary bodily responses to verbal stimuli. Because of this, the examiner plays a vital role in subjectively interpreting the results—particularly correlating specific involuntary bodily responses to precise verbal stimuli (Lesniak, 2014).

Until the mid-20th century, law enforcement agencies used the polygraph examination primarily as a tool in the investigation of criminal activity to detect deception in criminal suspects, victims, and witnesses (White, 2001). Beginning in the 1960s, the polygraph examination expanded into both private and public-sector employment screening processes. In 1988, reacting to a public backlash of claims of impropriety, coercion, and false accusation, the U. S. Congress passed the Employee Polygraph Protection Act (EPPA). This act made it illegal for private employers to use

the polygraph examination to screen prospective employees, effectively eliminating the polygraph from the private sector. However, the Act exempted public-sector employers, such as federal, state, and local law enforcement agencies from this restriction (Employee Polygraph Protection Act, 1988). As a result, law enforcement agencies nationwide continued their employment of the polygraph as a hiring tool, using it to eliminate deceptive applicants. They did this even though, since its inception in the early 20th century, the polygraph instrument and its accuracy in a variety of uses has been the subject of seemingly unending debate (White, 2001).

Although hardly the first researchers to challenge the validity of polygraph results, Iacono and Lykken's (1997) pivotal work attempted to determine an overall sense of the scientific community as to its acceptance of polygraph examination results, particularly in terms of scientific validity. They surveyed two groups of scientists from relevant disciplines--psychophysiological research and general psychology. They found that most scientists felt that there was no theoretical basis for the field of polygraph, that claims of high validity could not be sustained, that easily learned techniques could defeat the examination, and that polygraph examination results should be highly suspect before their admission as evidence in a court of law.

Five years later, the National Research Council (NRC) (2003) published its comprehensive report for the U. S. Department of Energy (DOE) on the efficacy of polygraph screening of DOE employees (thoroughly examined later in this review). While the report focused only on DOE, scholars in polygraph research circles viewed it as a definitive work that outlined the shortcomings of pre-employment polygraph

screening. The NRC determined that the polygraph in a pre-employment screening application only achieved an 81% to 91% accuracy score under the best of circumstances. This meant that false results, both positive and negative, would occur on average in about 15% of cases. Several later works supported the NRC findings, including Vicianova's (2015) comprehensive study on the history of lie detection.

The American Polygraph Association (2015), in their Model Policy for Law Enforcement/Public-Service Pre-Employment Polygraph Screening Examinations, defined a distinction between two types of polygraph examinations: diagnostic examinations, or those conducted when a known allegation exists such as in a criminal investigation; and screening tests, or those conducted when there is no known allegation such as in a pre-employment testing application. They further suggested that screening polygraph tests may cover a multitude of issues of concern to an employer.

Justification for the Study

The topic of polygraph examination used as a pre-employment screening tool for public-sector employees, has experienced long-standing contention among researchers. Handler et al. (2009), along with White (2001) and Cumming (2007) identified several deficiencies of the pre-employment screening polygraph examination, such as the false sense of security in its results it tends to embolden, and its susceptibility to countermeasures. Yet, law enforcement agencies nationwide seem undeterred in their reliance on the polygraph to screen applicants. Moreover, there is no research that links a law enforcement agency's polygraph use in the hiring process to the future professionalism of its officers.

Along this line, there is sparse research establishing success factors for newly-hired law enforcement officers. However, White's (2008) study determined that key factors for police academy success were age, race, gender, and reading level; unimportant factors were military experience, college education, and residency. White (2008) did not include the pre-screening polygraph examination as a variable in his study. In addition, Fuss and Snowden (2004) determined that the background investigation is the most significant indicator of officer success. Few studies offer a grounded explanation of what hiring factors make an officer successful; and no study found explores the polygraph's impact on an officer's likelihood of professionalism on the job.

While there is an abundance of studies describing the polygraph's overall efficacy (Ginton, 2015; Jaworski, 2004; Palmatier and Rovner, 2015), few have attempted to evaluate the effectiveness of the instrument when used as a pre-employment screening tool. And none found have sought to measure the effect of the polygraph examination against the level of misconduct issues in newly hired law enforcement officers. While there is significant discourse on the polygraph's validity and reliability, lacking is an understanding of possible relationships between the giving of the polygraph examination to job applicants and the success rate of those applicants (Tomash & Reed, 2013). Forrer et al. (2008) hypothesized a correlation between the polygraph and law enforcement officer termination; however, their work was preliminary in nature and further research bringing the study to fruition was not completed.

We know that law enforcement agencies nationwide rely on the polygraph examination in their hiring processes to eliminate deceptive candidates from

consideration (Mark, 2014; Vicianova, 2015). In fact, many agencies accept the results from pre-employment polygraph screening of their officers with an elevated level of confidence (Horvath, 1993). However, they do this seemingly without consideration of the lack of support shown in the scientific community for the general accuracy of polygraph results. Proponents and opponents of the polygraph examination continually debate the polygraph examination's general validity and reliability; studies to this effect saturate the literature—Fiedler, Schmid, and Stahl (2010), Iacono and Lykken (1997), and Lewis and Cuppari (2009), to name a few. While there is hardly a consensus among scholars with respect to the overall validity of the polygraph instrument (Ben-Shakhar et al., 2015; Elaad, 2014; Palmatier & Rovner, 2015), there is even less information available for law enforcement executives to judge the efficacy of the polygraph examination in the hiring process that would enable them to make informed decisions about its use as a pre-employment screening tool (Moore, 2014; White 2001).

Despite the difference of opinion, there is general agreement among researchers (Konieczny, 2014; Lewis & Cuppari, 2009; Moore, 2014) that stark differences exist between specific-incident polygraph testing (commonly done in criminal investigations) and pre-employment polygraph screening. Cumming (2007) found that among the primary differences was the false sense of security given by the pre-employment screening polygraph against false positive and false negative results. Expounding on this shortcoming, Fuss and Snowden (2004) identified the background investigation as the most significant factor of police success once on the job. Yet, many law enforcement

agencies rely more on the polygraph to screen their applicant than on background investigations (Cumming, 2007).

Major Themes in the Literature

Law Enforcement Embracement of the Polygraph in Personnel Selection

Several major themes emerge in the polygraph literature. First, law enforcement agencies in the United States tend to accept and even embrace the polygraph examination as an effective method of the pre-employment screening of their officers (Horvath, 1993; Mark, 2014; Vicianova, 2015) and have a high confidence in its results. These agencies seek to garner all available resources in determining properly qualified officer candidates, and most feel the polygraph examination provides an efficient means of eliminating deceptive candidates. The relatively frequent occurrence of false positive results (Handler et al., 2009) in this endeavor seems to be an acceptable risk taken by law enforcement agencies who engage the polygraph as part of their hiring process.

Scientific Community Skepticism

A second major theme is that the scientific community is clearly not accepting of the polygraph examination (or the polygraph instrument itself) as having any meaningful scientific value in detecting deception (Iacono, 2008; Iacono & Lykken, 1997). At the core of their skepticism is the Control Question Test (CQT), which is central to the basic construct of the typical polygraph examination (Offe & Offe, 2007). The CQT compares the examinee's responses to control questions (or questions of no consequence) to the responses to relevant questions. The presumption is that there should be stronger psychophysiological responses to the control questions (designed by examiners to illicit

guilt feelings) than to relevant questions if the examinee is answering the relevant questions truthfully.

Several researchers, including Iacono (2008), Meijer and Verschuere (2015), and Walczyk, Igou, Dixon and Tcholakian (2013) have illustrated serious flaws in this presumption. Their overarching concern is the uncontrollable variables involved in a typical CQT, including variances in examinee psychophysiological reaction and the skill and experience level of the examiner. Meijer and Verschuere (2015) determined that the CQT is even less reliable for pre-screening tests than it is for applications where the offense being tested is known.

There is also debate in the scientific community regarding juror-influence and the polygraph. Myers, Latter, and Abdollahi-Arena (2006) studied the impact of polygraph evidence on jurors' judgments at trial. Sampling 411 participants, they provided the participants with one of three trial vignettes that contained either no polygraph evidence, a passed polygraph test, or a failed polygraph test. Their findings were consistent with previous similar juror-influence studies regarding the polygraph in that the participants were not influenced by the results of the polygraph test in determining guilt or innocence of the mock trial defendant. This finding, however, contrasted with previous surveys of experts in the field of psychophysiology who were influenced by such evidence (Myers et.al, 2006).

The established accuracy range of the polygraph instrument does not seem to satisfy the scientific community's expectation. Nelson (2015) conducted an extensive review of literature involving most aspects of polygraph accuracy, including the pretest

interview, test data analysis, and the physiological and psychological basis for polygraph testing. Based on this literature, he summarized the accuracy of both specific incident testing and multi-issue screening. Specific incident testing had a mean accuracy of .89 with a 95% confidence range from .83 to .95. Multi-issue screening polygraphs, however, had lower accuracy rates: a mean of .85 with a 95% confidence range from .77 to .93.

Pre-Employment and Specific-Incident Testing Distinction

A third major theme in the literature is the general agreement between both proponents and opponents of the polygraph that there exists a crucial distinction between polygraph examinations used for specific incident testing and examinations used for pre-employment screening of applicants. Moore (2014) observed that in employment screening polygraph examinations, as there are no specific incidents to question, the relevant questions must therefore be theme-oriented and generic. Conversely, in specific incident testing, relevant questions pinpoint whether the examinee has certain incriminating knowledge about the incident. This difference gives rise to challenges of validity in employment screening polygraphs.

Court Decisions and Law Imbalance

A fourth major theme involves the slanting of attention by the state legislatures and courts, since the passage of the Employee Polygraph Protection Act (EPPA) in 1988, to regulating the private sector in its use of the polygraph, while almost ignoring the public-sector (Onder and Brittan, 2009). Kleinman et al. (1990) identified a general theme of distrust by employees of pre-employment polygraph testing, as evidenced by

the suits filed in several key court cases. Clearly, such cases sparked the passage of the EPPA; however, Kurtz and Wells (1989) clarified that while the EPPA greatly curtailed the private sector's ability to utilize the polygraph for employment issues, it did not eliminate it. Furthermore, proponents and opponents of the EPPA predictably aligned with proponents and opponents of the polygraph examination in general (Kovach, 1995). Most recently, Barnhorn and Pegram (2011) proposed that the EPPA be amended to include non-sensitive public-sector positions in its purview.

Pre-Employment Screening and the Polygraph

Law enforcement agencies nationwide have employed the polygraph examination in their hiring processes routinely for almost the last half century (White, 2001). The nature of the polygraph, being born of criminal investigation, seemingly made it a natural fit for the employment screening of those who would investigate criminals. The limited research found on the specific topic of pre-employment polygraph screening of law enforcement officers serves as a testament to the almost blind acceptance by law enforcement agencies that the polygraph is an effective tool for screening applicants (Horvath, 1993). However, notwithstanding this acceptance, researchers (Cumming, 2007; Handler et al., 2009; White, 2001) have identified serious flaws in the efficacy of polygraph screening in law enforcement agencies. This literature review addresses these flaws throughout.

Widespread Acceptance

Horvath (1993) determined that the clear majority (93%) of major police departments surveyed nationwide that use the polygraph in the pre-employment screening

of their officers had a moderate or high confidence in the overall program. Additionally, he learned that 62% of the 626 departments he surveyed actively use the polygraph to pre-screen officer applicants; 38% had either never used the polygraph for this purpose, or had discontinued the program. These figures are nearly identical to the figures revealed by a more contemporary study (American Polygraph Association, 2015), indicating consistency in pre-employment polygraph screening by law enforcement agencies over the last two decades.

Recognizing long-standing problems in the use of the polygraph in the selection of police officers, Handler et al. (2009) developed a polygraph primer for personnel involved in the selection of police personnel. They identified many problem areas for polygraph screening of police personnel, including improper selection of testing issues, misguided test questions, and ineffective policies regarding the use of the polygraph examination. Their examination emphasized that the polygraph examination, as a pre-employment screening tool, should be viewed as a decision-support mechanism rather than a final decision maker in and of itself. They recommended that the polygraph examination phase of the hiring process should screen for actuarially driven predictors correlating to successful careers in law enforcement and job performance.

Notwithstanding Handler et.al (2009), law enforcement agencies nationwide have long used the polygraph examination in the hiring process, not only as a tool for verifying truthfulness on the employment application, but also to predict future professionalism in its officers. In a study sponsored by the American Polygraph Association Research Center at Michigan State University, 626 large police agencies surveyed identified

several reasons for employing the polygraph as part of their hiring process of sworn officers (American Polygraph Association, 2015). A major factor in their rationale was their assumption that employees of a higher level of professionalism were hired after having undergone polygraph screening. Over 90% of the agencies surveyed reported strong confidence in these results.

Park and Herndon (2015) attempted to understand why government agencies place an elevated level of trust in the polygraph examination, both as a verifier of truth and as a predictor of police officer career success. They concluded that current research falls short of determining why agencies place undue confidence and reliance on a procedure so ardently questioned in the scientific community. They highlighted the need for longitudinal studies that may determine the polygraph examination's usefulness in predicting officer success.

Correlation of the Polygraph with Career Success

A limited number of researchers have attempted to correlate law enforcement hiring practices with early termination (White, 2008). Forrer et al. (2008) recognized there may be a connection between these two variables. Examining the hiring practices of a large county sheriff's department in Florida, they hypothesized that there was a relationship between the department's use of the polygraph and termination of deputies due to disciplinary issues. They also proposed there was a relationship between certain demographics (age, tenure, and education) and disciplinary termination. While their findings regarding this question were inconclusive, this study served as an indicator that

further study of hiring practice and misconduct issues in law enforcement agencies may be warranted.

Most research has focused on factors other than the polygraph to predict officer success. Some have recognized that technological advances tend to propel organizations into technology deployment with little regard for ethical issues potentially generated. Gondwe (2011) explored the issues associated with privacy rights in the South African workplace and the effects of several potentially invasive measures including drug and medical testing, psychological testing, electronic monitoring, and polygraph examinations. He found that technological advancements in recent decades have expedited the use of these various employee testing tools, thus complicating the balance between employee privacy and employer protection.

Using police recruit data from a large metropolitan police department, White (2001) identified factors of high police academy performance. Interestingly, the most predominant factors predicting success were basic demographics such as age, gender, race, and reading level. Unimportant factors were prior military experience, college education, and residency. He posited that police departments' traditional methods for measuring success in officers is through crime-related functions that have little to do with quality policing. This study served to approach success prediction of the officer while the officer is brand new to the force and enrolled in the academy, theorizing that the police officers performing best in the academy will also perform well in their assigned duties.

Henson, Reynolds, Klahm IV, and Frank (2010) extended White's (2008) analysis of predictive factors of successful police recruits. Using success on the police department as the dependent variable and various demographics and experience levels as the independent variables, they drew on data from 486 officers hired over a recent 10-year period in one Midwestern police department. The results were that demographics and experience of the officers did not play a major factor in their success on the department. However, there was a relationship between those scoring higher on the civil service exam and superior academy performance.

Fuss and Snowden (2004) determined that the background investigation is possibly the most significant indicator of police officer success once hired. Their study of 447 police and sheriff's departments nationwide resulted in high numbers of respondents (93%) categorizing background investigations as very important in the hiring process of its officers.

Polygraph as Predictor of Future Police Performance

Since the polygraph examination's widespread acceptance by police agencies nationwide as a personnel screening tool, it has been employed by agencies, not only to screen out deceptive candidates, but as an indicator of a candidate's future success on the job. Several previous studies (Horvath, 1993; and Handler et al., 2009) support that a primary benefit of polygraph screening of police personnel is that it provides indispensable information about the applicant not available from other sources (Meesig & Horvath, 1995). To this end, the polygraph screening of police applicants contributes heavily to the process of data gathering necessary to make informed, deliberate decisions

about applicant suitability. Other studies, such as Goldsworthy and Trainor (2014), Matthies (2012), and Pynes and Bernardin (1992) have also supported the notion that police agencies use the pre-employment polygraph screening as a predictor of on-the-job police performance.

Standardization and Issues

There is a profound lack of standardization in how law enforcement agencies administer polygraph examinations in their hiring processes. Mark (2014) determined that the use of the polygraph examination in the law enforcement hiring process in the U. S. is not standardized and is administered inconsistently. The results, yielded from her survey of major law enforcement agencies nationwide, showed inconsistencies in several aspects of pre-employment screening polygraph examinations, including the type of instrument used for the examination, the number of tests given to an applicant, scoring procedures, and disclosure of results to applicants.

Blalock (2009) also recognized both a lack of standardization in polygraph pre-employment screening examinations and how this lack has resulted in diminished reliability. He stressed that the polygraph examiner is clearly the most obvious point of variance in the administration of the polygraph examination. Because of uncontrollable factors such as human frailty, mental fatigue, and experience level, the complexity of variables associated with the human examiner leads to a lack of standardization in the inherently complex procedure of polygraph administration. Lesniak (2014), who determined that polygraph examiners tend to use more subjective than objective means in

their test evaluations, supports Blalock's (2009) position. The lack of standardization and potential for examiner bias calls into question the polygraph's efficacy in this application.

White (2001) examined the ethical use of the polygraph in a pre-employment screening application in a post-EPPA environment, which has seen a marked increase in public-sector pre-employment polygraph screening. In the United States Defense Department, over 23,000 polygraphs are given per year for both pre-employment and continued classified material access purposes. Some of the misuses identified were the propensity for coercion, mistrust in the polygraph instrument's validity, false positive results, and privacy invasions.

However, despite these abuses, White (2001) defended the pre-employment screening use of the polygraph when there was a "compelling public interest" at stake; for example, in the case of hiring Central Intelligence Agency personnel where the potential for national security damage may outweigh the recognition of individual privacy rights. His defense of the polygraph, in certain situations, characterizes the position of organizations holding sensitive, classified positions—that they are willing to accept a certain level of misuse in exchange for uncompromised organizational security.

Cumming (2007), in his Congressional Research Report for Congress, identified three primary criticisms for the polygraph examination's use as a pre-employment screening tool with respect to United States Department of Energy employees in sensitive positions. First, polygraph examination results might be better substituted by enhanced examination of a prospective employee's financial and travel records followed by more frequent reinvestigation. Second, polygraph results could produce a dangerous false

sense of security in the identification of espionage among employees. Misplaced confidence such as this could lead to lapses in other crucial areas normally monitored. Finally, countermeasures have been shown in several studies to be able to defeat polygraph testing accuracy.

There is a stark and clear distinction between the scientific theories behind both types of polygraph examinations: specific incident testing and screening tests; this distinction stresses the importance of the development of empirically supported theories for the detection of deception (Moore, 2014). In employment screening polygraph examinations, as there are no specific incidents to question, the relevant questions must therefore be theme-oriented and generic. This gives rise to challenges of validity in employment screening polygraphs. Conversely, in specific incident testing, relevant questions aim toward whether the examinee has certain incriminating knowledge about the incident (Moore, 2014).

Studies involving the polygraph in employment screening have tended to focus on the automated polygraph examiner versus the human examiner, while ignoring potential ethical and social issues. Honts and Amato's (2007) is one such study that explored the automated versus the human examiner and its effect on accuracy in employment screening. Their study identified more accurate results in the automated polygraph examiner testing than in the human examiner.

Polygraph Validity, Reliability, and Overall Efficacy

In a review of existing literature on the use of the polygraph as a pre-employment screening tool in law enforcement agencies, it is difficult to sever from the discussion the

larger debate about the polygraph's overall credibility as a deception detector; the sheer volume of literature focused on polygraph credibility is remarkable. The polygraph's validity and reliability is a recurring theme throughout the literature, and a major theme of this review. The fact that law enforcement agencies in the United States typically employ the polygraph in one of two applications: criminal investigation, or employment screening, complicates this theme (Meijer and Verschuere, 2015). Moreover, claims of the polygraph's effectiveness vary widely between the two applications. It is clear, however, that an examination of the literature about polygraph validity will emphasize the two most common types of polygraph tests administered: The Control Question Test and the Concealed Information Test.

Control Question Test

The Control Question Test (CQT) is a type of polygraph examination wherein responses to relevant questions are compared to questions of no relevance—that is, control questions. The polygraph examiner typically engineers the control questions to create anxiety in the examinee with the goal of causing the examinee (in an unwitting fashion) to lie about, or at least feel anxiety about, his or her answers to these questions (Honts & Reavy, 2015). This allows the polygraph examiner to compare the physiological responses of answers to the control questions, presumed to be attempts at deception, to relevant questions. In theory, if the response to the control questions is stronger than the response to the relevant questions, then the examinee is likely being truthful to the relevant questions.

The validity of the CQT has been challenged in the literature for over 50 years. In recent years, several researchers have dismissed the CQT as having no theoretical basis from which to establish any meaningful validity (Fiedler et al., 2010; Iacono, 2008; Iacono & Lykken, 1997). Additionally, Meijer and Verschuere (2010) found that the CQT is less reliable, especially for pre-screening polygraph examinations, as opposed to the Concealed Information Test (CIT) where the offense is known by both examiner and examinee.

Iacono (2001) found that the CQT, while potentially useful as an investigative tool in a criminal investigation to induce confessions, lacks scientific validity for use in applications other than criminal investigation, such as employment screening, and should be viewed skeptically. The CQT makes a major incorrect assumption that innocent examinees will respond strongly to control questions (Iacono, 2001). Earlier works (Honts, & Kircher, 1994; Horvath, 1993; Kleinmuntz & Szucko, 1984; and Patrick & Iacono, 1991) refuted this assumption as well. Iacono (2001) argued that the CQT is simply a combining of interview techniques with a physiological recording of the examinee, for which there is no industry standardization. With no standardization, the interview format, questions, and subsequent interpretation of the results are left to individual polygraph examiners whose skill and experience level may vary. Under these circumstances, innocent applicants risk being unfairly branded as liars as the result of a false positive test result.

Iacono (2008) again challenged the validity of the CQT arguing that its theoretical basis is practically non-existent, it is biased against the innocent, it is easily vulnerable to

countermeasures, and that there is no standardization in the administration of the CQT—that two examiners might easily interpret the results from the same CQT differently. This conclusion challenged the half-century old assumption of the polygraph industry that we can determine a person's veracity by simply assessing physiological responses to verbal stimuli, without accounting for difficult to control variables (Iacono, 2008).

Fiedler et al. (2010) further identified the lack of scientific validity in the CQT. They argued that published research claiming to validate the CQT does not meet internal consistency standards and suffers from a lack of construct validity. Therefore, such work cannot be considered scientific for establishing validity. Furthermore, they posited that estimates of the CQT's validity suffer from sampling-bias issues.

Some research has supported the CQT as an integral part of polygraph testing. Offe and Offe (2007) conducted a study spotlighting the comparison question test (CQT) and its significance in polygraph testing. Using a mock crime as the backdrop for the polygraph test, they instructed 65 subjects to play roles of guilty or innocent, and further divided them into two comparison groups: The first group received an explanation of the comparison questions in a pretest interview; the second did not. High identification of the guilty and innocent was achieved in the group having the prior explanation of the comparison questions as opposed to the group that had not. While other researchers have challenged the assumption that the CQT is a vital part of polygraph testing, this study lends credence to the claim that the CQT is significant in detecting deception during the polygraph examination.

The proliferation of information regarding polygraph countermeasures and its pervasive availability might result in adverse examination outcomes. Honts and Alloway (2007) recognized that vast amounts of information regarding the CQT and countermeasures by which to defeat the CQT are now available on the Internet and examined how prior knowledge of such information would impact the validity of the CQT. They divided 40 participants into equal groups of guilty, guilty-informed, innocent, and innocent-informed. As part of the experiment, some participants were given CQT and countermeasures information in advance. This prior information resulted in no significant effects on the validity of the CQT. Additionally, it was determined that the participant's use of countermeasures associated with lower probability of truthfulness. This study refutes claims that having prior information about the CQT or countermeasures will result in false-negative errors.

The debate over the overall efficacy of the polygraph examination (whether used in criminal investigation or employment screening) is exemplified by Palmatier and Rovner (2015), who opined that the polygraph examination meets both construct and criterion validity. They recognized opponents who claim CQT is a procedure within a polygraph examination that uses both relevant and irrelevant questions for comparing physiological responses is lacking in construct validity, as there is no underlying scientific theory supporting it. However, they contended that their literature review from the psychophysiology and neuroscience fields convinced them that there is a solid theoretical construct in polygraph testing in both employment screening and criminal investigation applications.

Elaad (2015) in reviewing Palmatier and Rovner's (2015) article criticized their use of the orienting response (a response to external stimuli) to justify validity of both the CQT and the CIT. He argued that, as the CQT and CIT are different diagnostic polygraph tests, each with its own unique characteristics, they must be considered separately when applying scientific theories to them. This illustrates the ongoing debate between scholars regarding validity issues and the polygraph and underscores the variety of types of polygraph tests and their differences in what they intend to accomplish. Ben-Shakhar et al. (2015) also challenged Palmatier and Rovers' (2015) assumption of construct validity in the CQT, arguing that merely citing sources relating to the orienting response and not establishing a clear connection to the CQT is insufficient.

Ginton (2015), as with Elaad (2015) and Ben-Shakhar et al. (2015), sharply criticized Palmatier and Rovner (2015) for their attempts at bridging the gap between the practitioner and academic attitudes toward polygraph testing. Ginton proffered that even if the polygraph taker is lying in either the CQT or the CIT, it does not mean that the deception is being directly measured. Rather, the CQT and the CIT are mere efforts to "deduce about veracity in the absence of any specific physiological feature representing deception" (Ginton, 2015, p. 25). This is a unique view of the CQT and CIT and challenges their validity as indicators of deception.

Meijer and Verschuere (2010) reinforced the notion that bold claims about the validity of the CQT come almost exclusively from practitioners, while academic researchers are more skeptical. They recognized that there is little that is stopping innocent examinees from responding strongly to relevant questions and guilty examinees

from responding strongly to control questions, placing the burden on the skill and experience of the polygraph examiner to render a correct judgment. They also observed there is a significant disparity in the accuracy of polygraph examinations with specific incidents being tested as opposed to examinations that generally seek derogatory information, such as pre-employment polygraph screening and sex offender testing.

