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Walden University

College of Social and Behavioral Sciences

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Timothy P. York

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Walden University
2018

Abstract

Predictors of Conviction: An Examination of Arson Trial Outcomes in Florida

by

Timothy P. York

MPA, University of Maine, 2011

BS, Columbia Southern University, 2009

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy & Administration

Walden University

November 2018

Abstract

The influences that crime control, due process factors, and individual demographic characteristics have on the criminal trial outcomes of accused arsonists was unknown. Absent this knowledge, it was not clear if public policy ensures justice for the accused, particularly for the disadvantaged. The purpose of this quasi-experimental study was to investigate, using Packer's due process and crime control model as the theoretical framework, the relationship between time to trial, number of defense and prosecution witnesses, access to fire origin and cause experts, legal representation type, age, race, education, and gender and criminal arson case outcomes. A sample size of 165 archival court records of those accused of arson from 2011-2015 were analyzed using Packer. According to the results of the logistic regression models, there was a significant relationship ($p < .05$) between trial outcomes and the use of fact witnesses by the defense and by the prosecution. This relationship moved the pendulum toward crime control for the selected population. The ordered logistic model explained 6.9% of the variation in the criminal case outcomes. Policymakers can use the results of this study to inform criminal justice policy and to prioritize funding to assure fairness and social justice for the accused. Arson defendants and their counsel can use the results to prepare their defense to assure their social justice while prosecutors can use the results to better inform their decisions to assure the legal and factual guilt of the defendant. Future research is needed to provide a clearer understanding of the role that other variables play in the outcome for the population.

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Dedication

This dissertation is dedicated to all fire investigators who professionally and ethically seek the truth, and who work tirelessly in determining the origin and cause of fires for a more just and safer society.

Acknowledgments

In the accomplishment of this journey, many are deserving of thanks, none more than my family, especially my wife, Tammi, for their support and encouragement during the doctoral journey. Without their support and encouragement, the journey would have been more difficult and perhaps even insurmountable. To my daughters, Alyssa and Bethany, and my granddaughters, Grace and Faith, thank you for helping me understand that life is precious and that learning is lifelong and presented in many ways.

Thank you to Dr. William Benet, my dissertation committee chair. His constant encouragement and valuable insight made each revision better than the previous one. I would also like to thank my other committee member and methods expert, Dr. Augusto Ferreros, for his invaluable expertise and his patience in guiding me to understand better the best path through the data was invaluable. To Dr. Mark DeVirgilio, university research reviewer, thank you for your invaluable, honest, and constructive criticism which made the study better. To retired University of Maine professor Dr. Edward Laverty, thank you for planting the seed in my mind that I was capable of the work necessary to earn a terminal degree.

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Chapter 1: Introduction to the Study

Introduction

In 2004, the State of Texas executed Cameron Todd Willingham for the 1991 murder of his three daughters and the act of arson. The State of Texas convicted Willingham of the crime in 1992, but Hurst (2004) alleged that the execution ended an apparent miscarriage of justice. A jury of Willingham's peers, relying on government witnesses who provided expert fire origin and cause testimony, found the cause of the fire to be arson and that Willingham was responsible for the act and the death of his three daughters (State of Texas v. Willingham, 1992). Before his execution, an independent fire origin and cause investigator, relying on guidance from the National Fire Protection Association's (NFPA) Guide for Fire and Explosion Investigations, alleged that the state's expert testimony at trial regarding the origin and cause of the fire likely was flawed (Hurst, 2004). What the influence of crime control and due process factors and an individual's demographic characteristics have on their criminal trial outcome was unknown. In the case of Cameron Todd Willingham and all other accused fire setters and arsonists, the literature is mostly silent with little empirical research studying these variables.

Background

In the United States, the knowing, intentional, or reckless act of fire setting is classified as arson, and the unintentional act of fire setting is classified as accidental (NFPA, 2017). The process that occurs from the investigation of the origin and cause of the fire through to the final disposition of the case is an involved process. This process

includes the investigation, the charging decision made by the prosecutors, and the court process to determine the guilt or innocence of the individual alleged to have committed the crime (B.M. Grimm, personal communication, August 19, 2014). The final determination of the guilt or innocence of the accused can include any number of decisions, including a finding of guilt, either by admission by the defendant or a result of a trial, a finding of innocence at trial, a plea of no contest to the charge by the defendant, or a prosecutorial decision to not pursue the charge are the most common.

There is a lack of understanding regarding criminal arson trial outcomes. Crime control and due process factors, as well as the demographic characteristics of the individual, had not been examined to determine if there is a relationship between these variables that play a role in the court outcome for these arson defendants. If there is a relationship between and among the variables that play a role in the court outcome for arson defendants, then the results of the study can be used to gain a better understanding of the court process, possible outcomes, and the location of Packer's pendulum for those who are accused of arson in the future.

Problem Statement

The criminal process in the United States swings on a pendulum, with crime control on one side and due process on the other side (Packer, 1964). The criminal process should not infringe upon the accused arsonist's rights, and the criminal process can be examined empirically to ascertain where the pendulum currently resides. There is little empirical evidence on the current position of the pendulum as it relates to those accused of arson and fire setting. Those individuals accused of and convicted of arson

may experience negative outcomes, including the direct consequence of incarceration and the collateral consequences of losing the ability to vote, to possess a firearm, and difficulty finding and maintaining employment (Manza & Uggen, 2006). The societal impact of the criminal justice system can be both positive and negative. The closer the pendulum swings toward crime control, the more efficient the process is but at the expense of due process that affords more controls to make the system fairer (Packer, 1964). The position of the pendulum also affects public policy by dictating the current focus of public resources to maintain the position and expending resources to investigate the justness of the system. The position of those accused of arson and fire setting on the pendulum had not been determined and was worthy of study.

Purpose of the Study

An individual's treatment by the criminal justice system after being accused of fire setting in the United States required exploration. In this study, I investigated a Southeastern state from 2011 to 2015. The purpose of the study was to view the effects that time to trial, the number of prosecution witnesses, the number of prosecution experts, the legal representation type, the number of defense witnesses, access to fire origin and cause expert witnesses, age, race, gender, and education level have or do not have on the population through a criminal process lens to determine where on the criminal process or due process pendulum arson defendants are located. The results of the study were analyzed to determine if these variables were predictors of the likelihood of conviction of the selected population. After analyzing each variable's role regarding the trial outcome, the results were viewed through a criminal process lens to determine the effect of the

variables and the relationship between and among the factors on the location of the pendulum.

Research Questions and Hypotheses

The following research questions and hypotheses were developed to understand the relationship between social justice, crime control variables, due process variables, and various control variables.

RQ1: What effect does time to trial; number of prosecution witnesses; the number of prosecution experts; and the control variables age, race, gender, and education have on the criminal case outcome for those accused of arson in the West Central counties of the state of Florida from 2011-2015?

H_{1a}: The time to trial does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{0a}: The time to trial does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{1b}: The number of prosecution witnesses does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{0b}: The number of prosecution witnesses does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015

*H*_{1c}: The number of prosecution experts does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

*H*_{0c}: The number of prosecution experts does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

The independent variables were divided into predictor and control variables. The predictor variables were time to trial, number of prosecution witnesses, and the number of prosecution experts, and the control variables were age, race, gender, and education. The dependent variable was the criminal case outcome.

RQ2: What effect does the type of defense counsel; number of defense witnesses; access