Later, Meijer and Verschuere (2015) recognized that the CQT has less reliability in situations where the offense is unknown such as pre-employment screening or sex offender monitoring than in applications where the offense is known, such as in a criminal investigation. They observed that the CQT assumes that innocent subjects will have greater reaction to the control questions than the relevant ones, and that this assumption (not supported by meaningful research) is a dangerous one. To this end, CQT proponents argue that a competent examiner can form appropriate control questions and provide an atmosphere where the examinee will perceive the control questions as more threatening than the relevant ones. For critics of the CQT, this is a faulty argument as they contend there is no standardization in the polygraph field for CQT formatting and administration.

Walczyk et al. (2013), recognizing the inherent flaws in the CQT identified by the National Research Council (2003), proposed four recommendations for practitioners to avoid the mistakes associated with the CQT and cognitive load-inducing lie detection in general. These recommendations underscore the lack of a valid theoretical framework surrounding the CQT, its susceptibility to countermeasures, and lack of standardization in its administration. First, they proffered that cognitive load lie detection techniques must

be based upon validated models or theories of deception, as is not presently the case. Second, countermeasures to lie detection, including rehearsal of deception, are serious threats to lie detection and practitioners should seek to identify and inhibit it when possible. Third, it should be recognized that law enforcement officers, as well as other human observers, lack in their ability to detect lies due to their focus on unreliable cues, such as gaze aversion. Fourth, there should be standardization of analytical procedures for determining honesty from deception.

Concealed Information Test

The Concealed Information Test (CIT), unlike the CQT, is used typically in testing for deception regarding a known offense (Ben-Shakhar, 2012). Also known occasionally as the Guilty Knowledge Test (GKT), the CIT is often the polygraph test of choice for criminal investigation. Several studies examined its accuracy. For example, Verschuere, Meijer, and De Clercq (2010) determined that the orienting response (OR) is vital for valid results in the CIT. In OR theory, it is believed that external stimuli triggers a natural physiological response. Therefore, the OR theory of the CIT posits that when examinees recognize critical information (such as what has been concealed in the CIT), their physiological reaction will be strong. Conclusions from Verschuere et al. (2010) support the OR theory of the CIT.

Bradley, Malik, and Cullen (2011) were among several researchers to experiment with the CIT. Their research divided participants into two groups: guilty and innocent. The groups were further divided by the quantity of detail about the mock crime they were provided. The results showed that accuracy rates on CIT polygraph examinations

depended heavily on participants' memory of crime details. Studies such as this display the effect uncontrolled variables can have on polygraph results.

Hira and Furumitsu (2009) determined that in polygraph examinations employing the CIT, the guilty consistently maintained higher heart rates than the innocent; however, there were no significant differences in respiration rates between the two groups. They analyzed 84 sets of CIT field data to make this determination. However, they acknowledged that these results may only be applied to CIT examinations, which usually involve criminal suspects attempting to clear themselves of suspicion of a crime.

Iacono, Cerri, Patrick, and Fleming (1992) determined the effect of antianxiety drugs when used as a countermeasure in a CIT polygraph examination. Dividing 75 undergraduate students into five groups (four guilty and one innocent) they administered one of three antianxiety drugs (diazepam, meprobamate, or propranolol) or a placebo to the guilty groups prior to their polygraph examination. The examination followed the viewing of burglary from the burglar's point of view. The results showed no correlation between the antianxiety drug use and outcome of the CIT.

Post-Conviction Sex Offender Testing

In recent years, the polygraph has been employed to monitor and evaluate post-conviction sex offenders, mostly in the United States, Great Britain (Marshall & Thomas, 2015). While such programs may succeed in increasing disclosures of prior and current offending, there is limited knowledge as to their efficacy in treatment and deterrence (Kokish, Levison, & Blasingame, 2005). Regardless, several studies have challenged

polygraph efficacy of post-conviction sex offender testing, usually basing the study on issues of CQT validity.

For example, Rosky (2012) refuted claims of polygraph efficacy in the treatment and supervision of criminal offenders. While some post-conviction polygraph testing literature suggests success in these areas, particularly in studies using convenience samples and self-reports, Rosky noted that independent researchers have not arrived at a consensus regarding polygraph accuracy over a range of conditions, such as offender differences and skill level of examiners. Such studies illustrate the extreme lack of consensus among researchers in studies involving polygraph efficacy.

Ben-Shakhar (2008), more harshly than Rosky (2015), criticized the use of the polygraph in sex offender treatment programs, zeroing in on the Control Question Test (CQT) as the primary culprit in the polygraph's downfall and central core of the issue. He argued that the inherent flaws of the CQT, including its faulty assumptions, create considerable risk for both false positives and false negative results in sex offenders. He pointed out that no methodologically sound study regarding the validity of the CQT, either in a forensic application or in sex offender treatment programs, has been conducted. Finally, he acknowledged that, in today's world of connectivity and advanced communication, accessibility to information about the CQT is readily available to many. As a result, once the true nature of the CQT (that is, its dependency on convincing examinees that its results are highly accurate and valid) is revealed, deterrent value will be lost. Few studies regarding the CQT point out this inherent flaw. Ben-Shakhar's (2008) work, as a follow up to Rosky (2012), gets to the heart of the research questions in

this study as it brings to light that the CQT itself is dependent on a lie by the examiner to the examinee—that is, a convincing of the examinee as to the polygraph’s effectiveness via a less than forthright demonstration by the examiner.

Ethical issues in polygraph use in sex offender monitoring and treatment have also come into question. Marshall and Thomas (2015) described the current state of polygraph use in post-conviction sex offender monitoring and treatment in the United Kingdom. Noting that 80% of United States sex offender programs presently use the polygraph (McGrath, Cumming, Hoke, & Bonn-Miller, 2007), they questioned the U. K. government’s motivation in its recent push for polygraph monitoring of its sex offenders while citing the recent General Election in May 2015 and the campaign rhetoric regarding tough-on-crime stances. They further questioned the government’s authority to forcibly impose states of anxiety on its citizens through the mandatory imposition of a polygraph.

Others have been less critical of sex-offender treatment programs employing the polygraph. Grubin (2010) argued that, while the polygraph examination is a far from perfect tool for detecting deception across many applications, the field of forensic psychiatry should embrace it as a complement to other avenues of discovery. While acknowledging the polygraph’s shortcomings in applications such as criminal investigation, employment screening, and security vetting, he posited that it should be considered appropriate for post-conviction sex offender testing and treatment, as the 80-90 % accuracy rate (as noted by the National Research Council (2003) is sufficient to inform “treatment and management without dominating it” (p. 449). Other researchers

(Jensen, Shafer, Roby, & Roby, 2015; Kokish et al., 2005) support the use of the polygraph in sex offender treatment programs.

Legal Issues and Policies

Almost since the polygraph's beginning, federal and state laws, court decisions, and industry regulations have governed the way public and private sector organizations administer the polygraph examination in the U. S. Most notably, and perhaps most controversial, is the Employee Polygraph Protection Act of 1988 (EPPA)--the federal law having the farthest-reaching effect on the administration of polygraph examinations nationwide (Employee Polygraph Protection Act).

Employee Polygraph Protection Act of 1988

Kovach (1995) outlined the positions of the proponents and the opponents of the newly-passed Employee Polygraph Protection Act (EPPA). Supporters of the EPPA placed strong emphasis on the psychological and physical discomfort of being subjected to a compelled polygraph examination in the workplace. Additionally, the results of a false negative outcome can be devastating to an employee's position in the company. Critics of the EPPA maintain that in the hands of an experienced examiner, the polygraph can be an effective tool for determining dishonesty. Some critics have claimed that there is too much disparity among the private employers the EPPA prevents from using the polygraph to pre-screen applicants (Smith, 1993). For example, private security firms generally can use the pre-employment polygraph while jewelers cannot.

Kleinman et al. (1990) reviewed 19 key court decisions regarding the use of pre-employment polygraph testing in the era that followed the Employee Polygraph

Protection Act of 1988 (EPPA). The cases, in which various parties prevailed after suing a public employer, fell into one of eight categories of claims made by the plaintiff: state anti-polygraph law violation, public policy, equal opportunity employment law violation, individual right to privacy, defamation of character, due process violation, emotional distress claim, or involuntary self-incrimination claim. The nature of these categories establishes a general theme of distrust by employees related to public employers' use of pre-employment polygraph screening. However, in none of the 19 court decisions reviewed were questions raised that were related to the polygraph's accuracy.

Onder and Brittan (2009), acknowledging the effects of the Employee Polygraph Protection Act (EPPA) on employment polygraph screening, compiled a collection of pertinent court cases nationwide regarding the EPPA and its interaction with public and private employers and state and local laws. Since the EPPA's passage 27 years ago, federal and state courts have considered cases and made rulings, both supporting and attacking the EPPA. Almost all the court cases in the Onder and Britton (2009) study involved private sector employers, mostly regarding the employers' application of the EPPA in conjunction with state statutes and the employers' attempts to interpret the law's intent to their advantage.

Barnhorn and Pegram (2011) proposed updates and changes to the Employee Polygraph Protection Act of 1988 (EPPA) to bring it up to date in the wake of technological and political changes of the past three decades. They proffered that the public exemption clause of the EPPA should be curtailed to protect the individual privacy rights of public employees and that most government agencies should have to comply

with the EPPA as private sector agencies must. However, they stopped short of including federal government sectors dealing with national security issues such as the Department of Homeland Security, the Federal Bureau of Investigation, and the Central Intelligence Agency in this proposed amendment to the public exemption clause.

National Research Council

The National Research Council (2003) (NRC), in their groundbreaking study of the efficacy of the polygraph examination for pre-employment screening of the U. S. Department of Energy (DOE) employees, reached three main conclusions about the validity, reliability, and overall accuracy of the polygraph examination in an employment screening application. First, it is striking how limited research is in pre-employment polygraph screening. However, notwithstanding the limited literature, the NRC concluded that the polygraph examination can detect deception well above chance, though well below a level approaching perfection. Second, countermeasures can clearly compromise polygraph accuracy, particularly in the hands of an examinee properly trained and motivated to achieve deception. Third, the polygraph in a pre-employment screening application yields unacceptable results in detecting deception in that the false positive and false negative results are at such a elevated level so as to render these results practically useless. Stated another way, the accuracy rate in distinguishing deceivers from truth tellers is insufficient to warrant reliance in pre-employment screening.

Vicianova (2015), in her exploration of the history of lie detection, identified the National Research Council Committee to Review the Scientific Evidence on the Polygraph (2003) as the definitive study in determining the accuracy of the polygraph.

The National Research Council's study placed the accuracy between 81% and 91%, and several researchers including Lewis and Cuppari (2009) and Ginton (2013) supported this range of accuracy. She suggested that the polygraph does not, per se, detect lies. Rather, it is an instrument that measures physiological responses including those associated with deception; however, no one response is clearly associated with deception, and those deceptive do not always respond in a predictable manner.

Court Decisions and State Laws

The states passed a myriad of laws, in the wake of the EPPA's passage in 1988 (Wise & Charvat, 1990), relating to a public employer's use of the polygraph testing in hiring and personnel actions. In turn, courts at the federal and state levels dealt with a variety of polygraph cases ranging from employment discrimination to post-conviction sex offender testing (Math, 2011).

Saxe and Ben-Shakhar (1999) addressed the admissibility of polygraph examination evidence in court and the impact of U. S. Supreme Court's decision in the Daubert case (*Daubert v. Merrell Dow Pharmaceuticals*, 1993), which enhanced the court's role in the weighing of scientific evidence at trial. The Daubert decision expanded on the long-standing Frye standard (*Frye v. United States*, 1923), which held that expert opinion on scientific evidence is only admissible if that opinion is generally shared in the scientific community. The Daubert standard shifted the burden away from the scientific community and onto the trial judge for decisions regarding the admissibility of scientific evidence. Recognizing that courts are not well-equipped to discern scientific

arguments, Saxe and Ben-Shakhar (1999) proposed that social scientists and courts “develop a mutually understood language to assess validity claims” (p. 203).

Two key U. S. Supreme Court cases in the last 20 years shed light on the Court’s position on polygraph evidence (“Pre-employment Polygraph Examinations,” 2011). The first time the Supreme Court weighed in on the issue of polygraph admissibility in court was in *U. S. v. Scheffer* (*U. S. v. Scheffer*, 409 S. Ct. 1293, 1998), where the Court held that the exclusion of polygraph evidence in military court did not violate a defendant’s right to present a defense at trial. The Court’s majority stated that exclusion of polygraph evidence would ensure the jury’s right to determine the credibility of witnesses. They also recognized that the scientific community is polarized on the issue of polygraph credibility. This decision was supported by *U. S. v. Henderson* (*U. S. v. Henderson*, 409 S. Ct. 1293, 2005), in which the court opined that the entire field of polygraph did not receive general acceptance from the scientific community.

Literature Related to the Methodology

The methodology for this study is primarily informed by three related literature reviews. First, Tarescavage, Fischler, Cappel, Hill, Corey, and Ben-Porath (2014) examined the validity of the Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF) scores as applied to the screening of police officers for employment. They sampled 712 officer candidates from two Midwestern police departments, including in that sample 426 hired officers, most of whom had misconduct issues within their departments. The purpose of the study was to determine if a correlation existed between MMPI-2-RF scores of police candidates and success as a police officer. The Tarescavage

et al. (2014) study mirrors this study in that it attempts to draw correlations between a pre-employment evaluative examination and officer misconduct.

Second, Park and Herndon (2015) identified the need for evaluation of how police agencies screen their applicants using a multiple-hurdles approach, after citing a lack of study involving the predictive validity of screening criteria. Their study examined how independent variables such as age, military experience, education level, and polygraph result affected the dependent variable of academy completion status (successful or unsuccessful). They found that while the independent variables did predict academy completion, they did not necessarily predict quality in training performance.

Park and Herndon (2015) concluded about the polygraph's use as a criterion for the predictor of officer career success, that:

Research fails to capture the essence of why government agencies place such trust in an instrument that is continually scrutinized for its controversy. Longitudinal studies that examine multiple polygraph testing techniques are needed to formulate hypotheses that either support or refute its usefulness in screening for the best cadet. (p. 156)

Their conclusion captures the underlying theme of this study—the unapprised trust that law enforcement agencies place in the polygraph examination in the selection of their personnel. In this regard, their study lays groundwork for exploration of this phenomenon.

Third, Staunton and Hammond (2011) conducted a study that addressed several key issues of the Guilty Knowledge Test (GKT), including whether examinee motivation

affects outcome and whether gender influences physiological response during a polygraph examination. A mock-crime simulation procedure was used to assess the efficacy of the GKT. Data was analyzed using four-way analysis of variance (ANOVA) with deception, motivation, gender, and items taken serving as independent variables while the physiological responses of the participants was the dependent variable. They determined that the GKT's effectiveness is strongly related to the examinee's ability to remember details about the incident. Staunton and Hammond's (2011) study supports the design for this study in that stratified sampling, which is the planned design for this study, was used to ensure an appropriate variance in the participants selected. Stratified sampling is the key sampling strategy for this study.

Creswell (2009) explained that quantitative research allows for the testing of an existing theory or theories. He described the quantitative process as using hypotheses or research questions, informed by theory, to test a theory's validity. This is done through the operationalizing of the variables identified in the research questions. Analysis of the variable interaction results in conclusions drawn about the original theory tested.

Frankfort-Nachmias and Nachmias (2008) identified cross-sectional research designs as being ideal for exploring relationships between variables, the main thrust of this study. Cross-sectional research is often identified with survey designs, especially in research not intended to show causal relationships between variables. Instead, it shows simple relationships between variables. This study will explore relationships between a law enforcement agency's use of the polygraph in the pre-employment screening process

and the level of misconduct issues experienced by newly-hired officers. It stops short, however, of seeking to draw causal inferences about the variables.

Summary and Conclusion

Today, most of law enforcement agencies nationwide require their officer applicants to pass a polygraph examination as part of the hiring process. However, existing literature neither supports nor opposes an informed justification for this practice. The question remains as to whether the pre-employment polygraph screening of a law enforcement applicant correlates to the applicant's success as an officer. Viewed another way, the question may be posed as to whether there is a relationship between pre-employment polygraph screening and misconduct issues in newly-hired officers. This study seeks to address this question directly.

Notwithstanding these unanswered questions, law enforcement agencies nationwide overwhelmingly accept the pre-employment polygraph examination as a positive attribute of their hiring processes. Seemingly unfazed by the myriad of research identifying problems with polygraph testing in the public-sector, including false positive and false negative results, coercive tactics, and privacy invasions (Cumming, 2007; White, 2001), agency executives continue to rely on the polygraph as a decision-support tool, and in many cases as a definitive decision maker, in their hiring processes (Handler, et al., 2009).

The review of the literature uncovered a striking pattern of unacceptance by the scientific community in the polygraph's validity, reliability, and overall accuracy in detecting deception. This is particularly true of the CQT, the type of polygraph

examination primarily given in pre-employment screenings. This deficiency in credibility magnifies law enforcement executives' seemingly blind decision to rely on polygraph testing for the screening of their officer candidates. Particularly with pre-employment screening polygraph examinations, there is no specific incident that is the subject of the test; therefore, polygraph questioning must be general in nature, allowing for the exploration of a broad base of personal topics. Accordingly, the propensity for privacy invasions and coercive tactics to uncover derogatory information on an examinee increases.

While the literature is replete with studies challenging the foundation of the CQT, and to some extent the CIT, it severely lacks in its exploration of the efficacy of the polygraph examination, especially as a pre-employment screening tool. Most of the available research focuses on establishing the polygraph instrument as either a reliable or unreliable device in detecting deception. However, it shies away from the larger question of the polygraph's effectiveness in its practical, everyday use. This research trend has been in place since the passage of the EPPA in 1988, which effectively ended the use of the polygraph for employment purposes in the private sector. Most recent study gravitates toward the dissection of the theoretical constructs of the CQT and avoids the larger questions concerning its practical use in employment screening.

Individuals on both sides of the polygraph validity debate establish a solid divide between practitioner and scholar. Interestingly, while both sides agree that credibility of the instrument is important, they seem to view the problem of establishing credibility through differing lenses. The position of those vested in the practical use of the polygraph

instrument for either criminal investigation or pre-employment screening is not surprising; they consider the device trustworthy and efficient if operated by a qualified, experienced examiner. In contrast is the academic viewpoint that such tolerance lends itself to an erosion of scientific principles to justify the use of an instrument with no meaningful theoretical foundation. Regardless, both sides have gravitated toward the myopic debate of establishing validity for the instrument itself, with little regard to broader questions of whether the process of the polygraph examination is effective or is a worthwhile endeavor.

The results of this study sought to fill a gap in the knowledge of whether the polygraph, in a pre-employment screening application of law enforcement officers, is effective in its intention. By measuring the effectiveness of the pre-employment polygraph examination in the law enforcement hiring process, it is possible that relationships between polygraph use and officer misconduct may be uncovered and conclusions drawn about the instrument's effectiveness. Filling this research gap was paramount to this study.

The existing research demonstrates that there is healthy debate surrounding the use of the polygraph as a pre-employment screening tool. Despite its controversial nature, law enforcement executives persist in their reliance on polygraph as a pre-employment screening tool for both the verification of truthfulness in the officer's application and as a predictor of professionalism once on the job. Arming law enforcement executives with information about the effectiveness of the polygraph as a hiring tool would better position them to make informed decisions regarding its use. This

was the intention of this study. Chapter 3 details the quantitative methodology for this study.

Chapter 3: Research Method

Introduction

The purpose of the study was to examine the effectiveness of the polygraph examination as a predictor of the likelihood of future police misconduct. Specifically, my intent was to assess the perceptions of police misconduct among Ohio law enforcement officers who had taken a polygraph as a condition of employment as compared to officers who had not. While there was ample knowledge regarding the accuracy of polygraph testing in general, a gap remained, according to my review of the literature, in knowledge about polygraph effectiveness when the instrument is used as a preemployment screening tool, especially in the field of law enforcement.

In this chapter, I provide a description of the research design for this study. It outlines in detail the study's design, targeted population, sampling method, and participant recruitment process. It also describes the data collection and analysis, operationalization of the variables, validity and reliability concerns, the role of the researcher, potential biases, and ethical issues.

Research Design and Rationale

It is important to align the research design of a study with the initial problem prompting the investigation. In this instance, the primary problem was that it was not known whether there was a correlation between a law enforcement officer's perception of misconduct (which correlates to the potential for actual misconduct) and the passing of a polygraph examination. To address this problem, the design plan involved exploring

correlations between an agency's use of the polygraph and its officers' perception of police misconduct. I sought to explore connections between the preemployment polygraph examination and the quality of law enforcement officer hired.

Accordingly, a cross-sectional quantitative design served to efficiently address the research questions that explored relationships between the preemployment polygraph examination and a law enforcement officer's ethical stance. In this study, I sought to statistically analyze these relationships. While I may have been able to address similar research questions with qualitative analysis, the absence of statistical analysis would have hindered my attempts to generalize the results over a population. Use of a quantitative survey design enabled me to more efficiently capture the data needed to address the research questions.

Research Questions and Hypotheses

The following research questions and hypotheses were driven by the overarching question of whether there are differences in perceptions of police misconduct between officers who took the polygraph as a condition of employment and those who did not.

RQ1. Do law enforcement officers who took a polygraph examination as a condition of employment experience a greater level of intolerance for police misconduct, after controlling for educational level, tenure, and rank?

RQ2. Is there a relationship between an officer taking a polygraph examination as a condition of employment and an officer's opinion on the appropriate and expected discipline for police misconduct, after controlling for educational level, tenure, and rank?

RQ3. Is there a relationship an officer taking a polygraph examination as a condition of employment and an officer's willingness to report police misconduct, after controlling for educational level, tenure, and rank?

H_01 . There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's level of tolerance for police misconduct.

H_A1 . Officers who took a polygraph examination as a condition of employment experienced a greater level of intolerance in their officers for police misconduct.

H_02 . There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's opinion on the appropriate and expected discipline for police misconduct.

H_A2 . There is an association between an officer's taking of a polygraph examination as a condition of employment and an officer's opinion on the appropriate and expected discipline for police misconduct.

H_03 . There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's willingness to report police misconduct.

H_A3 . There is an association between an officer's taking of a polygraph examination as a condition of employment and an officer's willingness to report police misconduct.

Variables

The independent variable in this study was the law enforcement agency's use of the polygraph in its hiring process of its officers; specifically, whether an officer was subjected to a polygraph as a part of his or her hiring process. The dependent variables in this study were the law enforcement officers' tolerance of police misconduct, their expectations of discipline for police misconduct, and their willingness to report police misconduct.

There were several covariates in this study. These variables were certain demographics involving the participant law enforcement officers including educational level of sworn personnel, tenure with their agency, and rank within their agency. These variables were to be controlled so as not to impact the dependent variables independently of the independent variable (Creswell, 2009). The variances in officer demographics were expected to be significant, warranting their being controlled.

Research Design Choice

This cross-sectional study was designed to determine relationships between the pre-employment polygraph use by law enforcement agencies and the tolerance for police misconduct seen in the officers of these agencies. To this end, an appropriate survey design served to efficiently and effectively capture this data. The relationship-based nature of the research questions aligned well with the cross-sectional survey design of this study, as the information being sought was contemporary and not extended over considerable time (Field, 2013).

The survey design served to assist in the efficient collection of data. This study leveraged the Internet and contemporary survey software, with many potential participants reached in a brief period for nominal cost. As this was an online survey, minimal resources were involved. Approximately six weeks was necessary to fully collect the data from the sample needed for this study. This estimate included time from the initial contact with gatekeepers through the completion of collected data required by the prescribed sample size.

The extent of the literature on the topic of the polygraph as a public-sector pre-employment screening tool is limited. Moreover, there is sparse, if any, research involving this topic as applied to law enforcement agencies. Therefore, correlational research served as an appropriate starting point by which to build further study. While incapable of determining cause and effect, correlational study determines relationships between variables, which was the purpose of this study.

Research Design Options

A quantitative design was selected for this study for its tendency to provide a narrow scope of investigation. To this end, a quantitative study served to offer theory as an explanation for phenomena, and prove the theory a worthy explanation (Frankfort-Nachmias & Nachmias, 2008). In this study, punctuated equilibrium was offered as primary theory behind law enforcement organizations' maintenance of the status quo regarding pre-employment polygraph policy. Investigation pursued through a quantitative lens allowed this theory to be tested.

Qualitative designs, on the other hand would have been more appropriate for an investigation intended to explore broad based research questions with an open focus, emphasizing personal interaction with participants. This study was not designed as such. A qualitative design might have been plausible for this research topic if other avenues of knowledge were being pursued. However, the narrowly focused research questions of this study did not lend themselves to the stronger points of qualitative research—multiple sources of data, inductive analysis, and the researcher as an instrument of data collection. As this study's focus is on determining statistical differences between two independent groups (law enforcement agencies that give a pre-employment polygraph and those that do not) on several dependent variables, analysis of variance offered through quantitative design was an appropriate option.

For this quantitative study, cross-sectional survey research served to gather the opinions of the affected population--law enforcement officers that may or may not have been subjected to a pre-employment polygraph examination. The survey sought to determine the participants' level of tolerance for police misconduct. It was hypothesized that there is a correlation between an officer's tolerance for police misconduct and the passing of a pre-employment polygraph examination. A cross-sectional study, as opposed to longitudinal efforts, was better positioned to test such hypotheses.

For data analysis, the Mann-Whitney u test was selected as the primary analysis test for statistical significance between variable groups. While other statistical tests were available to this study, they would not have provided a complete analytical picture. The

Mann-Whitney u test was most appropriate for investigations involving differences between two groups on a continuous or ordinal variable.

Role of the Researcher

As this study was of a quantitative, non-experimental design, I was not an active observer or a participant in the study. My role did not involve direct contact with participants; rather, I initiated and then monitored the collection of data from the participants. The participants acted independently of me. Unlike qualitative studies, my role was not one of an instrument of data collection. Instead, my role was that of an unseen facilitator not affecting the participants.

I constructed a SurveyMonkey (SurveyMonkey, 2016) survey for data collection and distribution of this survey to law enforcement officers in Ohio through the Ohio Fraternal Order of Police (FOP), and in some cases, through direct contact with the agency head. As data was collected, I monitored the SurveyMonkey collection site to ensure there were no unanticipated issues or problems in the collection phase. I did not have direct contact with the participants, other than the written invitation to participate in the study.

Creswell (2009) explained that it is not uncommon for research problems to originate from the researcher's life experiences. My interest in polygraph research originated from my professional experience as a manager in a federal law enforcement agency. In this role, I was personally involved in the hiring process of sworn federal law enforcement personnel. These personnel were required to pass a polygraph examination as a condition of their employment. It was at that time that I developed an interest in the

manner and consistency in which pre-employment screening polygraph examinations were administered throughout various law enforcement agencies on the federal, state, and local level.

In this study, I did not have any professional or personal relationships with potential participants. I left federal law enforcement in 2011 and no longer maintain contact with any of the agencies that were involved in this study. Additionally, during my tenure in federal law enforcement up to 2011, I had minimal contact with potential participant agencies. At no time did I have positional authority, through employment or otherwise, over any participant in this study.

The quantitative, non-experimental design of this study served to neutralize potential biases I may bring to this study. I had no direct contact with the study's participants. The research questions and hypotheses had been carefully crafted so as not to reveal preconceived ideas regarding the topic.

As a show of appreciation for participation in this study, participants received a nominal incentive for completion of the survey in a prescribed amount of time. Incentives are acceptable in human-subjects research, provided they meet certain requirements including being free of coercion, dependency, and are nominal in nature (Grant & Sugerman, 2004).

Methodology

This study used simple random convenience sampling. However, it was important that the sample encompass both groups of the independent variable, and a plan to ensure capture of participants from both groups is described in detail in the Research

Design section below. Additionally, this study took steps to ensure the sample examined was spread over the numerous covariate demographics identified.

The study's population consisted of all municipal, township, and county law enforcement officers in the State of Ohio. Potential participants in the population received an invitation to participate in the study through the Ohio Fraternal Order of Police website or directly from their agency head. No inquiry was made in the entire process that would reveal the participant's identity; only basic demographic information regarding their rank and agency was obtained as part of the data collection. Participants received an informed consent via SurveyMonkey prior to participation. The survey instrument was an adapted measurement instrument that has been used extensively in previous research. No archival data was used in this study.

An established measurement instrument commonly referred to as the Klockars Scale (discussed later in this chapter in greater detail) was modified slightly for use in this study (Klockars, Kutnjak Ivkovic, Harver, & Haberfeld, 2000). This scale has successfully measured law enforcement officers' perception of police misconduct, the primary dependent variable in this study. Over 20,000 law enforcement officers' perceptions of police misconduct have been assessed using the Klockars Scale. The scale involves assessing officers' reactions to various case scenarios of police misconduct of varying levels. This assessment, which measures the dependent variables in this study, was analyzed against the independent variable of polygraph use in the law enforcement agency hiring process. Confounding variables, such as the educational level of the participants, were tested for mediating and moderating effects.

Data was analyzed using the Statistical Package for the Social Sciences version 21 (SPSS Statistics). The Mann-Whitney u test analyzed data necessary to address the three hypotheses in this study. Logistic regression and an independent-samples t-test was all used in the analysis. The Mann-Whitney u test was an appropriate test selection in cases where determination of differences between groups on an ordinal variable is needed, as was the case in this study. Logistic regression tested the mediating and moderating effects of the covariates on the relationship between dependent and independent variables.

The threats to external validity in this study were minimal. However, in any quantitative study, selection bias should be addressed. The possibility existed that the sample attained may not be representative of the population to which the results would be generalized. For example, the final sample may be overly representative of urban law enforcement officers when in fact most of law enforcement officers in the State of Ohio (the study's population) are from rural and suburban agencies.

Another external threat was the possibility of the researcher's expectations being communicated unintentionally to the participants. In survey research, this may typically occur as participants review briefing material outlining the study, or in the biasing of the survey questions themselves. To counter these issues, care was taken to craft the pre-survey briefing material in a manner to only reveal the nature of the study in general terms. Question biasing was addressed using an established measurement instrument. Internal threats to validity such as history, maturation, and pre-test issues were addressed.

Common construct validity issues, such as inadequate explanation of variables prior to their operationalization, and hypothesis guessing, had also been addressed.

Access to participants was achieved either directly through the agency head or via a profession-based website available to potential participants. This study employed both strategies depending upon agency demographics. For example, large agency participation was solicited differently than smaller agencies. Institutional Review Board approval was obtained prior to solicitation of participants. Recruitment of participants involved no coercion in any form. Confidentiality was and will continue to be maintained; I will not have access to personally identifying information as it was not inquired of participants before, during, or after the study. Data was collected and stored through a secure web-based survey site. A nominal incentive was provided to participants at the completion of the survey.

Agency heads or profession-based websites acted as gatekeepers to participants. In the initial contact with the gatekeepers, it was stressed in writing that this study required voluntary participation from participants. While I, as the researcher, could not control demands made by agency heads to potential participants, I did stress to them that the study's validity hinges on voluntary participation by individuals under their authority. Additionally, the informed consent given to participants prior to taking the survey ensured the four components of competence, disclosure, understanding, and voluntariness (Emanuel, Abdoler, & Stunkel, 2016).

Population

The population in this study was local, township, and county law enforcement officers in the State of Ohio, which included about 24,000 such officers divided over more than 750 agencies. The population did not include federal or state law enforcement officers. Such inclusion would not have added value to this study, as these entities are not representative of both groups of the independent variable, a crucial factor in this study.

The target population included all sheriff's deputies, municipal police officers, and township police officers within Ohio. There was no attempt to solicit all individual officers from the target population to participate in this study; only a representative sample. While a smaller target population, such as municipal, township, and county law enforcement officers from within one specific county in Ohio may have proven more manageable, this avenue of pursuit would have risked not achieving an adequate number of participants for a reasonable statistical power. Additionally, such a plan utilizing a smaller target population would significantly limit the chance of obtaining a sufficient sample size to satisfy this study's design.

According to the U. S. Department of Justice, Bureau of Justice Statistics (BJS), there were 678 local law enforcement agencies (municipal and township), and 88 country sheriff's offices in the State of Ohio in 2008 (U. S. Department of Justice Bureau of Justice Statistics, 2011). This is the most current data available from the BJS. Within these agencies, there are over 24,000 sworn full-time law enforcement officers (Peace

Officer Training Commission, 2010). These approximately 24,000 Ohio law enforcement officers comprised the target population.

Sample of Population

To be able to draw valid conclusions and generalize the results to the study's population, a sample must be drawn that is representative of the entire population (Frankfort-Nachmias & Nachmias, 2008). The sample must include all the important characteristics of its overall population. Simultaneously, it was important to capture a representative number of participants from both groups of the independent variable. To efficiently accomplish this, a convenience sample was drawn from the approximately 24,000 Ohio law enforcement officers utilizing the Ohio Fraternal Order of Police (FOP). This organization was contacted and asked to distribute the study's survey to potential officer participants.

Additionally, agency heads from several major municipal, township, and county law enforcements agencies were contacted and requested to distribute the study's survey to their sworn officers. As the researcher in this study, I did not have direct contact with the participants. Data were collected through SurveyMonkey, an Internet survey service designed to collect, analyze, and store data. My only contact with participants was through the written invitation to participate.

Power analysis. To determine the appropriate sample size, the researcher must first determine the standard error, or level of accuracy, acceptable for the study (Frankfort-Nachmias & Nachmias, 2008). In this study, the independent variable is whether a participant's law enforcement agency administered a polygraph examination as

part of the officer's hiring process. The dependent variables are comprised of various indicators measuring the law enforcement officer's tolerance of police misconduct. Three statistical tests were run using SPSS 21.0. First, the Mann-Whitney u test was appropriate for determining differences between two groups on an ordinal variable. Second, the independent samples t-test was run after combining the three dependent variables into a composite variable, thus upping the level of measurement to ratio. Finally, a logistic regression was run which explored the extent of covariates' mediation and moderation between variables.

G*Power 3.1.9.2 software (Faul, Erdfelder, Lang, & Buchner, 2007) computed the sample size for the statistical tests. Table 1 illustrates the sample sizes for each statistical test. Appendix A displays the raw G*Power 3.1.9.2 analysis results.

Table 1

*G*Power Analysis of Sample Size for Statistical Tests*

	Research questions	Alpha	Effect size	Power	Sample
Mann-Whitney u test	1, 2, & 3	.05	0.5	0.95	184
Logistic regression	1, 2, & 3	.05	n/a	0.95	85

Data Collection

Participants were recruited from local, township, and county law enforcement officers in Ohio. Officers received an invitation to participate in the study through the Ohio Fraternal Order of Police (FOP) or directly from their agency head. Besides

information related to the independent and dependent variables in the study, the survey instrument asked for demographic information including department size, setting, and educational level of sworn personnel. The survey also inquired as to the officers' tenure in their agency, their rank, and their education level. It did not inquire as to name, age, gender, or other personal identifying information.

Prior to participation in the study, participants received an informed consent electronically through SurveyMonkey, an Internet service allowing researchers to collect, analyze, and store data. The informed consent advised them that their participation in the study was voluntary, that they may discontinue participation at any time, and that their confidentiality would be protected before, during, and after the study. Participants indicated consent by clicking the appropriate box "I consent." For participants who indicated they did not consent, the online survey was immediately terminated.

An adapted survey tool created within SurveyMonkey collected the data in this study. The survey was an adapted version of the Klockars Scale (Klockars et al., 2000), a scale designed to capture officer perceptions of police misconduct. The Klockars Scale is discussed in detail later in this chapter. The data collected was secured in the web-based SurveyMonkey service of which I have sole and complete control.

As this was a quantitative study, there were no requirements for follow-up interviews after the completion of participation. Upon completion of the study, participants received a message thanking them for their participation as well as researcher contact information. Participants were also free to abandon the study at any point prior to completion.

Participants were thanked, through electronic communication, for their participation in the study, and invited to contact the researcher with questions or concerns. Otherwise, there were no additional follow up requirements for the researcher or participants. As this study incorporated an established survey instrument for its data collection, a pilot study was not used in this study.

Instrumentation

The assessment instrument used to collect the data in this study was a modified version of the survey (Appendix B) originally used in the Enhancing Police Integrity Project (EPIP), a University of Delaware project published originally in 2000 and sponsored by the National Institute of Justice, a division of the U. S. Department of Justice. The EPIP survey, commonly known as the Klockars Scale (Klockars et al., 2000), measured police officers' understanding of agency rules concerning police misconduct and their overall perceptions of misconduct, including their expectations for disciplinary action in the face of misconduct, and their willingness to report misconduct.

The Klockars Scale survey was an appropriate measurement instrument for measuring law enforcement officers' perception of police misconduct, the primary dependent variable in this study. The survey was originally administered in 2000 to a near identical sample of participants as the sample sought in this study (Klockars et al., 2006). The survey required participant officers to examine 11 brief case scenarios involving some form of police misconduct ranging from the most minor of infractions, to serious transgressions and dereliction of duty. Then, using a Likert scale involving seven questions, each with five levels of response, participants assessed the level of seriousness

they perceived each item of misconduct to be. A scoring system ranked their perceptions allowing for statistical analysis of the results.

The Klockars Scale was originally designed for measuring officers' perceptions of misconduct by agency. It approached the topic of police corruption through the lens of police integrity rather than police corruption as previous research has suggested (Klockars et al., 2006). The Klockars Scale survey analyzed specific law enforcement agencies using the tabulation of officers' scores within a given agency to arrive at an agency-specific score. For the purposes of the present study, scores were assessed for individual officers rather than for entire law enforcement agencies. This alteration in scoring was necessary to achieve the goal of identifying relationships between officers who have been subjected to a pre-employment polygraph and those that have not (the independent variable) on their perceptions of police misconduct (the dependent variable). However, this alteration will be transparent to the participants, and the instrument will remain substantively unchanged. Permission to use the Klockars Scale in this study was granted by Dr. Maria Haberfeld and Dr. Sanja Kutjnak-Ivkovic, two of the Klockars Scale's developers, via email communication (Appendix C).

Reliability and validity values for the Klockars Scale have not been formally assessed in previous studies. However, several major studies have been undertaken using the Klockars scale with like populations, and strong correlations between populations have been shown with Spearman's r value averaging approximately 0.85. One such study, conducted by the original research team, followed up on the Klockars Scale study

of 2000 employing a test-retest strategy to determine the reliability the Klockars Scale (Klockars et al., 2006).

Klockars et al. (2000), to measure police integrity in local police departments nationwide, developed the Klockars Scale. Surveying 3,235 police officers across 30 police departments of varying size in a convenience sample. They discussed at length validity and reliability issues and potential biases of the sample selected (Klockars et. al., 2000). As their sample was one of convenience, generalizations over the population was not possible.

Klockars et.al. (2000) understood that the validity of the Klockars Scale relied heavily on the candidness of participant responses. The authors took several steps to ensure validity of these responses. First, participants were assured anonymity and confidentiality in their answers, and anonymity in their identities. The authors were cognizant of common suspiciousness often encountered by participants in police research and exceeded standards for communicating the confidential nature of the survey. To this end, the participants were asked only basic demographic information, and standard demographic information regarding gender, race, or ethnicity was omitted.

Second, participants were questioned only about their opinions and not actual behaviors. This was important to ensure candid responses. The hypothetical scenarios of police misconduct presented to the participants ranged from minor integrity issues such as discourtesy to citizens, to more serious transgressions such as abuse of arrest authority and excessive use of force. Third, near the end of the survey, the participants were asked two questions regarding the validity of their responses. One of the two questions asked

whether the participant answered the questions honestly. With 2.2 percent of responses in the negative, these surveys were discarded and not included in the analysis.

Finally, the survey questions were designed to minimize the temptation for participants to manipulate responses to display a favorable impression. Additionally, any substantial manipulation would have been apparent in the correlation coefficients in the answers. This was not the case in the study as the correlation between the six questions was high.

Later, Kutnjak Ivkovic (2005) used the Klockars Scale to survey police officers in Croatia ($N = 1,649$) and Finland ($N = 378$), comparing them to the previously established sample from the United States ($N = 3,235$) in Klockars et. al. (2000). While the results showed that the officers in Croatia and Finland viewed as more serious the problems in some of the case scenarios than their American counterparts, the scores from all three countries displayed remarkable consistency (Vito, Wolfe, Higgins, & Walsh, 2011). Recently, Vito, Wolfe, Higgins, and Walsh (2011) applied the Klockars Scale to police middle managers. Surveying 208 police officials the rank of sergeant and above using the Klockars Scale, they found that results obtained from the police managers were consistent with the results from the 3,235 police officers obtained in the original Klockars Scale survey in 2000.

Since the Klockars Scale's inception in 2000, approximately 20,000 police officers worldwide have been administered the scale over numerous studies of police integrity. Some of these studies in the United States involved hundreds of police officers

per study (Chappel and Piquero, 2004; Greene, Piquero, Hickman & Lawton, 2004; Pogarsky and Piquero, 2004; Schafer and Martinelli, 2008).

Operational Definition of Variables

The operational definition of the independent variable (a law enforcement agency's use of the polygraph in the hiring process) is whether a participant law enforcement officer had been required to take and pass a polygraph examination as a prerequisite to his or her hiring by their law enforcement agency.

Three dependent variables measured the officer's perception of police misconduct. These dependent variables are derived from the measurement instrument, the Klockars Scale, and are described in detail below. The officer participant's score on the Klockars Scale, the survey instrument used in this study, operationalizes the dependent variables. Scores were derived via a Likert-type scale (1 – *lowest* to 5 – *highest*). There were three dependent variables (DV) defined as follows:

Tolerance for Police Misconduct (DV)

The officer participant's score on the seriousness component on the Klockars Scale defined the dependent variable of officer tolerance for police misconduct. Using the case scenario system, the Klockars scale measured, in two of its seven case scenario questions, how serious an officer views a given police misconduct.

Opinion on the Appropriate and Expected Discipline for Police Misconduct (DV)

The officer participant's score on the expected discipline component on the Klockars Scale defined the dependent variable of officer opinion on the appropriate and

expected discipline for police misconduct. The Klockars Scale measured, in two of its seven case scenario questions, the severity of discipline an officer should and would receive for a given police misconduct.

Willingness to Report Police Misconduct (DV)

The officer participant's score on the willingness to report component on the Klockars Scale defined the dependent variable of officer willingness to report police misconduct. The Klockars Scale measured, in two of the seven case scenario questions, the willingness of an officer to report a given police misconduct.

There were three covariates in this study: educational level of officers, tenure of officers, and officer rank. The following defined each covariate:

Educational Level

Educational level was a covariate and defined as the highest level of academic education obtained and completed by an officer. It was divided into four categories: graduate degree, bachelor's degree, some college, and high school diploma or GED.

Tenure in Agency

Tenure was a covariate and defined as the length of time in years the officer has been employed with his or her current law enforcement agency, and was divided into four categories: more than 15 years, 11-15 years, 6-10 years, and 5 years or less.

Rank in Agency

Rank was a covariate representing an officer's position within the agency. Rank was determined as either supervisory or non-supervisory. Supervisory was defined as any civil service rank of sergeant or above.

Table 2 charts the operationalization of the variables.

Table 2

Operationalization of Variables

Variable type	Variable name	Variable source	Potential responses	Level of measurement
Independent	Polygraph taken for pre-employment screening	Were you subjected to a polygraph...	Yes, No	Nominal
Dependent	Tolerance for police misconduct	How serious do you consider...	Not at all serious, Slightly serious, Neutral, Moderately serious, Very serious	Ordinal
		How serious do most officers consider...	Not at all serious, Somewhat serious, Neutral, Serious, Very serious	Ordinal
	Opinion of appropriate and expected discipline for police misconduct	What discipline do you think SHOULD follow...	None, Verbal reprimand, Written reprimand, Period of suspension without pay, Demotion in rank, Dismissal	Ordinal
		What discipline do you think WOULD follow...	None, Verbal reprimand, Written reprimand, Period of suspension without pay, Demotion in rank, Dismissal	Ordinal
	Willingness to report police misconduct	Would YOU report the behavior...	Definitely not, Possibly, Neutral, Probably, Definitely yes	Ordinal
		Would FELLOW OFFICERS report the behavior...	Definitely not, Possibly, Neutral, Probably, Definitely yes	Ordinal
Covariates	Educational level	Educational level	High school or	Ordinal

		GED, Some college, Bachelor's degree, Graduate degree	
Tenure	Tenure	0-5 years, 6-10, 11-15, 15+	Ratio
Rank	Rank	Supervisory, non-supervisory	Nominal

Note. Capitalized words under Variable Source reflect how they appear in the survey instrument. Variable Source information shown is abbreviated for clarity.

Measurement of Variables

To measure the independent variable, the use of the polygraph as a pre-employment screening tool, participants responded that they either were subjected to a pre-employment polygraph or were not. Their responses were analyzed against each of the scores from the dependent variables. The dependent variables were measured by the participant's calculated score on the Klockars Scale.

Participant scores were calculated with a system like the one developed by Klockars et. al. (2000). However, the scoring system was slightly modified to align with the assessment of individual officers rather than the assessment of various law enforcement agencies, as intended by the Klockars Scale. Participants were separated by the independent variable group: having submitted to a pre-employment polygraph, or not. Scores for the dependent variables were calculated from participant's score on all seven questions for all 11 case scenarios, and compared to the independent variable for analysis while controlling for the six covariates.

Table 3 represents the seven questions, and their answer options. These seven questions were asked for all 11 case scenarios.

Table 3

Measurement for Survey Questions: Case Scenario Assessment Options

Question number	Question	Value labels
1	How serious do YOU consider this behavior to be?	[1] Not at all serious [2] Slightly serious [3] Neutral [4] Moderately serious [5] Very serious
2	How serious do MOST POLICE OFFICERS IN YOUR AGENCY consider this behavior to be?	[1] Not at all serious [2] Slightly serious [3] Neutral [4] Moderately serious [5] Very serious
3	Would this behavior be regarded as a violation of official policy in your agency?	[1] Definitely not [2] Possibly [3] Unsure [4] Probably [5] Definitely yes
4	If an officer in your agency engaged in this behavior and was discovered doing so, what if any discipline do YOU think SHOULD follow?	[1] None [2] Verbal reprimand [3] Written reprimand [4] Period of suspension without pay [5] Demotion in rank [6] Dismissal
5	If an officer in your agency engaged in this behavior and was discovered doing so, what if any discipline do YOU think WOULD follow?	[1] None [2] Verbal reprimand [3] Written reprimand [4] Period of suspension without pay [5] Demotion in rank [6] Dismissal
6	Do you think YOU would report a fellow police officer who engaged in this behavior?	[1] Definitely not [2] Possibly [3] Unsure [4] Probably [5] Definitely yes
7	Do you think MOST POLICE OFFICERS IN YOUR AGENCY would report a fellow police officer who engaged in this behavior?	[1] Definitely not [2] Possibly [3] Unsure [4] Probably [5] Definitely yes

(table continues)

Note. From "The Measurement of Police Integrity," by C. Klockars, S. Kutnjak Ivkovich, W. Harver, and M. Haberfeld, 2000, *National Institute of Justice: Research in brief*. Reprinted with permission.

Data Analysis Plan

Software Used in the Study

This study used the Statistical Package for the Social Sciences (SPSS Statistics) version 21.0 statistical software for the data analysis. G*Power 3.1.9.2 (Faul et al., 2007) determined the sample sizes for the Mann-Whitney u test and logistic regression.

Data Cleaning and Screening

Prior to the statistical analysis, I used SPSS software to cleanse and screen the data for missing values and reverse coding (Green & Salkind, 2014). Determination of several types of errors, and duplicate cases were checked for as well. I also verified all variables for proper coding, ensured value labels were accurate, and missing data was properly coded.

Research Questions and Associated Hypotheses

The following were the research questions and their corresponding hypotheses. The hypotheses were stated as both null (H_0) and alternative (H_A).

RQ1. Do law enforcement officers who took a polygraph examination as a condition of employment experience a greater level of intolerance for police misconduct, after controlling for educational level, tenure, and rank?

H_0 1. There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's level of tolerance for police misconduct.

H_{A1}. Officers who took a polygraph examination as a condition of employment experienced a greater level of intolerance in their officers for police misconduct.

RQ2. Is there a relationship between an officer taking a polygraph examination as a condition of employment and an officer's opinion on the appropriate and expected discipline for police misconduct, after controlling for educational level, tenure, and rank?

H₀₂. There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's opinion on the appropriate and expected discipline for police misconduct.

H_{A2}. There is an association between an officer's taking of a polygraph examination as a condition of employment and an officer's opinion on the appropriate and expected discipline for police misconduct.

RQ3. Is there a relationship between an officer taking a polygraph examination as a condition of employment and an officer's willingness to report police misconduct, after controlling for educational level, tenure, and rank?

H₀₃. There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's willingness to report police misconduct.

H_{A3}. There is an association between an officer's taking of a polygraph examination as a condition of employment and an officer's willingness to report police misconduct.

Statistical Analysis of Hypotheses

The analysis plan involved examining the relationship of the pre-employment polygraph examination, the independent variable (IV), on officer tolerance for police misconduct, officer opinion of appropriate and expected discipline for police misconduct, and officer willingness to report police misconduct, the three dependent variables (DVs) in the study. It also involved the controlling of certain covariates' effect on the relationship between the IV and the DVs.

The hypotheses were primarily tested using the Mann-Whitney u test. The Mann-Whitney u test is primarily used to determine differences between two groups on ordinal or continuous variables (Hart, 2001). In this study, the test shed light on whether perceptions of officer misconduct differed between the two groups of the independent variable (officers who had taken a pre-employment polygraph or those that had not). The Mann-Whitney u test is an alternative to the independent-samples t-test in cases where the dependent variables are ordinal as opposed to continuous (Tabachnick & Fidell, 2007).

Statistical Assumptions

There were several assumptions that underlie the Mann-Whitney u Test (Hart, 2001); three assumptions were regarding the study design, and one assumption was determined by the nature of the data. First, the dependent variable must be either continuous or ordinal. Second, the independent variable must be categorical containing two groups. Third, there must be independence of observations; that is, there is no

relationship between the observations in each group of the independent variable—each group must have different participants.

The final assumption of the Mann-Whitney u Test involved the collected data. The scores from both groups of the independent variable must maintain similar distributions. SPSS Statistics will determine this assumption (Hart, 2001). Should the scores for the independent variable groups have been dissimilar, the Mann-Whitney u Test may still be used; however, the interpretation will have involved using the mean ranks of each group of the independent variable rather than the median score for each group.

Threats to Validity and Reliability

External Validity Threats

The researcher should address potential external threats to validity in all quantitative methodological studies (Creswell, 2009). Understanding the interaction effect of the selection of participants and the setting where the instrument used was vital in being able to generalize the results to others. Recognizing that samples are rarely perfect representations of the larger population, to generalize the results across the population, care should be taken to avoid selection bias. Selection bias results when the sample is not representative of the population. In this study, participants were municipal, township, and county law enforcement officers selected from a sample of a larger population of local and county law enforcement officers within Ohio. This study did not intend to generalize its results beyond this scope. For example, the results of this study

should not apply to law enforcement officers outside of Ohio, or federal law enforcement officers anywhere.

Another potential external threat to external validity occurs when the researcher's expectations are, in some manner, communicated to participants. To address this potential threat, an established instrument scale served for data collection. The researcher had virtually no voice in the significant survey questions given to participants. Although the Klockars Scale survey was slightly modified to apply to this study, the substantive questions focusing on the dependent variables remain unaltered.

Finally, variables that are defined too specifically can add a threat to external validity. In this study, the dependent variables were operationalized using Klockars Scale definitions. The Klockars Scale was previously employed in similar studies of law enforcement personnel, where this threat to external validity was not realized.

Internal Validity Threats

Threats to internal validity in a quantitative methodology refer to the extent by which changes measured in the dependent variable can be attributed to the independent variable. In other words, the question arises as to whether the results measure what they intend to measure. Each potential internal threat should be addressed carefully prior to the study. In this study, there was no history, maturation, and pre-test concerns as the participants were only tested once, and not in multiple instances that may account for these threats. Instrumentation concerns are not a factor as the instrument used, the Klockars Scale, was not significantly altered over the course of the study. A statistical regression threat is also not a factor as scores from participants were only obtained after

their selection to participate. To combat a differential of participant selection threat, participants were selected on the basis of only one independent variable—that is, whether or not their agency uses the polygraph examination in the pre-employment screening process.

Construct Validity Threats

Perhaps the most common threat to construct validity is an inadequate explanation of the variables prior to their operation in the study. Variables must be adequately defined so as not to leave ambiguity as to what the study is intending to measure. In this study, Tables 2 and 3, shown earlier, thoroughly defined each variable and identified the corresponding survey question related to their measurement.

Hypothesis guessing by participants is a valid concern for any survey design and a threat to construct validity. Participants attempting to determine the purpose of the research can have a negative impact on their responses, regardless of whether their determination is correct. To address this possibility, the survey instrument is designed to focus of police misconduct issues and the participants' perceptions of various forms of misconduct. The survey instrument avoids prolonged questioning and emphasis on the pre-employment polygraph examination.

Ethical Procedures

Throughout any research study involving human participants, their rights and privacy must be of utmost importance. In this study, law enforcement officers employed

by municipal, township, and county law enforcement agencies were the participants.

Access to participants by agency was obtained in one of two ways:

1. By agreement between the researcher and the head of the agency or their designee
2. Through participant access to one the profession-based website of the Ohio Fraternal Order of Police (FOP)

It is important to note that, in most instances, participants were generally free to participate in surveys involving their profession without regard their agency's approval. This study's survey did not in any manner involve identification of the participant's agency, personnel within the agency, or levels of police misconduct within the agency. However, agreement between the researcher and the agency official must be reached for a given agency official to distribute a survey agency-wide. I sought this approval from the heads of several major law enforcement agencies within the State of Ohio.

Institutional Review Board (IRB) approval was necessary to conduct research to ensure the protection of human subjects. It was sought prior to any solicitation of participants. This protection encompassed the assessment of risk to vulnerable populations, confidentiality, and voluntariness of the study. Prior to the collection of data, IRB approval to conduct the study was obtained. The IRB approval number is 04-04-17-0411986.

Recruitment of participants for this study involved no coercion or invasion of individual privacy in any manner. Confidentiality was ensured, and an informed consent obtained from each participant. Risks and benefits of the study were explained to each

participant and it was made expressly clear that participation was optional at all times during the study.

The role of the researcher was also disclosed to participants prior to their agreement to participate. My professional experience as a manager in a federal law enforcement agency may have lent itself to potential biasing in this study. However, the quantitative, non-experimental design of this study served to counteract biasing on the part of the researcher in that it limited the researcher's role in the study.

If a participant upon reading the informed consent chose not to consent to the study, the online survey program immediately terminated. Likewise, if during the survey participation a participant decided to withdraw, the participant can simply close the online survey and no data would be recorded.

Data was collected and stored in the secured servers of SurveyMonkey, an Internet service providing data collection and analysis services. SurveyMonkey will store the data for a five-year period, after which time data are destroyed per company policy. Apart from SurveyMonkey personnel, I have sole access to the data through SurveyMonkey's password-protected website.

All data collected was be anonymous, with no personal information identifying the participants collected other than agency demographics and participants' rank within their respective agencies. Name, age, and gender were not collected from participants at any time during this study.

A nominal incentive was given to participants completing the survey. Grant and Sugerman (2004) determined that incentives in human research are innocuous unless

certain factors adhere to the nature of the study. These factors include research in which participants will only consent to the research if the incentive is relatively large due to an aversion to the study, where there is a dependency between participant and researcher, and where risks are high. In this study, none of these factors applied.

Summary

This quantitative study explored the relationship between the pre-employment polygraph examination in law enforcement agencies and officers' perception of police misconduct. A cross-sectional survey design framed the study. Survey data was collected from participant law enforcement officers regarding their perceptions of police misconduct. These perceptions were analyzed against whether the law enforcement officers were required to submit to a pre-employment polygraph examination to obtain employment with their respective agencies. Any relationships established or not established may begin to shed light on the effectiveness of the polygraph in the law enforcement hiring process and potentially usher in further research in this understudied area.

Chapter four includes detailed statistical analysis, including descriptive statistics, of the data collected using charts and graphs to analyze potential relationships between the dependent and independent variables.

Chapter 4: Results

Introduction

The purpose of this quantitative study was to determine whether the polygraph examination, given as a law enforcement pre-employment screening tool, effectively eliminates candidates who may be susceptible to higher rates of police misconduct. To accomplish this, I assessed the perceptions of police misconduct among Ohio law enforcement officers who had taken a polygraph test as a condition of employment versus those who had not. Through analysis, differences in the perceptions of police misconduct between these two groups were sought.

The overarching question in this study was whether there were differences in perceptions of police misconduct between law enforcement officers who took a preemployment polygraph examination and those who did not. This overarching question was divided into three research questions and hypotheses, as follows:

Research Questions

RQ1. Do law enforcement officers who took a polygraph examination as a condition of employment experience a greater level of intolerance for police misconduct, after controlling for educational level, tenure, and rank?

RQ2. Is there a relationship between an officer taking a polygraph examination as a condition of employment and an officer's opinion on the appropriate and expected discipline for police misconduct, after controlling for educational level, tenure, and rank?

RQ3. Is there a relationship between an officer taking a polygraph examination as a condition of employment and an officer's willingness to report police misconduct, after controlling for educational level, tenure, and rank?

Null Hypotheses

To address these questions, the Mann-Whitney u test, independent samples t-test, and logistic regression were used to test the following null hypotheses.

H_{01} . There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's level of tolerance for police misconduct.

H_{02} . There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's opinion on the appropriate and expected discipline for police misconduct.

H_{03} . There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's willingness to report police misconduct.

Data Collection

Data were collected over a 6-week period from various municipal, township, and county sworn law enforcement officers in the State of Ohio. The Ohio Fraternal Order of Police (FOP) provided this study's survey instrument to its membership via various internal websites. The FOP has a membership of approximately 25,000 sworn and nonsworn personnel (Ohio Fraternal Order of Police, 2017). Due to the anonymity given to participants in this study, it is difficult to determine the exact number of respondents

attributed to any one source. However, I estimate that approximately 50% of the study's respondents were the result of publication by the FOP. Additionally, several Ohio law enforcement agencies published the study's survey link to its officers. This accounted approximately for the other 50% of the study's respondents.

Of the sample of 190 respondent officers, most were from municipal agencies ($n = 148$, 78%); county deputies and township officers were not as well represented in the sample ($n = 31$, 16%) and ($n = 11$, 6%), respectively. All participants were sworn Ohio law enforcement officers of various ranks. During the data collection period, a total of 214 surveys were collected via SurveyMonkey; however, 24 of them were deemed unusable for the study as only demographic information (and, in some cases, no information other than the informed consent) was completed by the respondent. There were 190 surveys returned that I used for data analysis.

In the study's initial proposal, I expected that the Ohio Association of Chiefs of Police and the Buckeye Sheriff's Association would assist in the distribution of the study's survey. However, both organizations declined to participate in the study's survey distribution. Also in the proposal, I anticipated that the study's survey would be distributed to the 20 largest police departments in Ohio for distribution through its ranks. This proved difficult at best, as most police departments queried did not respond to the request to distribute the survey. As noted in Chapter 3, nine of the 20 largest police departments in Ohio currently require a polygraph examination for their officer candidates. I anticipated that the response rate from these 20 police departments would result in an approximately even distribution of the two groups of the independent variable

(polygraph or not). However, without these 20 police departments' direct participation, obtaining a sample representing both groups of the independent variable depended mostly on chance. Nevertheless, the result was that the sample obtained with respect to both groups of the independent variable (polygraph or no polygraph) approximately mirrored, by coincidence, the national rate of 62% of law enforcement organizations nationwide presently giving a preemployment polygraph (polygraphed $n = 106$, 56%; non-polygraphed $n = 84$, 44%). An approximately even distribution of both groups of the independent variable was necessary to allow for a meaningful analysis of the data.

Summary Statistics

There were 190 cases used in this study made up entirely of sworn law enforcement officers within the State of Ohio. Most respondent officers were from municipal law enforcement agencies (78%), and the remainder from county sheriff's departments and township police agencies (22%). Nearly half of the officers had attended some college (44%), and nearly half had bachelor or graduate degrees (49%). Most of the officers had over 15 years of employment with their respective agency (51%), and most were nonsupervisory within their agencies (60%).

Neither gender, age, nor ethnicity of the respondent law enforcement officers were captured by the survey instrument, as these demographics were not relevant to the study. Additionally, not capturing these demographics ensured the confidential nature of the officers' participation. However, level of education, tenure with agency, rank, and the type of law enforcement agency currently employing the officers (municipal, county, or township) were captured and are described in Table 4.

Table 4

Summary Statistics of Respondent Officers

<i>Characteristics</i>	<i>n</i>	<i>%</i>
Agency type		
Municipal	148	78
Township	11	6
County	31	16
Educational level		
High School or GED	12	6
Some college	83	44
Bachelor's degree	60	32
Graduate degree	31	17
Tenure with agency		
0-5 years	34	18
6-10 years	30	16
11-15 years	23	12
Over 15 years	97	51
Rank within agency		
Nonsupervisory	114	60
Supervisory	76	40

Note: Percentages may not represent 100% due to rounding.

Analysis Process

I designed this study to determine relationships between the preemployment polygraph examination used by law enforcement agencies and the tolerance for police misconduct displayed by officers of these agencies. The survey instrument selected captured data on three variables: the seriousness by which officers viewed various acts of police misconduct (stated another way, officers' tolerance for police misconduct), the discipline officers expected to receive should they commit these acts of misconduct, and the officers' willingness to report others for committing such misconduct.

To analyze the data on these variables, I first conducted Mann-Whitney u tests on the three variables, respectively, to determine if there were differences in the officers' scores on each of the variables between officers who had taken the polygraph as a pre-employment condition and those who had not. Intending to measure an independent variable on three dependent variables required a non-parametric test, and the Mann-Whitney u test was therefore chosen for the initial analysis (Hart, 2001).

Next, I created a composite dependent variable for general tolerance for police misconduct by combining the three dependent variables, and reran the Mann-Whitney u test to determine possible relationships between the pre-employment polygraph examination and the composite variable. This additional test served to elevate the measurement level of the dependent variable from ordinal to ratio, and provided a more granular view of the statistical relationship between variables. The rerun of the Mann-Whitney u test using the composite variable bore comparable results to the Mann-Whitney u tests run separately for each dependent variable.

I then used the composite dependent variable (general tolerance for police misconduct) to run an independent samples t test, as this parametric test, given that the assumptions were met, would provide a stronger statistical analysis than the non-parametric Mann-Whitney u test (Hart, 2001).

Next, I ran several separate tests of logistic regression. The first was to ascertain the effects educational level, tenure on the job, and rank on the participants' general tolerance of police misconduct. Then, logistic regressions were run on various

combinations of the covariates (educational level, tenure, and rank) to determine if they would influence the relationship between the independent and dependent variables.

Results

Mann-Whitney *U*-Test Assumptions

The Mann-Whitney *u* test has four assumptions that must be considered for proper use of the test; three of the assumptions relate to the study's design, while the fourth relates the data collected in the study. All four assumptions for the Mann-Whitney *u* test have been met.

The first assumption is that the study employs at least one continuous or ordinal dependent variable. This study had three ordinal dependent variables, each involving a different perception of police misconduct. The second assumption is that the study's independent variable has two categorical groups. The independent variable in this study answered yes or no to whether respondents have passed a polygraph examination as part of their hiring process. Finally, there must be independence of observations, meaning that there must be no relationship between each group of the independent variable; that is, no participant can be in more than one group of the independent variable. This study met this requirement as each respondent either had taken the polygraph examination or had not, and it was not possible for a respondent to be in both groups.

The fourth assumption of the Mann-Whitney *u* test, which involves the study's data, is that the distribution scores of both groups of the independent variable are evaluated for equality. This assumption determines if the Mann-Whitney *u* test uses the mean or median of the scores during the analysis. In this study's analysis, the

distributions of both groups of the independent variable were similar for all three dependent variables (Figures 1, 2, and 3), and for the fourth composite dependent variable (Figure 4). Therefore, the fourth assumption relating to the critical distribution of the study’s data was met and the results can therefore be reported based on the medians of the scores as opposed to the means.

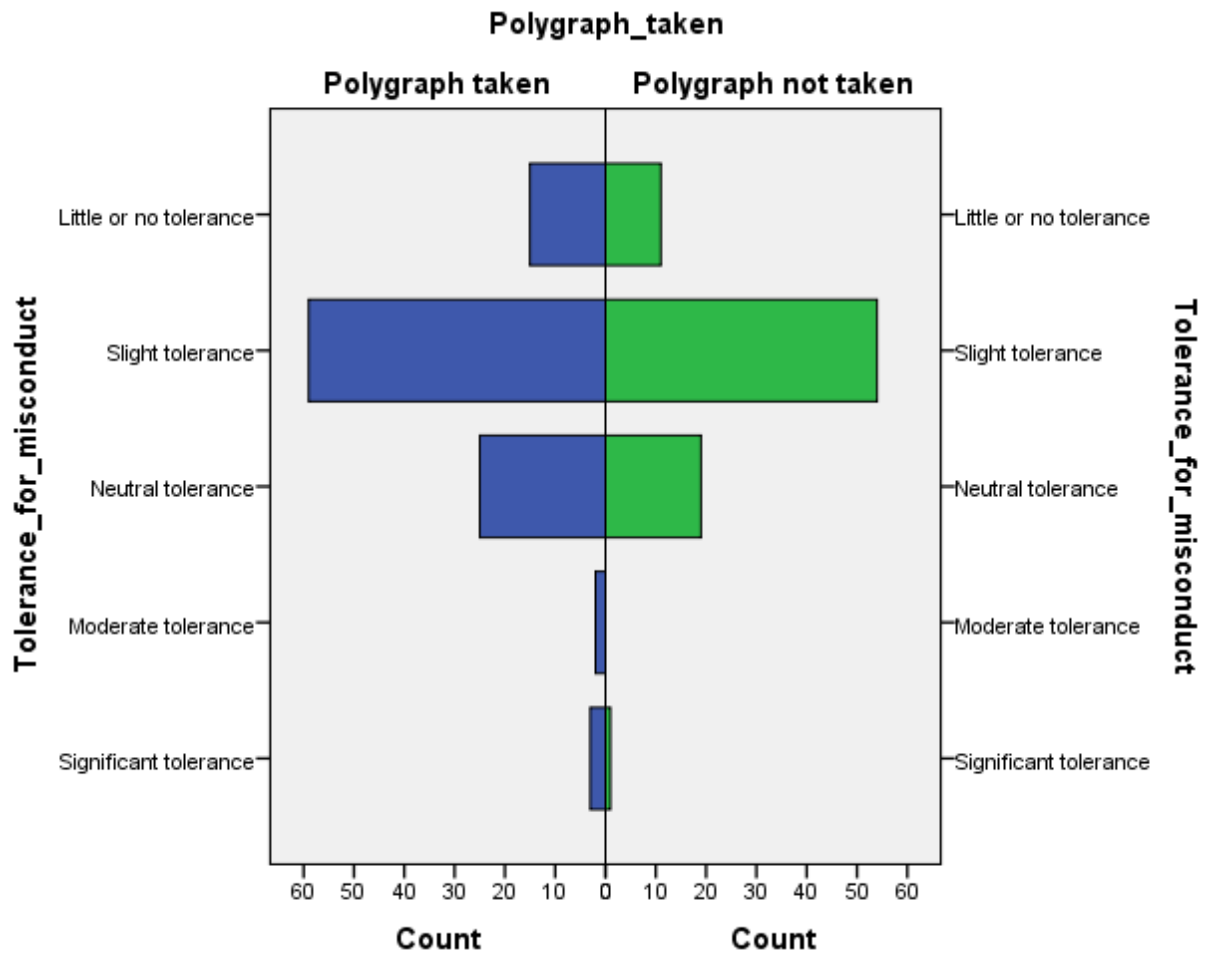


Figure 1. Graph of distribution of independent variable (polygraph taken or not) over the dependent variable tolerance for misconduct for the Mann-Whitney *u*-test equality of variance assumption

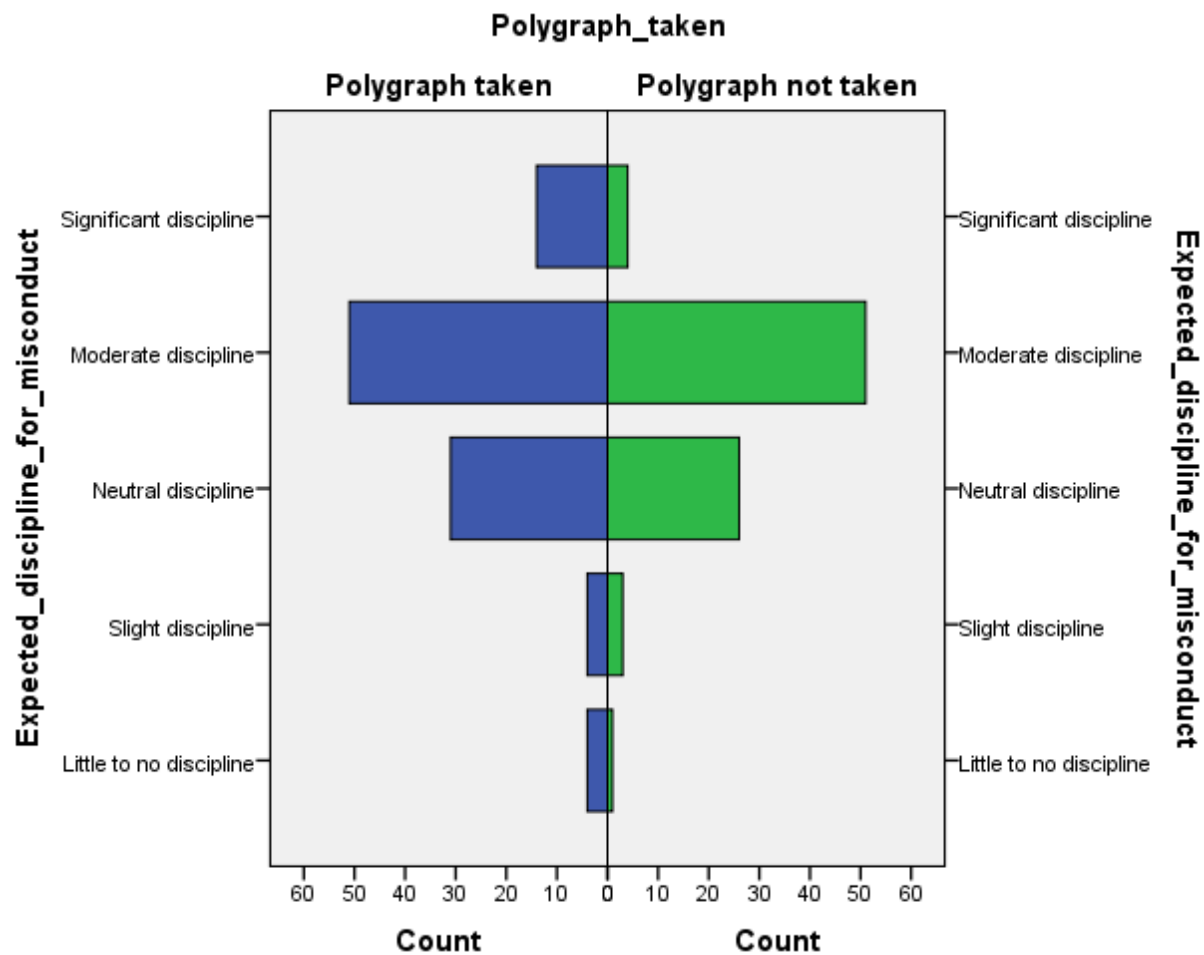


Figure 2. Graph of distribution of independent variable (polygraph taken or not) over the dependent variable expected discipline for the Mann-Whitney u -test equality of variance assumption

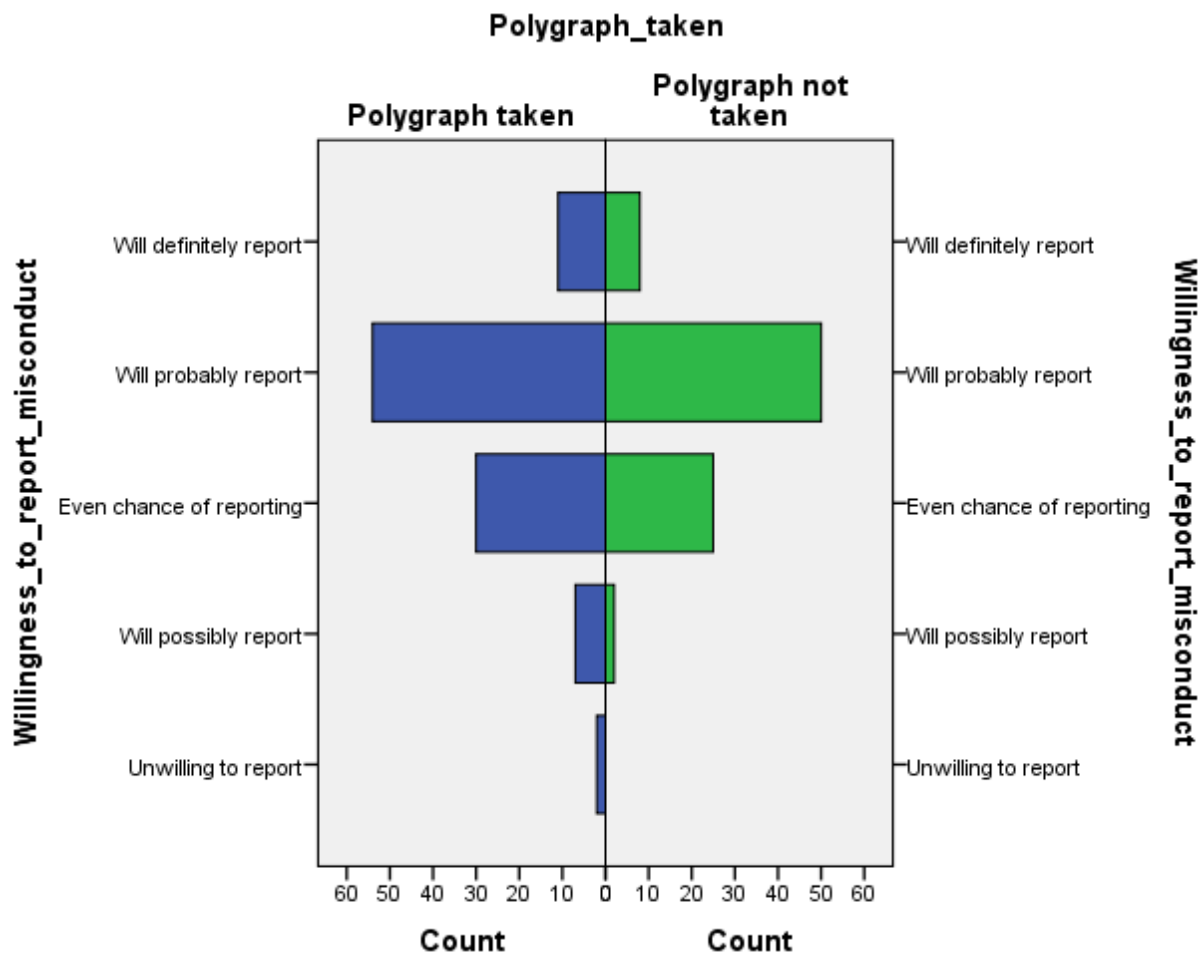


Figure 3. Graph of distribution of independent variable (polygraph taken or not) over the dependent variable willingness to report for the Mann-Whitney u -test equality of variance assumption

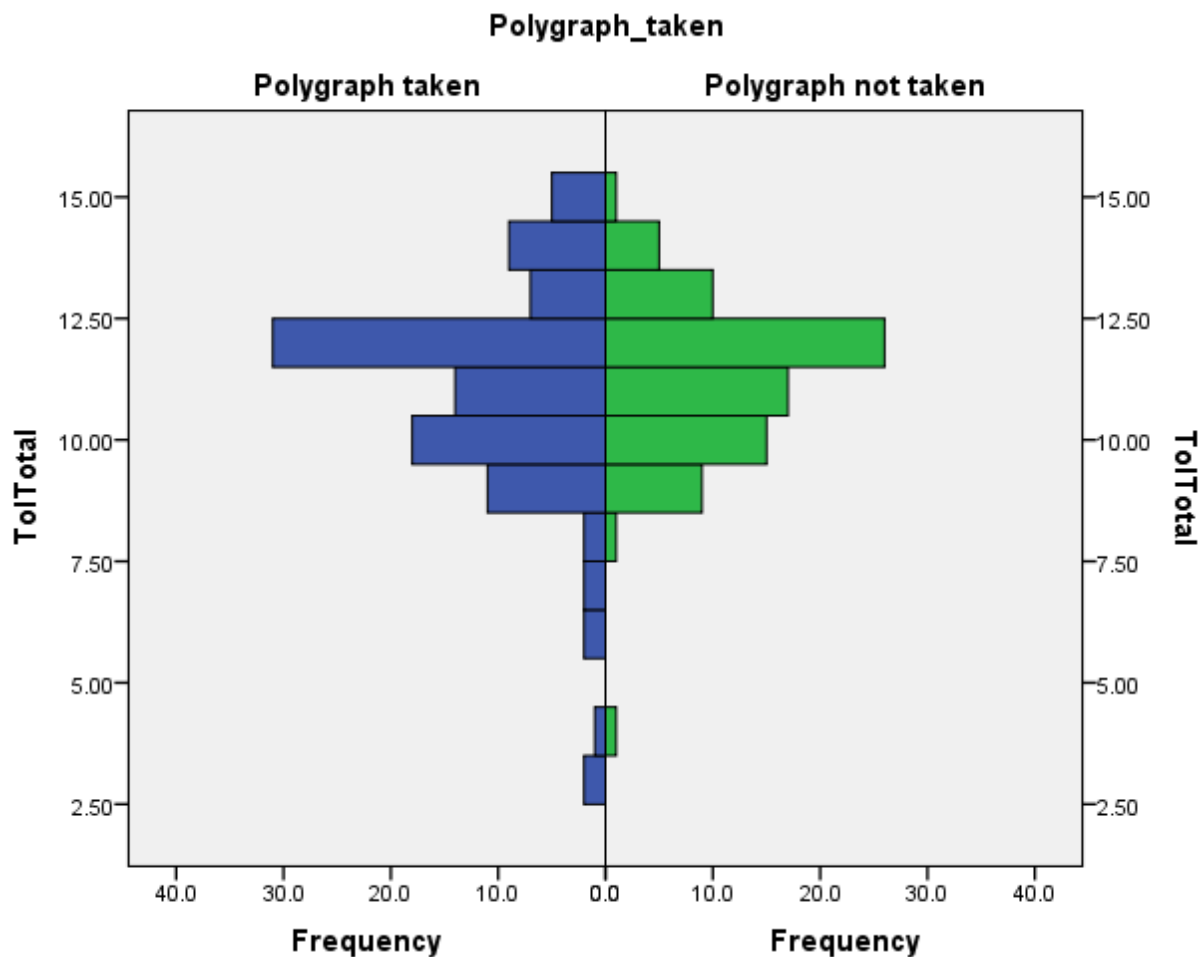


Figure 4. Graph of distribution of independent variable (polygraph taken or not) over the composite dependent variable of general tolerance for police misconduct for the Mann-Whitney *u*-test equality of variance assumption

Mann-Whitney *U*-Test Analysis

The three dependent variables, each corresponding to one of the three research questions, were tested separately with the Mann-Whitney *u* test.

DV: Tolerance for misconduct / RQ1. Do law enforcement officers who took a polygraph examination as a condition of employment experience a greater level of

intolerance for police misconduct, after controlling for educational level, tenure, and rank?

H₀₁. There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's level of tolerance for police misconduct.

H_{A1}. Officers who took a polygraph examination as a condition of employment experienced a greater level of intolerance for police misconduct, than officers who did not take such an examination, after controlling for educational level, tenure, and rank.

Results. A Mann-Whitney *u* test was run to determine if there were differences in tolerance for misconduct scores between officers that have taken a polygraph as a pre-employment condition and those that have not. Distributions of the tolerance for misconduct scores for officers that have taken a polygraph versus those that have not were similar, as assessed by visual inspection. Tolerance for misconduct score was not statistically significantly different between polygraphed officers (*Mdn* = 4.00) and non-polygraphed officers (*Mdn* = 4.00), $U = 4278.500$, $z = -.557$, $p = .578$. This test revealed no association between the independent and dependent variable. The null hypothesis (*H₀₁*), therefore, cannot be rejected.

DV: Expected discipline / RQ2. Is there a relationship between an officer taking a polygraph examination as a condition of employment and an officer's opinion on the appropriate and expected discipline for police misconduct, after controlling for educational level, tenure, and rank?

H_{02} . There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's opinion on the appropriate and expected discipline for police misconduct.

H_{A2} . Officers who took a polygraph examination as a condition of employment expected harsher discipline for police misconduct than officers who did not take such an examination, after controlling for educational level, tenure, and rank.

Results. A Mann-Whitney u test was run to determine if there were differences in expected discipline scores between officers that have taken a polygraph as a pre-employment condition and those that have not. Distributions of the expected discipline scores for officers that have taken a polygraph versus those that have not were similar, as assessed by visual inspection. Expected discipline score was not statistically significantly different between polygraphed officers ($Mdn = 4.00$) and non-polygraphed officers ($Mdn = 4.00$), $U = 4376.500$, $z = -.253$, $p = .801$. This test revealed no association between the independent and dependent variable. The null hypothesis (H_{02}), therefore, cannot be rejected.

DV: Willingness to report / RQ3. Is there a relationship between an officer taking a polygraph examination as a condition of employment and an officer's willingness to report police misconduct, after controlling for educational level, tenure, and rank?

H_{03} . There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's willingness to report police misconduct.

H_{A3}. Officers who took a polygraph examination as a condition of employment were more willing to report police misconduct than officers who did not take such an examination, after controlling for educational level, tenure, and rank.

Results. A Mann-Whitney *u* test was run to determine if there were differences in willingness to report scores between officers that have taken a polygraph as a pre-employment condition and those that have not. Distributions of the willingness to report scores for officers that have taken a polygraph versus those that have not were similar, as assessed by visual inspection. Willingness to report score was not statistically significantly different between polygraphed officers (*Mdn* = 4.00) and non-polygraphed officers (*Mdn* = 4.00), $U = 4193.000$, $z = -.797$, $p = .426$. This test revealed no association between the independent and dependent variable. The null hypothesis (*H₀₃*), therefore, cannot be rejected.

Composite variable / RQs 1-3. To increase the level of analysis, I formed one composite variable by combining the three dependent variables (tolerance of police misconduct, expected discipline for misconduct, and willingness to report misconduct). To do this, I added the scores of each dependent variable together resulting in ranked scores between 0 and 15.00.

Results. A Mann-Whitney *u* test was run using a composite variable of general tolerance for police misconduct, which combined the three variables in this study to increase the dependent variable's measurement level from ordinal to ratio. Distributions of the general tolerance for police misconduct scores for officers that had taken the polygraph examination and those that had not were similar, as assessed by inspection.

General tolerance for police misconduct scores were not statistically significantly different between polygraphed officers ($Mdn = 11.50$) and non-polygraphed officers ($Mdn = 11.00$), $U = 4339.500$, $z = -.333$, $p = .739$. Therefore, none of the three null hypotheses (H_{01} , H_{02} , or H_{03}) can be rejected.

Table 5 summarizes the results of the Mann-Whitney u test for all dependent variables and the composite variable.

Table 5

Mann-Whitney U Tests Determining Differences Between Polygraph and Non-Polygraph Takers with Respect to Tolerance of Misconduct, Expected Discipline, Willingness to Report, and Composite Variables

	Median	U	z	p
Tolerance of misconduct	4.00	4231.500	-.574	.566
Expected discipline	4.00	4308.500	-.330	.741
Willingness to report	4.00	4141.000	-.830	.407
Composite variable	11.00	4305.00	-.314	.754

Note: The composite variable is a combining of the other three variables: Tolerance of Misconduct, Expected Discipline, and Willingness to Report.

Independent Samples T -Test Assumptions

There are six assumptions to the independent samples t test, three of which relate to the study design and three to the characteristics of the data collected. The first three assumptions, having one dependent variable measured at the continuous level, one

dichotomous independent variable, and independence of observations, were all met by this study.

The fourth assumption of the independent samples t test is that the data contain no significant outliers in either group of the independent variable that may exert a considerable influence on the study. In this study, there were six outliers including two of significance. Once it is determined that the outliers are not the result of data entry or data measurement errors, there are several methods for dealing with them (Laerd Statistics, 2015). First, a non-parametric test (such as the Mann-Whitney u test) can be run instead of the parametric independent samples t test. Second, the outlier(s) may be modified by replacing the outliers' values with ones less extreme. Third, the dependent variable may be transformed. Finally, the outliers may simply be included in the analysis, notwithstanding violation of the fourth assumption. I chose to include the outliers in the analysis, then rerun the analysis excluding them and compare the difference in scores.

The fifth assumption of the independent samples t test is that the dependent variable should be normally distributed for each group of the independent variable. This was not the case with the analysis run that included the outliers, thus, the assumption was not met. However, when the analysis was subsequently run minus the outliers, there was normality and this assumption was met.

The sixth assumption is that there must be homogeneity of variances. As with the fifth assumption of normality, homogeneity of variances was violated in the analysis containing the outliers, as assessed by Levene's test for equality of variance ($p = .030$),

but the assumption was met in the subsequent analysis minus the outliers ($p = .086$), again using Levene's test.

Independent Samples *T*-Test Analysis

An independent-samples t test was run to determine if officers who took the pre-employment polygraph and officers who did not differ significantly in their general tolerance for police misconduct. There were six outliers, two of them extreme, that remained unaltered in this model (an assumption violation), as the t test would be run a second time, minus the outliers, for comparison purposes (Figures 5 and 6). Used for the analysis were 105 officers who took the polygraph and 85 who did not. Polygraph takers' general tolerance for police misconduct ($M = 11.048$, $SD = 2.318$) was slightly lower than polygraph non-takers' ($M = 11.259$, $SD = 1.656$). The polygraph takers' score was $-.211$ ($SE = .289$) higher than the non-polygraph takers. The difference between the two groups is not statistically significant: $t(185) = -.731$, $P = .466$ (see Table 6). Therefore, the null hypotheses cannot be rejected.

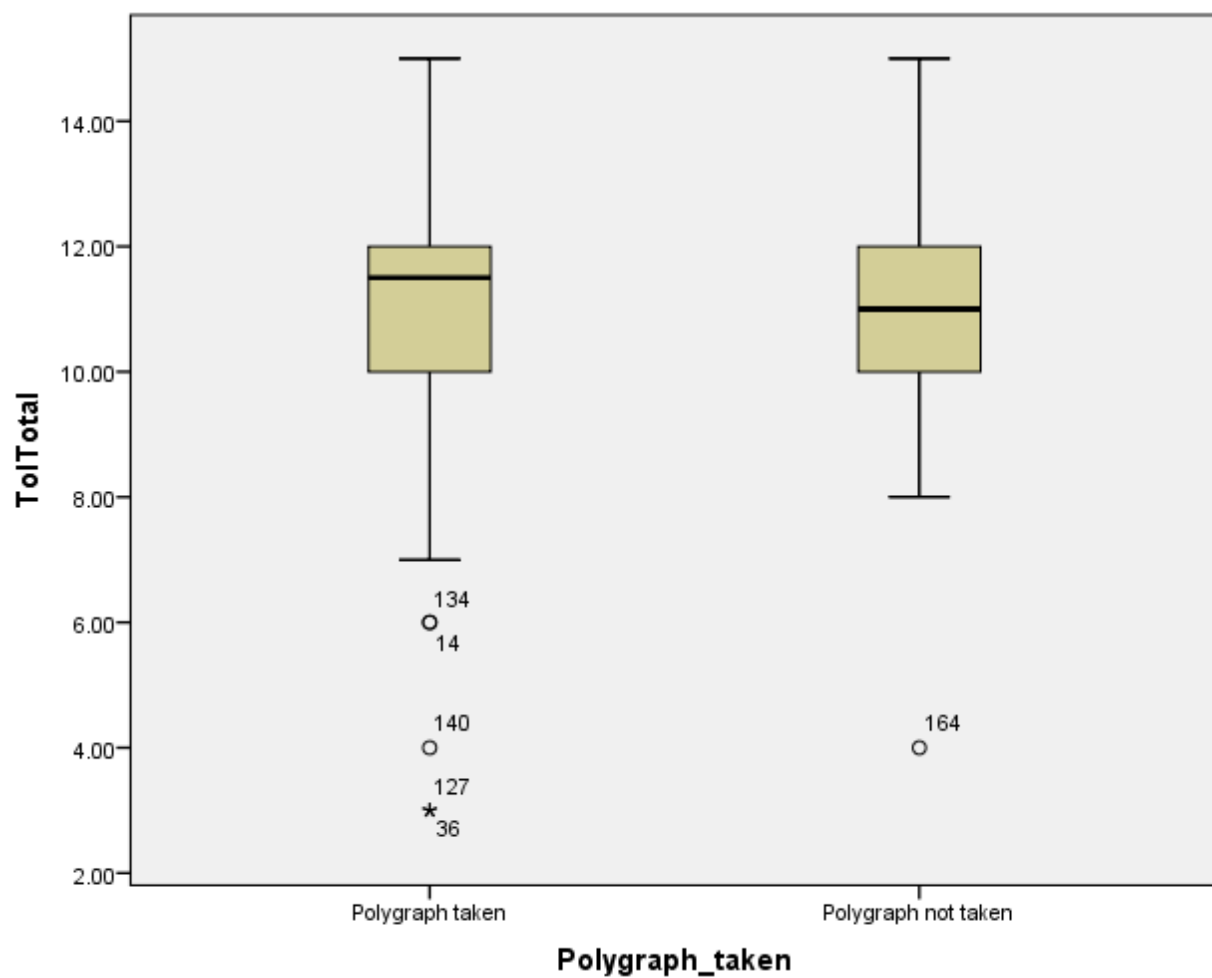


Figure 5. Boxplot showing outliers which violate an assumption of the independent-samples t Test (outliers included in data set)

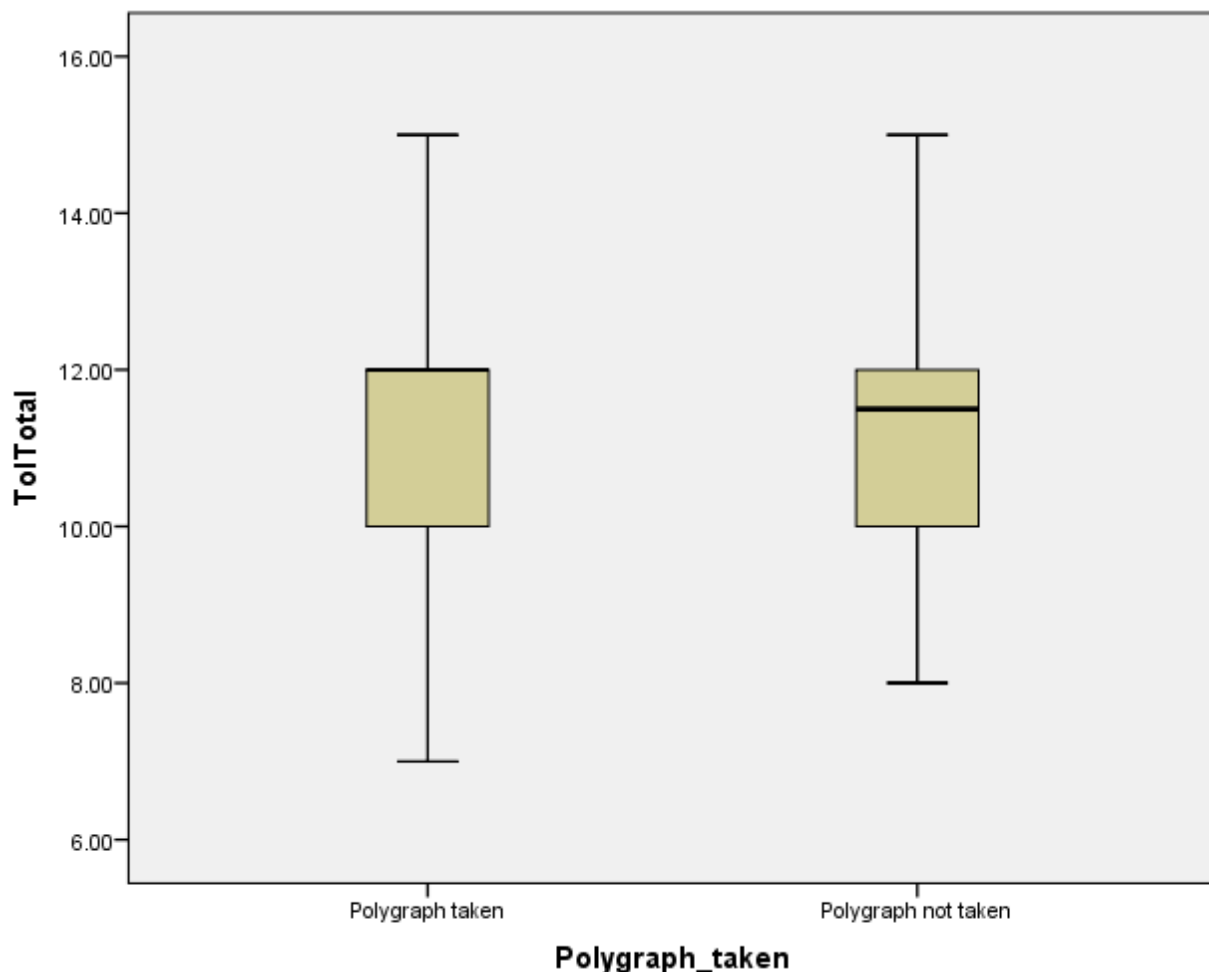


Figure 6. Boxplot showing no outliers which meets an assumption of the independent-samples *t* Test (outliers deleted from data set)

General tolerance for police misconduct, the dependent variable, for each level of polygraph (taken or not) were not normally distributed, another assumption violation, as assessed by inspection of the Normal Q-Q Plots (Figures 7 and 8), and the assumption of homogeneity of variances was also violated, as assessed by Levene's test for equality of variances ($p = .030$). There was no a significant difference in the scores for officers who took the polygraph ($M = 11.048$, $SD = 2.318$) and officers who did not take the

polygraph ($M = 11.259$, $SD = 1.656$); $t(185.287) = -.731$, $p = .466$ (Table 6). There was no statistically significant difference between the means of either level of the polygraph on general tolerance for police misconduct ($p > .05$), and therefore none of the null hypotheses (H_{01} , H_{02} , or H_{03}) can be rejected.

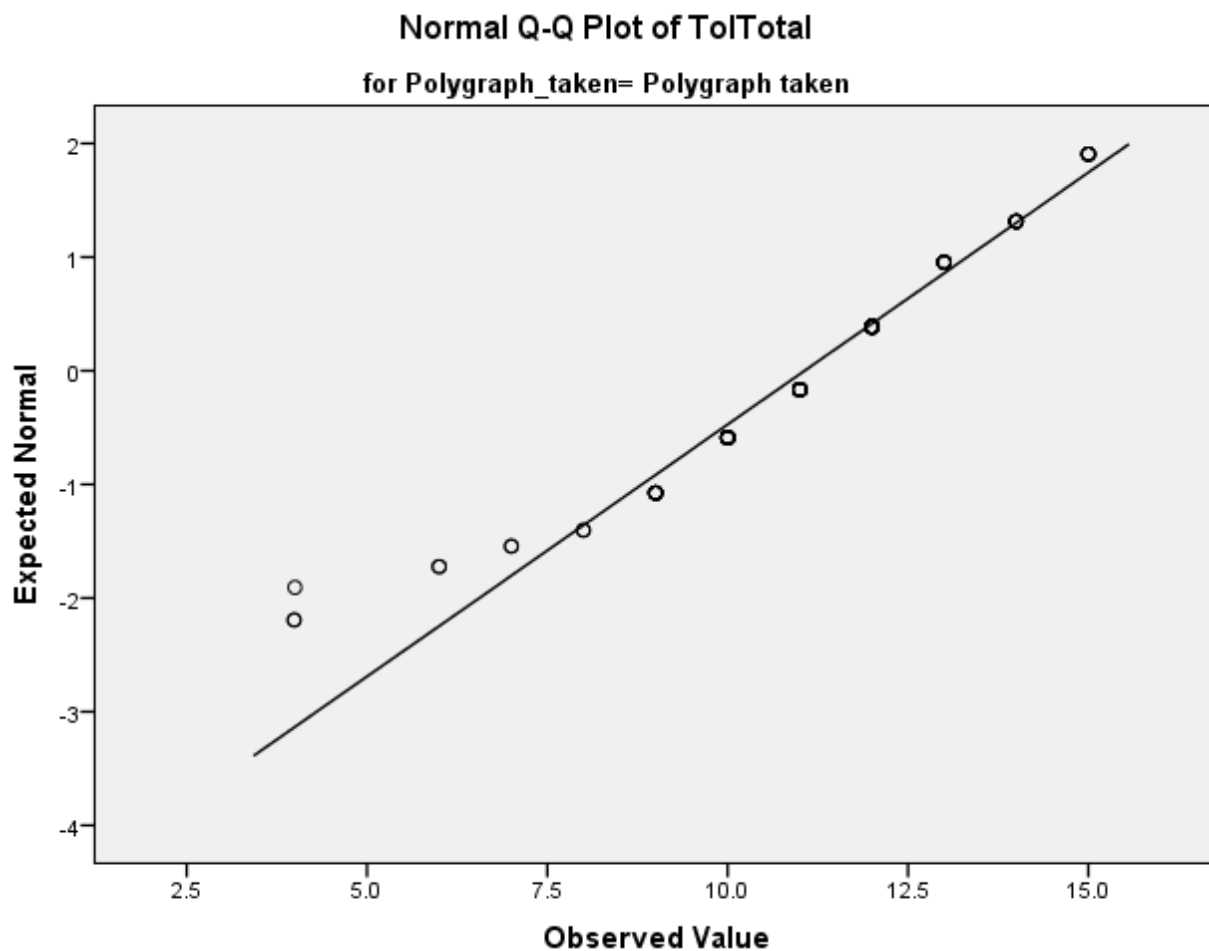


Figure 7. Normal Q-Q Plot for polygraph taken group on general tolerance for police misconduct (with outliers), showing violation of this t -test assumption

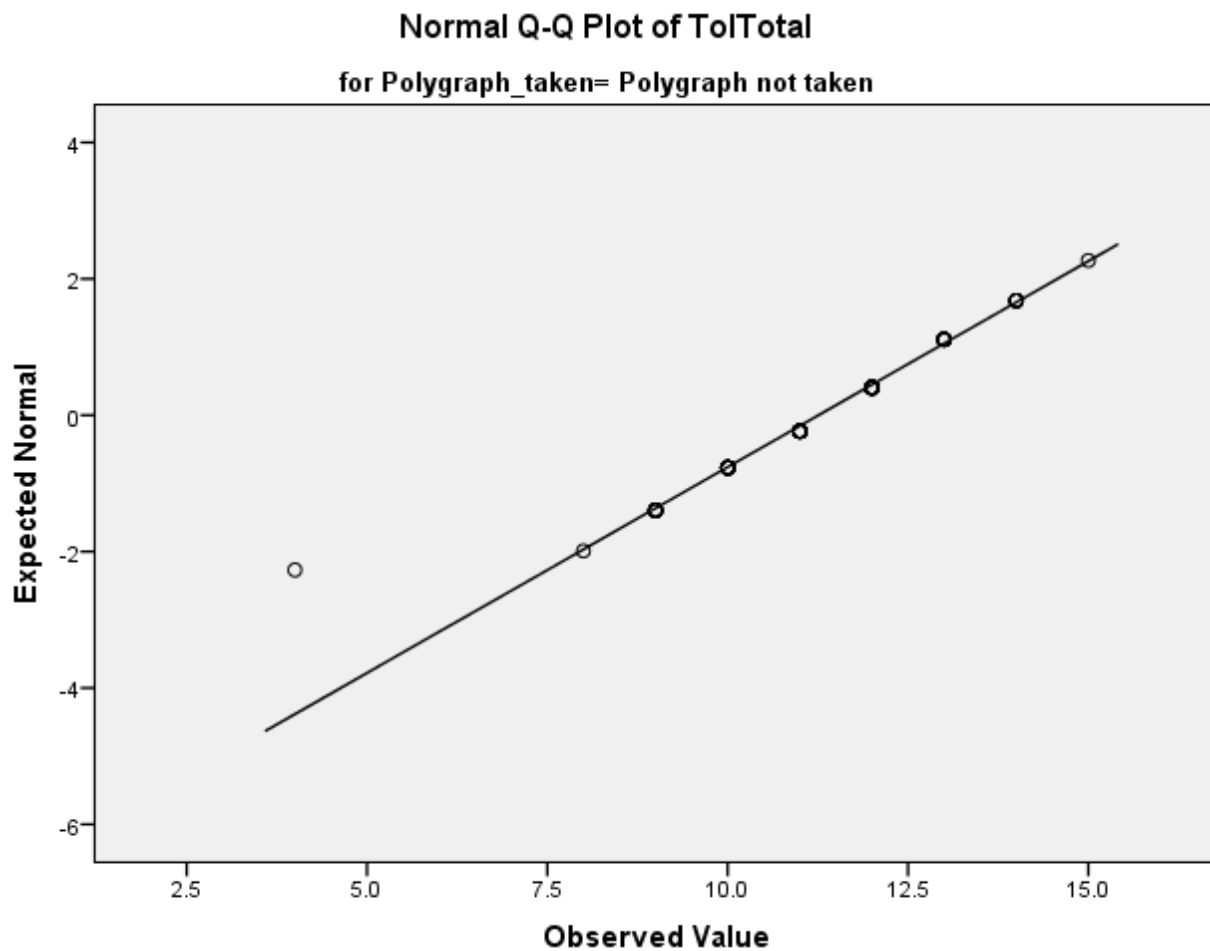


Figure 8. Normal Q-Q Plot for polygraph not taken group on general tolerance for police misconduct (with outliers), showing violation of this t -test assumption

Table 6

Independent Samples T Test Determining Differences Between Polygraph and Non-Polygraph Takers with Respect to General Tolerance for Police Misconduct (Composite Variable) with Outliers Present

	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	95% CI of the Difference	
						Lower	Upper
Polygraph takers	11.048	2.318	-.731	185.287	.466	-.781	.359
Polygraph non-takers	11.259	1.656					

An independent-samples *t* test was run a second time without the six outliers to determine if there were differences in general tolerance for police misconduct between officers who took the pre-employment polygraph and officers who did not. There were 100 cases used for this analysis of officers who took the polygraph and 84 who did not. Polygraph takers' general tolerance for police misconduct ($M = 11.380$, $SD = 1.791$) was slightly lower than polygraph non-takers ($M = 11.345$, $SD = 1.460$). The difference between the two groups is not statistically significant: $t(182) = -.142$, $P = .887$ (see Table 8). Therefore, the null hypotheses cannot be rejected.

The polygraph takers' score was .035 ($SE = .244$) higher than the non-polygraph takers.

General tolerance for police misconduct for each level of polygraph (taken or not) were normally distributed, as assessed by inspection of the Normal Q-Q Plots (Figures 9 and 10), and the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances ($p = .086$). There was not a significant difference

in the scores for officers who took the polygraph ($M = 11.380$, $SD = 1.791$) and officers who did not take the polygraph ($M = 11.345$, $SD = 1.460$); $t(182.000) = .142$, $p = .887$ (Table 7). There was no statistically significant difference between the means of either level of the polygraph on general tolerance for police misconduct ($p > .05$), and therefore none of the null hypotheses (H_{01} , H_{02} , or H_{03}) can be rejected.

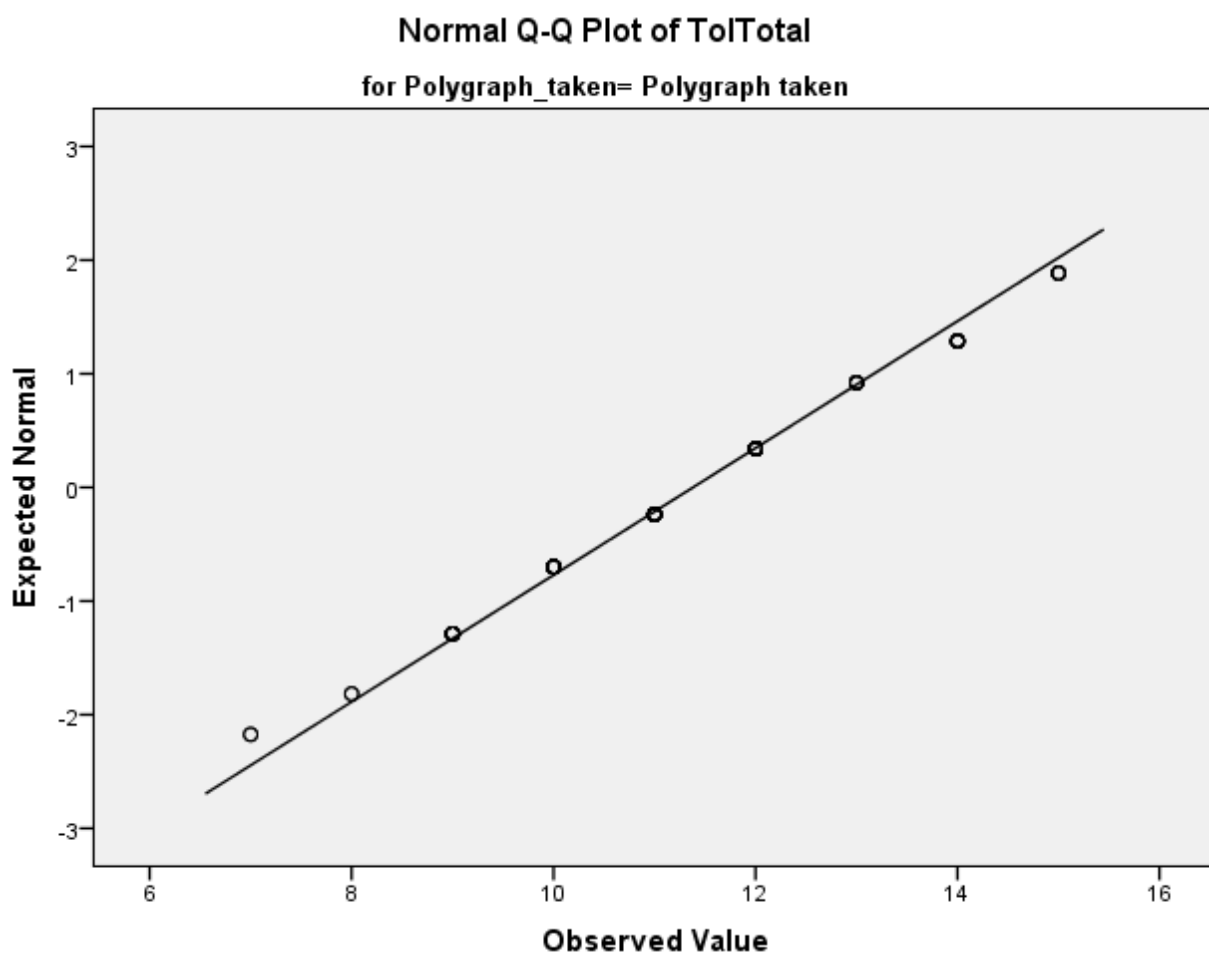


Figure 9. Normal Q-Q Plot for polygraph taken group on general tolerance for police misconduct, with outliers removed, showing t -test assumption being met

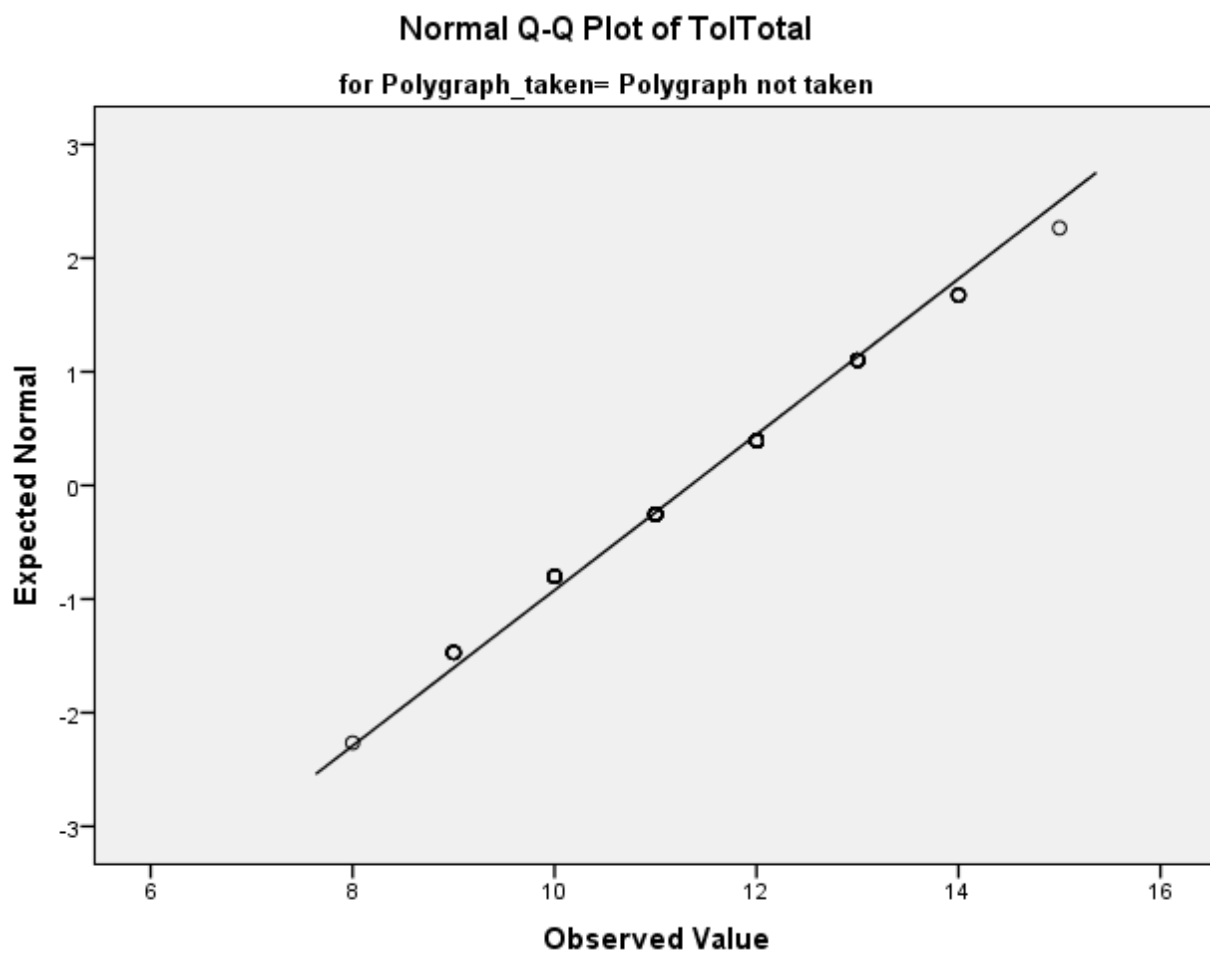


Figure 10. Normal Q-Q Plot for polygraph not taken group on general tolerance for police misconduct, with outliers removed, showing *t*-test assumption being met

Table 7

Independent Samples T Test Determining Differences Between Polygraph and Non-Polygraph Takers with Respect to General Tolerance for Police Misconduct (Composite Variable) with Outliers Deleted

	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	95% CI of the Difference	
						Lower	Upper
Polygraph takers	11.380	1.791	.142	182.000	.887	-.447	.516
Polygraph non-takers	11.345	1.460					

The results of the comparison of both *t* tests (with and without outliers) was that there was less statistical significance ($p = .887$) between the means of either level of the polygraph on general tolerance for police misconduct shown in the independent samples *t* test minus the outliers (Figure 14) than shown on the independent samples *t* test with the outliers ($p = .466$) (Figure 15).

As described above, two independent samples *t* tests were run; one containing the outliers and one without them. The chosen level of confidence for this study was 95%. The *t* test with the outliers generated a confidence interval of -.781 (lower bound) to .359 (upper bound) (Figure 11). The *t* test without the outliers generated a confidence interval of -.447 (lower bound) to .516 (upper bound) (Figure 12). As both these confidence intervals crossed 0, this was consistent with the findings elsewhere in this study that there was no statistical significance between the two groups of the independent variable on the dependent variables ($p > .05$).

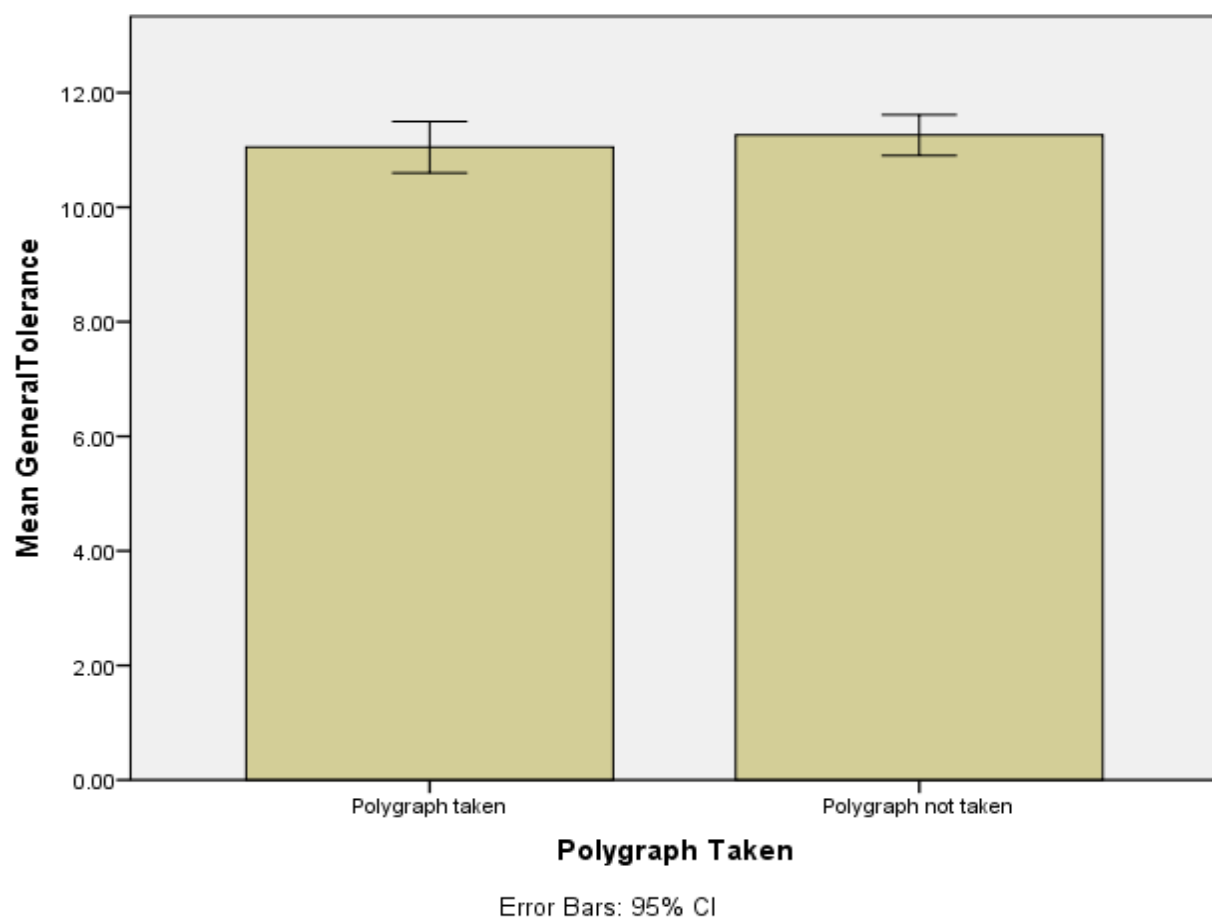


Figure 11. Bar chart showing confidence level for independent samples t test with (outliers present)

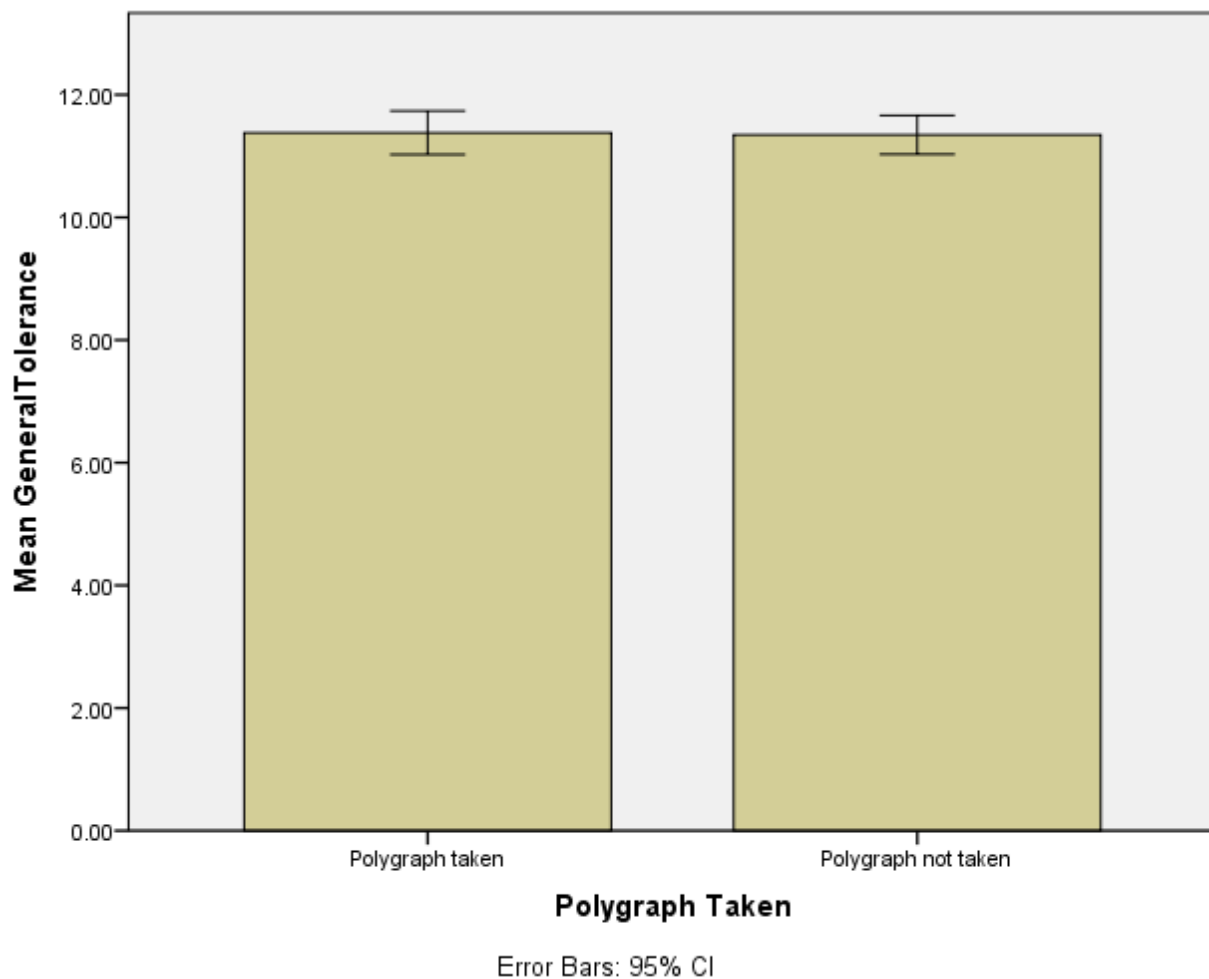


Figure 12. Bar chart showing confidence level for independent samples t test (outliers deleted)

Logistic Regression Assumptions

Logistic regression was also used to analyze the data in this study. There are seven assumptions for logistic regression, four involving the study design and three relating to the characteristics of the data collected. All seven assumptions for logistic regression were met in this study.

The first assumption is that the analysis employs one dependent variable that is dichotomous. To utilize logistic regression, the study's three dependent variables were

converted to one dichotomous composite variable. The second assumption dictates that there are one or more independent variables that are continuous or nominal. This study employed one nominal independent variable (whether a participant had taken a pre-employment polygraph) and three covariates (educational level, tenure, and rank) all nominal in measurement level. The third assumption is independence of observations, meaning that the categories of the dichotomous dependent variable and the nominal independent variables must be mutually exclusive and exhaustive. This study met this assumption. The fourth assumption requires that the study contain a minimum of 15 cases per independent variable. In this study, there were 190 cases used. That number divided by the four independent variables (polygraph, educational level, tenure, and rank) equaled 47.25 cases per independent variable. This exceeds the 15-case minimum and met the fourth assumption.

As mentioned, assumptions 5-7 for logistic regression relate to the collected data. The fifth assumption requires a linear relationship between the continuous independent variables and the logit transformation of the dependent variable. As the independent variables in this study were not continuous, this assumption was met. The sixth assumption requires that the data must not show multicollinearity. Multicollinearity occurs when two or more independent variables are highly correlated with each other. Collinearity statistics were run for the independent variable and the three covariates and the values were well within range to indicate that collinearity did not exist between the independent variable and the covariates. Finally, the seventh assumption of logistic regression is that there should be no significant outliers in the data. Outliers were tested

for using the Case-wise List in SPSS and no outliers were detected. Therefore, all seven assumptions for logistic regression were met for this model.

Logistic Regression Analysis

To perform a logistic regression analysis and satisfy a key assumption of logistic regression that the dependent variable be dichotomous, I transformed the continuous dependent variable of general tolerance for police misconduct into one dichotomous variable indicating an overall tolerance of police misconduct or not. As the continuous variable had been scored 0.00 -15.00, I used the approximate median score of 9.00 as a cutoff and ranked scores of 9.00 and below as having tolerance for misconduct, and 10.00 and above as not having tolerance for misconduct. Therefore, dichotomous scores of 0 = no tolerance, and 1 = tolerance, were established.

Results. A logistic regression was performed to ascertain the effects of educational level, tenure on the job, and rank on the likelihood that participants have general tolerance of police misconduct. Linearity of a continuous independent variable with respect to the logit of the dependent variable (the fifth assumption of logistic regression) did not have to be assessed as all independent variables were nominal. There were no outliers in this model as indicated by the lack of a Case-wise List in the SPSS output. The logistic regression model was not statistically significant, $X^2(4) = 5.742, p > .05$. The model explained 4.1 % (Nagelkerke R^2) of the variance of general tolerance of police misconduct and correctly classified 66.3% of cases. Sensitivity was 3.2%, specificity was 97.6%, positive predictive value was 76%, and negative predictive value was 127.3%. Of the four predictor variables, only one was statistically significant: rank

(supervisor or non-supervisor) ($p = .036$) as shown in Table 8. Supervisors were slightly less likely (52.5%) to be tolerant of police misconduct than non-supervisors.

Table 8

Logistic Regression Predicting Likelihood of General Tolerance of Police Misconduct based on Polygraph Taken, Educational Level, Tenure on Job, and Rank

	<i>B</i>	SE	Wald	<i>df</i>	<i>p</i>	Odds Ratio	95% CI for Odds Ratio	
							Lower	Upper
Polygraph	-.344	.318	1.170	1	.279	.709	.380	1.322
Education	.109	.190	.328	1	.567	1.115	.769	1.616
Tenure	.159	.141	1.281	1	.258	1.173	.890	1.546
Rank	-.747	.356	4.398	1	.036	.474	.236	.952

Note: Polygraph means whether a participant had taken a pre-employment polygraph examination.

Covariate effects. To determine the confounding effects the three covariates in this study (educational level, tenure, and rank) may have had on the participants' perception of police misconduct, four logistic regressions were run. The first such regression involved isolating the independent variable (polygraph taken or not) from the other covariates. Then, regressions isolating each covariate with the independent variable were run to ascertain any unwanted effect the covariates may have had on the independent variable. The p value and odds ratio scores of the independent variable were examined while the independent variable was isolated from the covariates, and examined again together with each covariate, respectively. The unadjusted and adjusted p value and odds ratio scores were similar (all four p values were within .041 of each other, and all four odds ratios were within .023 of each other), indicating that the three covariates, respectively, did not have a confounding effect on the independent variable. Table 9

displays the unadjusted and adjusted p value and odds ratio scores of the independent variable resulting from the logistic regressions.

Table 9

Logistic Regression Showing p value and Odds Ratio of the Pre-Employment Polygraph Effect on Tolerance of Police Misconduct -- Unadjusted and Adjusted for Presence of Covariates

	p	Odds Ratio
Polygraph taken (unadjusted)	.324	.735
Adjusted for educational level	.323	.734
Adjusted for tenure	.330	.737
Adjusted for rank	.283	.712

Finally, three logistic regressions were run on the following combinations of covariates with the independent variable to assess possible confounding effects on the independent variable:

1. Polygraph Taken or Not with Educational Level and Tenure
2. Polygraph Taken or Not with Education Level and Rank
3. Polygraph Taken or Not with Tenure and Rank

These three combinations of covariates with the independent variable resulted in no confounding effect by the combination of covariates on the independent variable (Table 10). The unadjusted and adjusted p value and odds ratio scores were similar (all four p values were within .05 of each other, and all four odds ratios were within .027 of each other), indicating that the three covariates, respectively, did not have a confounding effect on the independent variable.

Table 10

Logistic Regression Showing p value and Odds Ratio of the Pre-Employment Polygraph Effect on Tolerance of Police Misconduct -- Unadjusted and Adjusted for Presence of Combinations of Covariates

	<i>p</i>	Odds Ratio
Polygraph taken (unadjusted)	.324	.735
Adjusted for educational level and tenure	.329	.737
Adjusted for educational level and rank	.279	.710
Adjusted for tenure and rank	.283	.711

Research Question Findings

Finding 1

RQ1. Do law enforcement officers who took a polygraph examination as a condition of employment experience a greater level of intolerance for police misconduct, after controlling for educational level, tenure, and rank?

H₀1. There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's level of tolerance for police misconduct, after controlling for educational level, tenure, and rank.

H_A1. Officers who took a polygraph examination as a condition of employment experienced a greater level of intolerance for police misconduct than officers who did not take such an examination, after controlling for educational level, tenure, and rank.

Answer to RQ1. Officers who took a polygraph examination as a condition of employment do not necessarily experience a greater level of intolerance for police misconduct, regardless of educational level, tenure, and rank. Based on the answer to RQ1, the null hypothesis cannot be rejected and the alternative hypothesis cannot be accepted.

Finding 2

RQ2. Is there a relationship between an officer taking a polygraph examination as a condition of employment and an officer's opinion on the appropriate and expected discipline for police misconduct, after controlling for educational level, tenure, and rank?

H₀2. There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's opinion on the appropriate and expected discipline for police misconduct, after controlling for educational level, tenure, and rank.

H_A2. Officers who took a polygraph examination as a condition of employment expected harsher discipline for police misconduct than officers who did not take such an examination, after controlling for educational level, tenure, and rank.

Answer to RQ2. There is no statistically significant relationship between an officer who has taken a polygraph examination as a condition of employment and the officer's opinion of the appropriate and expected discipline for police misconduct, regardless of educational level, tenure, and rank. Based on the answer to RQ2, the null hypothesis cannot be rejected and the alternative hypothesis cannot be accepted.

Finding 3

RQ3. Is there a relationship between an officer taking a polygraph examination as a condition of employment and an officer's willingness to report police misconduct, after controlling for educational level, tenure, and rank?

H₀3. There is no association between an officer's taking of a polygraph examination as a condition of employment and an officer's willingness to report police misconduct, after controlling for educational level, tenure, and rank.

H_A3. Officers who took a polygraph examination as a condition of employment were more willing to report police misconduct than officers who did not take such an examination, after controlling for educational level, tenure, and rank.

Answer to RQ3. There is no statistically significant relationship between an officer who has taken a polygraph examination as a condition of employment and the officer's willingness to report police misconduct, regardless of educational level, tenure, and rank. Based on the answer to RQ3, the null hypothesis cannot be rejected and the alternative hypothesis cannot be accepted.

Finding 4

The rank of officers (supervisory or non-supervisory) may influence their perception of police misconduct regardless of whether they had taken a pre-employment polygraph examination. Supervisors were slightly more likely to tolerate police misconduct than non-supervisors. This is an additional finding not directly related to the research questions in this study.

Finding 5

The educational level and tenure of officers has no influence on their perception of police misconduct regardless of whether they had taken a pre-employment polygraph examination. This is an additional finding not directly related to the research questions in this study.

Summary

The purpose of this quantitative study was to determine if relationships existed between the polygraph examination, being given as a pre-employment condition to law enforcement officers, and these officers' potential for future misconduct. The study used as a data collection instrument the Klockars Scale, an established tool for measuring the perceptions of police misconduct in law enforcement officers.

Three research questions and corresponding hypotheses were posed that targeted an officers' perception of police misconduct. These scores were analyzed against whether the officers had been subjected to a pre-employment polygraph examination. The findings to all three research questions indicated no significant relationship existed between the pre-employment polygraph examination and an officers' perception of police misconduct. In all three hypotheses, the null hypothesis could not be rejected.

The overarching research question in this study, which fueled the three main research questions, was whether there were differences in perceptions of police misconduct between officers who took the polygraph as a condition of employment and those who did not. As the study's findings indicated that no significant relationships existed between the pre-employment polygraph and any of the three dependent variables regarding officers' perceptions of police misconduct, it is reasonable to conclude that there is no evidence to indicate there are differences in perceptions of misconduct in officers regardless of their polygraph status. Thus, the answer to the overarching question in this study is that there is no relationship between the pre-employment

polygraph examination for law enforcement officers and their perceptions of police misconduct.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this quantitative study was to add to the knowledge of whether the polygraph examination, given as a part of the hiring process of law enforcement officers, effectively eliminated candidates who may be susceptible to higher rates of police misconduct. To examine this question, I perceptions of police misconduct in law enforcement officers and attempted to correlate these perceptions to whether these officers had taken a preemployment polygraph. The goal was to determine if there were differences in the perceptions of police misconduct across both groups of the polygraph variable.

To determine relationships between officers' perception of police misconduct and their preemployment polygraph status, three dependent variables and one independent variable were developed. The three dependent variables, which related to various aspects of police misconduct, were established through coordination with the established Klockars Scale survey of police misconduct (Klockars et al. 2000). Use of the Klockars Scale enabled me to identify three main aspects of evaluating an officer's perceptions of police misconduct: seriousness of misconduct (put another way, an officer's tolerance for misconduct), expected discipline an officer should receive for various acts of misconduct, and an officer's willingness to report such acts of misconduct.

I developed these three aspects evaluating the officers' perceptions into dependent variables and derived separate research questions. The three research questions were sub-questions of the overarching research question of whether there were differences in

perceptions of police misconduct between officers who had taken the polygraph as a condition of employment and those who had not. Additionally, three demographic covariates were identified and tested as potential confounders: educational level of the officer, the officer's tenure with his or her current law enforcement agency, and his or her rank at the time of this study.

The findings of this study indicated a failure to reject the null hypotheses of all three research questions. There was no statistically significant relationship found between an officer's perceptions of police misconduct and whether that officer had taken a preemployment polygraph examination. Additionally, none of the covariates, nor any combination of covariates, contributed an undue influence on the relationship of the independent variable (polygraph or no polygraph) with the dependent variable (officers' perception of police misconduct).

Interpretation of Findings

Extending Knowledge

As the literature review illustrated, law enforcement agencies in the United States have embraced the prescreening of officer candidates with the polygraph examination since the middle of the 20th century (Horvath, 1993; Mark, 2014; Vicianova, 2015). Since then, there has been widespread confidence in law enforcement agencies in the efficacy of the preemployment polygraph examination, to not only eliminate deceptive candidates, but as a tool to predict future professionalism in officers (Handler et al., 2009). Yet, literature involving the success of preemployment polygraph examinations in predicting the potential for future misconduct is scarce, I found in conducting my

literature review. However, since the passage of EPPA in 1988, some researchers have sought to shed light on whether there is justification for such reliance on the polygraph to predict officers' future success (Greene et al. 2004; Handler et al. 2009). This study is one such study.

The findings of this study did not support the assumption that the pre-employment polygraph examination can be relied upon for the prediction of future professionalism in officers. As no relationship, in this study, has been established between the pre-employment polygraph and an officer's perception of police misconduct, it is difficult to reasonably infer that non-polygraphed officers are at greater risk for future police misconduct than their polygraphed counterparts. This assertion supports researchers such as Handler et al. (2009) who argued that law enforcement agencies should not blindly accept the premise that the pre-employment polygraph examination is effective in the face of its identified negative aspects.

In analyzing my data, I found no relationship between a pre-employment polygraph and officers' perception of police misconduct. This finding would imply that regardless of whether an officer is prescreened with a polygraph examination prior to employment, that officer's potential for future involvement in police misconduct cannot be predicted based on the polygraph examination alone. This finding contrasts with studies such as Matthies (2012) and Pynes and Bernadin (1989) that recognized that law enforcement agencies use the preemployment polygraph examination as a predictor of on-the-job performance, as well as Horvath (1993) who found that it is the tendency for

law enforcement agencies to accept polygraph screening of their officers with an elevated level of confidence.

My literature review also referenced an incomplete study undertaken by Forrer et al, (2008) where the hiring practices of a large county sheriff's department in Florida was studied to determine relationships between the preemployment polygraph examination and early termination of deputies. Forrer et al. hypothesized that a significant relationship existed between lack of a preemployment polygraph and early termination, which somewhat mirrors the hypotheses generated in this study. As this study's findings showed no relationship between these variables, this study may serve to complement the work of on by Forrer et al. with respect to identifying relationships, or lack thereof, between the preemployment polygraph examination and job success.

Theoretical Considerations

An underlying, albeit unaddressed, question in this study is why law enforcement agencies continue to rely on the preemployment polygraph examination to predict future professionalism. I offered as a theoretical base Baumgartner and Jones's (1993) PET to explain an organization's inclination for extended periods of stasis until that stasis is punctuated by sporadic change, usually due to crisis. This theory might explain how almost two-thirds of law enforcement agencies in the United States, for over 50 years, have continued to rely on the preemployment polygraph even in the face of convincing evidence of its unreliability (Iacono, 2008). The findings of this study are consistent with the tenets of PET in that the findings call attention to the period of stasis in which law enforcement agencies may find themselves regarding their use of the pre-employment

polygraph, not only as a screening tool, but to predict the success of their candidate officers. As this study's findings indicated that no relationship exists between the preemployment polygraph examination and officers' perception of misconduct, it begs the question of why law enforcement agencies remain in a period of stasis regarding their unjustified reliance on the preemployment polygraph. PET may explain this sometimes-counterproductive organizational behavior.

As a co-theoretical basis for this study, Alvesson and Spicer's (2012) theory of functional stupidity directly challenges the common assumption that organizations only benefit from positive cognitive capacities. Alvesson and Spicer theorized that organizations maintain a certain level of "stupidity" or, more precisely, an absence of reflexivity, an avoidance of justifications, and a myopic approach to issues. This functional type of stupidity helps keep organizations in balance (Alvesson & Spicer, 2012). The findings of this study give credence to the theory of organizational functional stupidity which exemplifies organizations' continued reliance on policy not grounded in meaningful data. Because staff at law enforcement agencies may rely on conventional wisdom about the preemployment polygraph examination rather than informed decision making based upon scientific data, they may fall prey to the theory of functional stupidity.

In Chapter 1 of this study, I postulated that while PET may explain law enforcement agencies' inclination toward stasis in preemployment polygraph screening policy, functional stupidity theory might offer answers as to why. While this study's findings align well with PET in reflecting the current stasis in the state of pre-

employment polygraph testing for law enforcement officer candidates, the findings also target functional stupidity theory as a potential explanation for why law enforcement agencies remain in this stasis. In any case, the study's results suggest the possible presence of both PET and functional stupidity in public organizations requiring the pre-employment polygraph examination.

Limitations of the Study

Several limitations were identified in this study. First, the limited population used (Ohio law enforcement officers), as compared to a broader-based study involving, for example, a cross-section of law enforcement officers throughout the U. S., may have resulted in some selection bias. The histograms shown in Figures 1-3 best illustrate how nearly identical the scores were, across the sample, on the Likert scale for most survey questions. This is likely due to the sample being drawn from the relatively small population of law enforcement officers in the State of Ohio, as opposed to data drawn from a larger population of officers throughout the entire U. S. It is unclear whether the findings drawn from a larger and more diverse population of U. S. law enforcement officers would yield significantly different results. However, this is a distinct possibility, as Ohio law enforcement officers represent only one segment of the nationwide police population. For this reason, potential selection bias cannot be discounted as a potential limitation to this study.

Second, the measurement instrument used in this study, the Klockars Scale, while sound in its authors' original intention to measure perceptions of police misconduct at an organizational level, may be lacking as the best instrument to measure such perceptions at

an individual level. Again, the histograms in Figures 1-3 illustrate how similar the responses were to each hypothetical scenario within the survey. This means that officers, at least within the population of Ohio municipal, county, and township law enforcement agencies, varied little in their perceptions of police misconduct. It is unclear whether this biased the results of this study, and further exploration of the use of this scale on a larger and more diverse population would likely be warranted.

Part of the problem of using the Klockars Scale at an individual level is that the hypothetical scenarios, while covering a wide range of police misconduct, may fail to capture precise perceptual data, while speaking to police misconduct only in general terms. For example, at least four of the eleven hypothetical scenarios proposed situations in which there is a clear and unmistakable felony committed by the officer; for example, scenarios involving bribery, theft, and kickbacks in which the officer was in clear violation. This served to generate very similar responses on the Likert scale from most respondents, leading one to question whether these scenarios effectively contributed to the overall goal of the survey of assessing perceptions of police misconduct, at least on an individual level.

Third, this study had the narrow view of simply establishing whether there is a relationship between pre-employment polygraph examination use in law enforcement agencies and an officer's perceptions of police misconduct. If such a connection could be made, further study to solidify this connection may have been warranted. As reported, the findings of this study were that no such connection between these two variables was made. However, causality was not examined in this study; moreover, the reasons the

polygraph examination may or may not contribute to a prediction of officer success was not examined. This study limited itself strictly to examining the relationship between the variables of polygraph and perceptions of misconduct in officers.

Finally, this study limited itself to the police subdivision of the larger law enforcement arena of yet the still larger public sector in general. While polygraph testing, as noted in the literature review, is used extensively throughout the public-sector, this study focused only on officers within municipal, township, and county police agencies within one state. This limited population is only a microcosm of the larger population of public employees required to submit to pre-employment polygraph testing. Therefore, generalization of these results over the larger population of public employees may not be warranted.

Recommendations

The propensity for further research in the pre-employment polygraph examination is wide open. This study only begins to explore whether the polygraph examination is an effective pre-employment screening tool, and if so, in what ways. Because the current body of literature lacks research that targets the effectiveness of the pre-employment polygraph examination in the public sector, studies such as this one, conducted over various populations of the overall public sector, are warranted. This study can be applied over a larger, more diverse population of law enforcement officers, and possibly public-sector employees in general.

Perhaps the most compelling recommendation for further study should center on the law enforcement organization itself rather than the individual officer. While this

study established groundwork for an understanding of the lack of a relationship between the polygraph and an officer's view of police misconduct, it did little to focus on the agencies that enforce and subscribe to pre-employment polygraph screening of their candidate officers. Future, perhaps qualitative, research could shed light on the views of law enforcement agency leaders with respect to their acceptance of the polygraph examination as a pre-screening tool within their agency. It cannot be discounted that 62% of police departments nationwide (American Polygraph Association, 2015) employ and rely on the polygraph to pre-screen their officer candidates. With over half of the nation's police departments subscribing to a pre-employment polygraph policy not grounded in research, there is justification, as this study suggests, in questioning these agencies' motivating factors in their decisions to employ the polygraph as part of their hiring processes.

Future work on this topic might focus on actual police officer misconduct statistics as a dependent variable as opposed to merely the perceptions officers have of police misconduct. A focus on existing data illustrating actual misconduct in law enforcement agencies and how it relates to the pre-employment polygraph might expound on this study's findings. Put another way, it might take the investigation of this topic to the next level; wherein existing data of the misconduct construct, rather than gathered survey data of the construct, is used for the analysis. Acquiring this type of existing data from a range of law enforcement agencies might be challenging, but the rewards in knowledge gained may be worth the effort.

Public policy makers such as police chiefs, county sheriffs, and municipal administrators, should see the results of this study as a challenge to the status quo belief that the pre-employment polygraph examination has only positive benefits--or at the very least, to the belief that it is absent of negative consequences. As this study has uncovered the possibility of there being no connection between the use of the pre-employment polygraph and the prediction of future officer misconduct, notwithstanding this study's limitations, public officials are justified in thoroughly reviewing their own organizational policies regarding pre-employment polygraph screening and should be willing to seek out further investigation.

Social Change Implications

In 1988, when the U. S. Congress passed the Employee Polygraph Protection Act (EPPA) in the wake of public outrage about the pre-employment screening of private sector employees, they were responding to an outcry for reform in discriminatory hiring practices. As detailed in Chapter 2 of this study, the EPPA made generally illegal the polygraphing of private sector employees, while exempting public sector organizations from compliance with the Act. As a result, since 1988, public sector employees continue to endure the same treatment banned by the EPPA for their private sector counterparts.

The findings of this study encourage a conversation on the legitimacy of the pre-employment polygraph in the public sector, public policy by which Congress thought necessary in 1988 to ban in the private sector. Naturally, the question arises that if Congress deems an Act to regulate policy necessary for one employment sector, should its counterpart sector simply be ignored? Some, such as Onder and Brittan (2009), have

surmised that the public-sector exemption to the EPPA stems from federal and state agency pressure on Congress not to do away with the polygraph testing of federal and state employees in sensitive positions. However, this study's findings begin to call attention to the question of whether the benefits derived from the pre-employment polygraph outweigh the costs to individual privacy, regardless of employment sector.

This study was significant because of the general assumption by countless public agencies, noted by Handler et al. (2009), that the polygraph examination is reliable, efficient, and even infallible for employment screening. Clearly, public officials need more information regarding the effectiveness of the polygraph in the hiring process of their employees. One would hope these officials would ask questions such as: Can and should the polygraph examination be trusted to predict future misconduct? Do the benefits derived through pre-employment polygraph testing outweigh any adverse effects? In what percentage of cases are the results accurate? And, are job candidates unnecessarily placed in a position in which their right to privacy is being violated? These are several compelling questions public policy makers should be asking because of this study. This study's results serve to stimulate interest in public officials who were previously reluctant to question the necessity or usefulness of the pre-employment polygraph examination.

The results of this study suggest that law enforcement agencies choosing to use the polygraph examination in their hiring processes of their officers, may not be able to make valid predictions as to future behavior of these officers, at least not based upon the polygraph examination alone. With this recognition, punctuated equilibrium theory

(PET) and the theory of functional stupidity, as previously described in this chapter and more thoroughly in the literature review, take a front and center stance for explaining organizations' rationale in their use of the pre-employment polygraph. While PET may explain the current stasis of organizational pre-employment polygraph testing policy, functional stupidity theory may offer a reason for this stasis. Along with functional stupidity theory goes the adage "If it's not broke, don't fix it." As revealed in the literature review, the perceptions of many in positions of public policy making is that the pre-employment polygraph, at the very least, does no harm to the organization. Therefore, this begs the question of why, assuming (rightly or wrongly) that no harm is done, should the polygraph not be used as one of many screening tools to assist in the hiring process.

The answer to this query requires a balancing test of benefits against detriments. Traditionally, the pre-employment polygraph, in the view of law enforcement organizations, has had two primary benefits: the verification of truthfulness in the application, and an assurance, that if candidates pass a polygraph examination, they are more likely to conduct themselves ethically in the future. The findings of this study begin to erode the second assumption of future behavior prediction. Therefore, perhaps the time has arrived for public policy makers to question whether the benefits of the pre-employment polygraph examination, given its propensity for privacy invasion as detailed in the literature review, outweigh its potential detriments.

I recommend that law enforcement agency officials, based on the results of this study, thoroughly review their department policies regarding the pre-employment

polygraph examinations. This review should set aside previous assumptions made about the efficacy and overall effectiveness of the polygraph to allow informed decision making to enter the fold. Police chiefs and county sheriffs should not succumb to so-called conventional wisdom regarding the pre-employment polygraph, and they should not blindly err on the side of inclusion when deciding if the polygraph belongs in their hiring processes.

Conclusion

This study explored an understudied area of public policy regarding the hiring process of public employees. Specifically, it focused on law enforcement agencies and their use of the polygraph in the hiring of their officers. It challenged the widespread assumption that when an agency requires a polygraph of prospective employees, it is not only verifying the candidate's truthfulness, it is also making a prediction, however vague, about the future potential for ethical behavior in the candidate. As the literature demonstrated, many law enforcement agency heads have operated under this assumption and therefore have failed to question several important aspects of the pre-employment polygraph examination including its validity, reliability, overall efficacy, and general fairness to the candidate at hand. In fact, over the past half-century, agency rationale for pre-employment polygraph use has evolved from simply verifying truthfulness to also predicting future ethical conduct. Although empirical data supporting this rationale is lacking, law enforcement agencies continue to forge ahead with this potentially flawed public policy, operating under the belief that the pre-employment polygraph examination can, or at least should, be able to predict future ethical conduct in officers.

The findings of this study indicated otherwise. This study found no relationship between the pre-employment polygraph examination and an officer's propensity for future misconduct, as evidenced by a lack of statistically significant relationships between these variables. The overarching question in this study, of whether there are differences in perceptions of police misconduct between law enforcement officers who took the polygraph as a condition of employment and those who did not, was answered: there was no connection found between the two.

These findings suggest that future research on this topic pursue, perhaps on a broader spectrum, the main organizational presumption fueling public policy on the pre-employment polygraph examination—that there are only positive outcomes to using the polygraph examination in the public sector hiring process. As stewards of public funds, agency leaders should ground their decision making about such public policy in empirical data as opposed to long-standing unproven assumptions, and anecdotal evidence. This study merely exposed the potential for investigation in this understudied topic; the pre-employment polygraph for public sector employees should be viewed as an issue of significance to the public employee--challenged by pointed questions and informed by the ensuing scientific study that would naturally follow.

References

- Alvesson, M., & Spicer, A. (2012). A stupidity-based theory of organizations. *Journal of Management Studies*, *49*(7), 1194-1220. doi: 10.1111/j.1467-6486-2012.01072.x
- American Polygraph Association. (n.d.) Retrieved on June 16, 2015, from the American Polygraph Association website, <http://www.polygraph.org>
- Barnhorn, D., & Pegram, J. E. (2011). Speak the truth and tell no lies: An update for the Employee Polygraph Protection Act. *Hofstra Labor & Employment Law Journal*, *29*(1), 141-187. Retrieved from <http://heinonline.org/HOL/LandingPage?handle=hein.journals/hlelj29&div=9&id=&page=>
- Baumgartner, F. R., & Jones, B. D. (1991). Agenda dynamics and policy subsystems. *The Journal of Politics*, *53*(4), 1044-1074. Retrieved from <http://links.jstor.org/sici?sici>
- Baumgartner, F., & Jones, B. D. (1993). *Agendas and instability in American politics*. Chicago, IL: University of Chicago Press.
- Baumgartner, F. R., Jones, B. D., & Mortensen, P. B. (2014). Punctuated equilibrium theory: Explaining stability and change in public policy making. In P. A. Sabatier, & C. M. Weible (Eds.), *Theories of the policy process* (3rd ed., pp. 59-103). Boulder, CO: Westview Press.
- Ben-Shakhar, G. (2008). The case against the use of polygraph examinations to monitor post-conviction sex offenders. *Legal and Criminological Psychology*, *13*, 191-207. doi: 10.1348/135532508X298577
- Ben-Shakhar, G. (2012). Current research and potential applications of the concealed

information test: An overview. *Frontiers in Psychology*, 3.

<http://dx.doi.org/10.3389/fpsyq.2012.00342>

Ben-Shakhar, G., Garner, M., Iacono, W., Meijer, E., & Verschuere, B. (2015).

Preliminary process theory does not validate the comparison question test: A comment on Palmatier and Rover (2015). *International Journal of Psychophysiology*, 95, 16-19. <https://doi.org/10.1016.ijpsycho.2014.08.582>

Blalock, B. (2009). Capitalizing on technology to increase standardization and reliability in a polygraph examination. *Polygraph*, 38(2), 154-166. Retrieved from www.polygraph.org/assets/docs/APA-Journal.Articles/2009

Bradley, M. T., Malik, F. J., & Cullen, M. C. (2011). Memory instructions, vocalization, mock crimes, and concealed information tests with a polygraph. *Perceptual and Motor Skills*, 113, 840-858. <http://dx.doi.org/10.2466/07.22.27.PMS.113.6.840-858>

Chappell, A. T., & Piquero, A. R. (2004). Applying social learning theory to police misconduct. *Deviant Behavior*, 25, 89-108. <http://dx.doi.org/10.1080/01639620490251642>

Creswell, J. W. (2009). *Research Design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage.

Cumming, A. (2007). *Polygraph use by the Department of Energy: Issues for Congress* [Congressional Research Service Report]. Washington, DC: Congressional Research Service.

Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 S. Ct. 579 (1993).

- Elaad, E. (2014). Differences in the readiness of guilty and informed innocent examinees to cooperate on the guilty action test. *Psychophysiology*, *51*, 70-79.
<http://dx.doi.org/10.1111/psyp.12146>
- Elaad, E. (2015). Cognitive and emotional aspects of polygraph diagnostic procedures: A comment on Palmatier and Rovner (2015). *International Journal of Psychophysiology*, *95*, 14-15. <https://doi.org/10.1016/j.ijpsycho.2014.07.011>
- Emanuel, E., Abdoler, E., & Stunkel, L. (2016). *Research ethics: How to treat people who participate in research* [White paper]. Retrieved from National Institutes of Health: www.bioethics.nih.gov
- Employee Polygraph Protection Act, 29 U.S.C. §§ 2001-2009 (1988).
- Faul, F., Erdfelder, E., Lang, A., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175-191.
<http://dx.doi.org/http://dx.doi.org/10.3758/BF03193146>
- Feder-Bubis, P., & Chinitz, D. (2010). Punctuated equilibrium and path dependency in coexistence: The Israeli health system and theories of change. *Journal of Health Politics, Policy and Law*, *35*(4), 595-614. <http://dx.doi.org/10.1215/03616878-2010-018>
- Fiedler, K., Schmid, J., & Stahl, T. (2010). What is the current truth about polygraph lie detection? *Basic and Applied Social Psychology*, *24*(4), 313-324.
http://dx.doi.org/10.1207/S15324834BASP2404_6
- Field, A. (2013). *Discovering Statistics Using IBM SPSS Statistics* (4th ed.). London,

UK: Sage.

Forrer, D., Mino, M., & Ehart, C. W. (2008, March). *The effects of the hiring process on employee termination: Concept and issues*. Paper presented at the American Public Administration Society Conference, Dallas, TX.

Frankfort-Nachmias, C., & Nachmias, D. (2008). *Research methods in the social sciences* (7th ed.). New York, NY: World.

Frye v. United States, 293 S. Ct. 1013 (1923).

Fuss, T., & Snowden, L. (2004). Importance of background investigations. *Law and Order*, 52(3), 58-63.

Gaddefors, J., Johansson, A. W., Lundberg, H., & Rossell, E. (2013, June). *Rural entrepreneurship research: Promoting reflexivity or functional stupidity?* Paper presented at the 11th Rural Enterprise Conference, University of West Scotland, Dumfries, Scotland.

Gersick, C. (1991). Revolutionary change theories: A multilevel exploration of the punctuated equilibrium. *The Academy of Management Review*, 16(1), 10-16.

Ginton, A. (2013). Decisions to be taken in the use of polygraph examinations for verifying complaints about violence: Analysis and policy recommendations. *Journal of Investigative Psychology and Offender Profiling*, 10, 166-181.
<http://dx.doi.org/10.1002/jip.1390>

Ginton, A. (2015). Good intentions that fail to cope with the main point in CQT: A comment on Palmatier and Rovner. *International Journal of Psychophysiology*, 95, 25-28. <http://dx.doi.org/10.1016/j-iopsycho.2014.09.005>

- Givel, M. (2010). The evolution of the theoretical foundations of punctuated equilibrium theory in public policy. *Review of Policy Research*, 27(2), 187-198.
- Goldsworthy, T., & Trainor, S. (2014). The long arm of the law: An examination of the utility of police post-separation discipline processes. *International Journal of Police Science & Management*, 16(4), 245-254.
<http://dx.doi.org/10.1350/ijps.2014.16.4.343>
- Gondwe, M. (2011). *The protection of privacy in the workplace: A comparative study* (Doctoral dissertation). Retrieved from <http://hdl.handle.net/10019.1/17849>
- Grant, R. W., & Sugerman, J. (2004). Ethics in human subjects research: Do incentives matter? *Journal of Medicine and Philosophy*, 29(6), 717-738. Retrieved from www.tandfonline.com/doi/abs/10.1080/03605310490883046
- Green, S. B., & Salkind, N. J. (2014). *Using SPSS for Windows and Macintosh* (7th ed.). New York, NY: Pearson
- Greene, J. R., Piquero, A. R., Hickman, M. J., & Lawton, B. A. (2004). *Police integrity and accountability in Philadelphia: Predicting and assessing police misconduct* [Policy brief]. Washington, D.C.: National Institute of Justice.
- Grubin, D. (2010). The polygraph and forensic psychiatry. *Journal of the American Academy of Psychiatry and the Law*, 38, 446-451. Retrieved from <https://pdfs.semanticscholar.org/>
- Handler, M., Honts, C. R., Krapohl, D. J., Nelson, R., & Griffin, S. (2009). Integration of pre-employment polygraph screening into the police selection process. *Journal of Police Criminal Psychology*, 24 (2), 69-86. Retrieved from

<https://link.springer.com/article/10.1007/s11896-009-9050-2>

Hart, A. (2001). Mann-Whitney test is not just a test of median: Differences in spread can be important. *Applied Statistics*, 22, 269-273. Retrieved from

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1120984/>

Henson, B., Reyns, B. W., Klahm IV, C. F., & Frank, J. (2010). Do good recruits make good cops? Problems predicting and measuring academy and street-level success.

Police Quarterly, 20(10), 1-22. <http://dx.doi.org/10.1177/1098611109357320>

Hira, S., & Furumitsu, I. (2009). Tonic arousal during field polygraph tests in guilty vs. innocent suspects in Japan. *Applied Psychophysiology Biofeedback*, 34, 173-176.

<http://dx.doi.org/10.1007/s10484-009-9088-z>

Honts, C. R., & Alloway, W. R. (2007). Information does not affect the validity of a comparison question test. *Legal and Criminal Psychology*, 12, 311-320. doi:

10.1348/135532506X123770

Honts, C. R., & Amato, S. (2007). Automation of a screening polygraph test increases accuracy. *Psychology, Crime & Law*, 13(2), 187-199.

<http://dx.doi.org/10.1080/10683160600632843>

Honts, C. R., & Kircher, J. C. (1994). Mental and physical countermeasures reduce the accuracy of polygraph tests. *Journal of Applied Psychology*, 79(2), 252-259.

Retrieved from <http://dx.doi.org/10.1037/0021-9010.79.2.252>

Honts, C. R., & Reavy, R. (2015). The comparison question polygraph test: A contrast of methods and scoring. *Physiology & Behavior*, 143, 15-26. Retrieved from

<https://doi.org/10.1016/j.physbeh.2015.02.028> Horvath, F. (1977). The effect of

selected variables on interpretation of polygraph records. *Journal of Applied Psychology*, 62(2), 127-136. <http://dx.doi.org/http://dx.doi.org/10.1037/0021-9010.62.2.127>

Horvath, F. (1993). Polygraphic screening of candidates for police work in large police agencies in the United States: A survey of practices, policies, and evaluative comments. *American Journal of Police*, 12(4), 67-86. Retrieved from <http://heinonline.org/HOL/LandingPage?handle=hein.journals/ajpol12&div=40&id=&page=>

Iacono, W. G. (2001). Forensic "lie detection": Procedures without scientific basis. *Journal of Forensic Psychology Practice*, 1(1), 75-86. Retrieved from http://dx.doi.org/10.1300/j158v01n01_05

Iacono, W. G. (2008). Understanding how polygraph tests work and are used. *Criminal Justice and Behavior*, 35(10), 1295-1308.

Iacono, W. G., Cerri, A. M., Patrick, C. J., & Fleming, J. A. (1992). Use of antianxiety drugs as countermeasures in the detection of guilty knowledge. *Journal of Applied Psychology*, 77(1), 60-64. Retrieved from <http://dx.doi.org/10.1037/0021-9010.77.1.60>

Iacono, W. G., & Lykken, D. T. (1997). The validity of the lie detector: Two surveys of scientific opinion. *Journal of Applied Psychology*, 82(3), 426-433. Retrieved from <http://dx.doi.org/10.1037/0021-9010.82.3.426>

Institute of Internal Auditors. (2011). Supplemental guidance: Public-sector definition. In *Supplemental Guidance: Public-sector Definition*. Altamonte Springs, FL:

Institute of Internal Auditors.

- Jaworski, R. (2004). Evaluation of polygraph examination against a background of its evidential and investigative significance. *Journal of Forensic Identification*, 54(4), 452-468. Retrieved from <https://search.proquest.com/openview/b794b3102fb4c5e6a00682a32258442a/1?q-origsite=gscholar&cbl=29772>
- Jensen, T. M., Shafer, K., Roby, C. Y., & Roby, J. L. (2015). Sexual history disclosure polygraph outcomes: Do juvenile and adult sex offenders differ. *Journal of Interpersonal Violence*, 30(6), 928-944. <http://dx.doi.org/10.1177/0886260514539766>
- Jones, B. D., & Baumgartner, F. R. (2012). From there to here: Punctuated equilibrium to the general punctuation thesis to a theory of government information processing. *Policy Studies Journal*, 40(1), 1-20. <http://dx.doi.org/10.1111/j.1541-0072.2011.00431.x>
- Kleiman, L. S., Faley, R. H., & Denton, D. W. (1990). Legal issues concerning polygraph testing in the public-sector. *Public Personnel Management*, 19(4), 365-379. <https://doi.org/10.1177/009102609001900401>
- Kleinmuntz, B., & Szucko, J. J. (1984). Lie detection in ancient and modern times: A call for contemporary scientific study. *American Psychologist*, 39(7), 766-776. <http://dx.doi.org/10.1037/0003-066X.39.7.766>
- Klockars, C. B., Kutnjak Ivkovic, S., & Haberfeld, M. (2006). *Enhancing police integrity*. New York, NY: Springer.

- Klockars, C. B., Kutnjak Ivkovic, S., Harver, W. E., & Haberfeld, M. (2000). *The measurement of police integrity*. Washington, D.C.: National Institute of Justice: Research in Brief: U. S. Department of Justice.
- Klockars, C. B., Kutnjak Ivkovich, S., Harver, W. E., & Haberfeld, M. R. (2000). Klockar Scale [Measurement instrument]. Published instrument. Newark, DE: National Institute of Justice.
- Kokish, R., Levenson, J. S., & Blasingame, G. D. (2005). Post-conviction sex offender polygraph examination: Client-reported perceptions of utility and accuracy. *A Journal of Research and Treatment*, 17(2), 211-221. <http://dx.doi.org/10.1007/S11194-005-4606-X>
- Konieczny, J. (2014). Polygraph examination in analysis of evidence. *European Polygraph*, 8(3). <http://dx.doi.org/10.2478/ep-2014-0009>
- Kovach, K. A. (1995, March 22). The truth about employers' use of lie detectors. *Business and Society Review*, 65-69.
- Kurtz, J. M., & Wells, W. R. (1989). The Employee Polygraph Protection Act: The end of the lie detector in employment decisions? *Journal of Small Business Management*, 76-80. Retrieved from <https://search.proquest.com/openview/6295c35cb9554318fb97ebc5754020a9/1?pq-origsite=gscholar&cbl=49244>
- Kutnjak Ivkovic, S. (2005). Police (mis)behavior: Controlling police corruption. *Policing*, 28, 546-566. <https://doi.org/10.1108/13639510510614609>
- Kwon, S., Choi, S. O., & Bae, S. (2013). Effects of political institutions on punctuated equilibrium in local emergency management policy processes: Examination of

- county governments in Florida, U.S. *Journal of Local Self-Government*, 11(2), 193-211. <http://dx.doi.org/10.4335/11.2.193-211>
- Laerd Statistics (2015). Binomial logistic regression using SPSS Statistics. *Statistical tutorials and software guides*. Retrieved from <https://statistics.laerd.com/>
- Lesniak, M. (2014). Selected problems in evaluation of polygraph examination results. *European Polygraph*, 8(4), 189-196. <http://dx.doi.org/10.2478/ep-2014-0013>
- Lewis, J. A., & Cuppari, M. (2009). The polygraph: The truth lies within. *Journal of Psychiatry & Law*, 37, 85-92. <https://doi.org/10.1177/009318530903700107>
- Mann, S., Vrij, A., & Bull, R. (2004). Detecting true lies: Police officers' ability to detect suspects' lies. *Journal of Applied Psychology*, 89(1), 137-149. <http://dx.doi.org/10.1037/0021-9010.89.1.137>
- Mark, J. R. (2014). *The consistency of the use of the polygraph exam during the selection process among law enforcement agencies* (master's thesis, Rowan University). Retrieved from <http://dspace.rowan.edu/bitstream/handle/10927/973/markj-t.pdf?sequence=1>
- Marshall, D., & Thomas, T. (2015). Polygraphs and sex offenders: The truth is out there. *Journal of Community and Criminal Justice*, 62(2), 128-139. <http://dx.doi.org/10.1177/0264550515571395>
- Math, S. B. (2011). Supreme Court judgment on polygraph, narco-analysis & brain-mapping: A boon or a bane. *Indian Journal of Medical Research*, 134(1), 4-7. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3171915/>
- Matthies, C. F. (2012). *Evidence-based approaches to law enforcement recruitment and*

hiring studies of the Los Angeles police department (Doctoral dissertation).

Available from ProQuest Information & Learning. (2012-99090-350)

McGrath, R. J., Cumming, G. F., Hoke, S. E., & Bonn-Miller, M. O. (2007). Outcomes in a community sex offender treatment program: A comparison between polygraphed and matched non-polygraphed offenders. *Sex Abuse, 19*(4), 381-393.

<https://doi.org/10.1007/s11194-007-9058-z>

Meesig, R., & Horvath, F. (1995). A national survey of practices, policies, and evaluative comments on the use of pre-employment polygraph screening in police agencies in the United States. *Polygraph, 24*(2), 124. Retrieved from

[http://www.polygraph.org/assets/docs/APA-](http://www.polygraph.org/assets/docs/APA-Journal.Articles/Vol.24.1995/polygraph%201995%20242.pdf)

[Journal.Articles/Vol.24.1995/polygraph%201995%20242.pdf](http://www.polygraph.org/assets/docs/APA-Journal.Articles/Vol.24.1995/polygraph%201995%20242.pdf)

Meijer, E. H., & Verschuere, B. (2010). The polygraph and the detection of deception.

Journal of Forensic Psychology Practice, 10(4), 324-338.

<http://dx.doi.org/10.1080/15228932.2010.481237>

Meijer, E. H., & Verschuere, B. (2015). The polygraph: Current practice and new approaches. In *Detecting deception: Current challenges and cognitive approaches*

(pp. 59-80). <http://dx.doi.org/10.1002/9781118510001.ch3>

Moore, M. H. (2014). The scientific basis for polygraph testing. *Polygraph and Lie Detection, 65-83*.

Moore, S. E. (2009). *The Gift of Policing: Understanding Image and Reciprocity* (Master of Arts thesis, University of Waterloo). Retrieved from

<https://uwspace.uwaterloo.ca>

- Morrison, E. W. (2011). Employee voice behavior: Integration and directions for future research. *The Academy of Management Annals*, 5(1), 373-412.
<http://dx.doi.org/10.1080/19416520.2011.574506>
- Myers, B., Latter, R., & Abdollahi-Arena, M. K. (2006). The court of public opinion: Lay perception of polygraph testing. *Law and Human Behavior*, 30(4), 509-523.
<http://dx.doi.org/10.1007/s10979-006-9041-0>
- National Research Council. (2003). *The polygraph and lie detection*. Washington, D.C.: The National Academies Press.
- Nelson, R. (2015). Scientific basis for polygraph testing. *Polygraph*, 44(1), 28-61.
Retrieved from
https://www.researchgate.net/profile/Raymond_Nelson/publication/275956840_Scientific_Basis_for_Polygraph_Testing/links/554b45330cf29752ee7c4f0b.pdf
- Offe, H., & Offe, S. (2007). The comparison question test: Does it work and if so how? *Law and Human Behavior*, 31, 291-303. <http://dx.doi.org/10.1007/s10979-006-9059-3>
- Ohio Fraternal Order of Police. (n.d.) Retrieved on June 8, 2017, from the Ohio Fraternal Order of Police website, <http://www.forohio.org>
- Onder, A., & Brittan, M. (2009). Recent case law under the Employee Polygraph Protection Act: A practical review. *Privacy & Data Security Law Journal*, 483-503.
- Palmatier, J. J., & Rovner, L. (2015). Credibility assessment: Preliminary process theory, the polygraph process, and construct validity. *International Journal of*

- Psychophysiology*, 95, 3-13. <https://doi.org/10.1016/j.ijpsycho.2014.06.001>
- Park, A., & Herndon, J. S. (2015). Police cadet attrition and training performance outcomes. *Polygraph*, 44(2), 143-161. Retrieved from <http://web.b.ebscohost.com/abstract?direct=true&profile=ehost&scope>
- Patrick, C. J., & Iacono, W. G. (1991). Validity of the control question polygraph test: The problem of sampling bias. *Journal of Applied Psychology*, 76(2), 229-238. <http://dx.doi.org/10.1037/0021-9010.76.2.229>
- Peace Officer Training Commission FY2010 Annual Report* [Annual report]. (2010). Columbus, OH: Ohio Attorney General's Office.
- Pfeffer, J., & Sutton, R. (2006). *Hard facts, dangerous half-truths and total nonsense: Profiting from evidence based management*. Boston, MA: Harvard Business School Press.
- Pogarsky, G., & Piquero, A. R. (2004). Studying the reach of deterrence: Can deterrence theory help explain police misconduct? *Journal of Criminal Justice*, 32(4), 371-386. <https://doi.org/10.1016/j.jcrimjus.2004.04.007>
- Pre-employment polygraph examinations of public safety applicants. (2011). Retrieved from <http://www.aele.org/law/2011all07/2011-07MLJ201.pdf>
- Prindle, D. F. (2012). Importing concepts from biology into political science: The case of punctuated equilibrium. *Policy Studies Journal*, 40(1), 21-44. doi: 10.1111/j.1541-0072.2011.00432.x
- Pynes, J. E., & Bernadin, H. J. (1989). Predictive Validity of an Entry-Level Police Officer Assessment Center. *Journal of Applied Psychology*, 74/5, 831-833.

Retrieved from <http://ovidsp.ovid.com.ezp.waldenulibrary.org/ovidweb.cgi?T=JS&PAGE=fulltext&D=ovft&CSC=Y&NEWS=N&SEARCH=00004565-198910000-00018.an>

- Robinson, R. (2013). Punctuated equilibrium and the Supreme Court. *Policy Studies Journal, 41*(4), 654-681. doi: 10.1111/psj.12036
- Romanelli, E., & Tushman, M. L. (1994). Organizational transformation as punctuated equilibrium: An empirical test. *Academy of Management Journal, 37*(05), 1141-1166. doi: 10.2307/256669
- Rosky, J. W. (2012). The (f)utility of post-conviction polygraph testing. *Sexual Abuse: A Journal of Research and Treatment, 25*(3), 259-281.
<http://dx.doi.org/10.11771079063212455668>
- Rosky, J. W. (2015). More polygraph futility: A comment on Jensen, Shafer, Roby, and Roby (2015). *Journal of Interpersonal Violence, 1*-15.
<http://dx.doi.org/10.1177/0886260515570752>
- Sabatier, P. A., & Weible, C. M. (2014). *Theories of the policy process* (3rd ed.). Boulder, CO: Westview Press.
- Saxe, L., & Ben-Shakhar, G. (1999). Admissibility of polygraph tests: The application of scientific standards post-Daubert. *American Psychological Association, 5*(1), 203-223. <http://dx.doi.org/10.1037//1076-8971.5.1.203>
- Schafer, J. A., & Martinelli, T. J. (2008). First-line supervisor's perceptions of police integrity. *Policing: An international journal of police strategies and management, 31*(2), 306-323. <https://doi.org/10.1108/13639510810878749>

- Schneider, A. L. (2006). Patterns of change in the use of imprisonment in the American states: An integration of path dependence, punctuated equilibrium and policy design approaches. *Political Research Quarterly*, 59(3), 457-470.
<https://doi.org/10.1177/106591290605900313>
- Skolnick, J. H. (1961, 1-1-1961). Scientific theory and scientific evidence: An analysis of lie detection. *The Yale Law School Journal*, 70(5), 694-728. doi: 10.2307/794340
- Smith, R. E. (1993). Corporations that fail the fair hiring test. In *Our vanishing privacy: And what you can do to protect yours* (pp. 29-33). Port Townsend, WA: Loompanics Unilimited.
- Staunton, C., & Hammond, S. (2011). An investigation of the guilty knowledge test polygraph examination. *Journal of Criminal Psychology*, 1(1), 1-14.
<https://doi.org/10.1108/20093829201100001>
- SurveyMonkey. (2016). www.surveymonkey.com
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Pearson.
- Tarescavage, A. M., Fischler, G. L., Cappo, B. M., Hill, D. O., Corey, D. M., & Ben-Porath, Y. S. (2014). Minnesota multiphasic personality inventory-2-restructured form (MMPI-2-RF) predictors of police officer problem behavior and collateral self-report test scores. *American Psychological Association*, 27(1), 125-137.
<http://dx.doi.org/10.1037/pas0000041.supp>
- Tomash, J. J., & Reed, P. (2013). The generalization of a conditioned response to deception across the public/private barrier. *Learning and Motivation*, 44, 196-203.

<https://doi.org/10.1016/j.lmot.2012.12.001>

U. S. Department of Justice, Bureau of Justice Statistics. (2011).

<http://www.bjs.gov/content/pub/pdf/cslla08.pdf>

U. S. v. Henderson, 409 S. Ct. 1293 (2005).

U. S. v. Scheffer, 523 S. Ct. 303 (1998).

Verschuere, B., Meijer, E., & De Clercq, A. (2010). Concealed information under stress:

A test of the orienting theory in real-life police interrogations. *Legal and Criminological Psychology*, 16, 348-356. doi: 10.1348/135532510X521755

Vicianova, M. (2015). Historical techniques of lie detection. *Europe's Journal of*

Psychology, 11(3), 522-534. <http://dx.doi.org/10.5964/ejop.v11i3.919>

Vito, G. F., Wolfe, S., Higgins, G. E., & Walsh, W. F. (2011). Police integrity: Rankings

of scenarios on the Klockars Scale by "Management Cops". *Criminal Justice Review*, 36(2), 152-164. <http://dx.doi.org/10.1177/0734016810384502>

Walczyk, J. J., Igou, F. P., Dixon, A. P., & Tcholakian, T. (2013). Advancing lie

detection by inducting cognitive load on liars: A review of relevant theories and techniques guided by lessons from polygraph-based approaches. *Frontiers in Psychology*, 4, 3-13. <http://dx.doi.org/10.3389/psyg.2013.00014>

White, M. D. (2008). Identifying good cops early: Predicting recruit performance in the academy. *Police Quarterly*, 11(1), 27-49.

<http://dx.doi.org/10.1177/1098611107309625>

White, R. D. (2001). Ask me no question, tell me no lies: Examining the uses and misuses of the polygraph. *Public Personnel Management*, 30(4), 483-490.

<https://doi.org/10.1177/009102600103000405>

Wise, L. R., & Charvat, S. J. (1990). Polygraph testing in the public-sector: The status of state legislation. *Public Personnel Management*, 19(4), 381-390.

<https://doi.org/10.1177/009102609001900402>

Appendix A: Power Analysis

Research Questions 1, 2, and 3 (Medium Effect)

t tests - Means: Wilcoxon-Mann-Whitney test (two groups)

Options: A.R.E. method

Analysis: A priori: Compute required sample size

Input:	Tails	= One
	Parent distribution	= Normal
	Effect size d	= 0.5
	α err prob	= 0.05
	Power (1- β err prob)	= 0.95
	Allocation ratio N2/N1	= 1
Output:	Noncentrality parameter λ	= 3.33138635
	Critical t	= 1.6536729
	Df	= 173.7071
	Sample size group 1	= 92
	Sample size group 2	= 92
	Total sample size	= 184
	Actual power	= 0.9511454

Research Questions 1, 2, and 3

z tests - Logistic regression: One group, size of slope

Analysis: A priori: Compute required sample size

Input:	Tail(s)	= Two
	Odds ratio	= 2.33
	α err prob	= 0.05
	Power (1- β err prob)	= 0.95
	Critical z	= 1.9599640
	Total sample size	= 104

Appendix B: Modified Version of the Klockars Scale Survey Instrument

Modified Klockars Scale Survey Instrument

1. What is the highest level of education you have completed?

Graduate degree
Bachelor's degree
Some college
High school diploma or GED

2. How long have you been employed with you current agency?

0-5 years
6-10 years
11-15 years
Over 15 years

3. Does your current agency require sworn law enforcement officer applicants to pass a polygraph examination prior to employment?

Yes
No
Unsure

4. Did your current agency require you to pass a polygraph examination as a condition of your employment?

Yes
No

5. What is your current rank within your agency?

Non-supervisory (Patrol Officer, Deputy, Detective)
Supervisory (Rank of Sergeant and above)

Case Scenarios

Case 1. A police officer runs his own private business in which he sells and installs security devices, such as alarms, special locks, etc. He does this work during his off-duty hours.

Case 2. A police officer routinely accepts free meals, cigarettes, and other items of small value from merchants on his beat. He does not solicit these gifts and is careful not to abuse the generosity of those who give gifts to him.

Case 3. A police officer stops a motorist for speeding. The officer agrees to accept a personal gift of half of the amount of the fine in exchange for not issuing a citation.

Case 4. A police officer is widely liked in the community, and on holidays local merchants and restaurant and bar owners show their appreciation for his attention by giving him gifts of food and liquor.

Case 5. A police officer discovers a burglary of a jewelry shop. The display cases are smashed, and it is obvious that many items have been taken. While searching the shop, he takes a watch, worth about 2 days' pay for that officer. He reports that the watch had been stolen during the burglary.

Case 6. A police officer has a private arrangement with a local auto body shop to refer the owners of cars damaged in accidents to the shop. In exchange for each referral, he receives payment of 5 percent of the repair bill from the shop owner.

Case 7. A police officer, who happens to be a very good auto mechanic, is scheduled to work during coming holidays. A supervisor offers to give him these days off, if he agrees to tune up his supervisor's personal car. Evaluate the supervisor's behavior.

Case 8. At 2:00 a.m., a police officer, who is on duty, is driving his patrol car on a deserted road. He sees a vehicle that has been driven off the road and is stuck in a ditch. He approaches the vehicle and observes that the driver is not hurt but is obviously intoxicated. He also finds that the driver is a police officer. Instead of reporting this accident and offense, he transports the driver to his home.

Case 9. A police officer finds a bar on his beat that is still serving drinks a half-hour past its legal closing time. Instead of reporting this violation, the police officer agrees to accept a couple of free drinks from the owner.

Case 10. Two police officers on foot patrol surprise a man who is attempting to break into an automobile. The man flees. They chase him for about two blocks before apprehending him by tackling him and wrestling him to the ground. After he is under

control, both officers punch him a couple of times in the stomach as punishment for fleeing and resisting.

Case 11. A police officer finds a wallet in a parking lot. It contains an amount of money equivalent to a full day's pay for that officer. He reports the wallet as lost property but keeps the money for himself.

Case Scenario Assessment Options

1. How serious do YOU consider this behavior to be?

Not at all serious
Slightly serious
Neutral
Moderately serious
Very serious

2. How serious do MOST POLICE OFFICERS IN YOUR AGENCY consider this behavior to be?

Not at all serious
Slightly serious
Neutral
Moderately serious
Very serious

3. Would this behavior be regarded as a violation of official policy in your agency?

Definitely not
Possibly
Unsure
Probably
Definitely yes

4. If an officer in your agency engaged in this behavior and was discovered doing so, what if any discipline do YOU think SHOULD follow?

None
Verbal reprimand

Written reprimand
Period of suspension without pay
Demotion in rank
Dismissal

5. If an officer in your agency engaged in this behavior and was discovered doing so, what if any discipline do YOU think WOULD follow?

None
Verbal reprimand
Written reprimand
Period of suspension without pay
Demotion in rank
Dismissal

6. Do you think YOU would report a fellow police officer who engaged in this behavior?

Definitely not
Possibly
Unsure
Probably
Definitely yes

7. Do you think MOST POLICE OFFICERS IN YOUR AGENCY would report a fellow police officer who engaged in this behavior?

Definitely not
Possibly
Unsure
Probably
Definitely yes

Appendix C: Permission to Use Police Integrity Survey

Re: Permission to Use Police Integrity Survey

1 message

Maria Haberfeld <mhaberfeld@jjay.cuny.edu>

Wed, Feb 10, 2016 at 8:08 PM

To: Pete Piraino <pirainop@tiffin.edu>

Cc: "kutnjak@msu.edu" <kutnjak@msu.edu>

Hello Mr. Piraino

I think that it is not a problem at all as the research project was sponsored by NIJ but, I am cc Dr. Kutnjak to get her input on this.

Best regards,

Maki Haberfeld

Dr. Maria (Maki) Haberfeld
Professor
Dept. of Law, Police Science & CJA
John Jay College

On Feb 10, 2016, at 7:36 AM, Pete Piraino <pirainop@tiffin.edu> wrote:

Professor Haberfeld,

I am a doctoral student of Public Policy and Administration, at Walden University. My dissertation involves the polygraph examination as a pre-employment screening tool for police officers and its effect on future police misconduct. I would like to use the Measuring Police Integrity survey formulated by Dr. Klockars, Dr. Ivkovich, and yourself, as described in the U. S. Department of Justice, National Institute of Justice publication, dated December, 2005, as a measurement instrument of police perceptions of misconduct. My study at this time is limited to police officers in the State of Ohio. I feel this tool is the perfect fit for my study.

I am hoping that you are able to grant this permission, or if not, to direct me to the appropriate source for such approval. If you approve, I would appreciate your confirmation of the approval via return email. It is my university's policy to publish your approval in the appendix of my dissertation.

If you need further information, please do not hesitate to contact me. Thank you very much for your time and consideration.

Sincerely,

Peter T. Piraino

Assistant Professor, Criminal Justice & Security Studies
Program Coordinator, Undergraduate Criminal Justice & Security Studies
Programs
Tiffin University
155 Miami Street
Tiffin, Ohio 44883

Office: [419-448-3395](tel:419-448-3395)
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Re: Permission to Use Police Integrity Survey

Inbox x



kutnjak@msu.edu

12:36 AM (6
hours ago)

to me

Hi Pete,

No problem--please feel free to use the questionnaire. Could you please let us know when you plan to collect the data, how many respondents you plan to include, etc.? What is the timeline for your dissertation?

Sincerely,

Sanja

Quoting Pete Piraino <pirainop@tiffin.edu>:

Sanja,

Thank you for this link. I have the book Enhancing Police Integrity, but was not aware of this new book. I've looked it over and I can see how the new instrument pinpoints police misconduct as opposed to corruption. However, for the purpose of my dissertation, I'd like to stay with the first questionnaire, unless you have an objection. It's very impressive how many police officers have actually taken this survey (as indicated in Table 1.5).

Pete Piraino

Pete Piraino
Assistant Professor, Criminal Justice & Security Studies
Program Coordinator, Undergraduate Criminal Justice & Security Studies
Programs
Tiffin University
155 Miami Street

Tiffin, Ohio 44883

"Only two things are infinite; the universe and human stupidity...and I'm not sure about the former."

Albert Einstein

On Tue, Apr 12, 2016 at 2:51 PM, <kutnjak@msu.edu> wrote:

Hi Pete,

Yes, this is the old one. Many years ago, we used the same methodology to develop a new instrument. It has been used in a number of countries as well (e.g., Measuring Police Integrity Across the World <http://www.springer.com/us/book/9781493922789?token=prtst0416p>).

Sincerely,

Sanja

Quoting Pete Piraino <pirainop@tiffin.edu>:

Sanja,

The version I'm referring to has these case scenarios:

- Crime scene theft of watch
- Bribe from speeding motorist
- Theft from found wallet
- Drinks to ignore late bar closing
- Auto repair shop 5% kickback
- Supervisor: holiday for tune-up
- Excessive force on car thief
- Cover-up of police DUI accident
- Holiday gifts from merchants
- Free meals, discount on beat
- Off-duty security system business

I'm not sure if these are the corruption scenarios or the misconduct scenarios you are referring to. Does the general misconduct survey offer different scenarios? If so, yes, I'd love to see it. My only concern is that it seems the above scenarios were given to many police officers and has been established as a reliable survey instrument. Can the same be said for the updated one?

Thanks so much for your help on this!

Pete

Pete Piraino

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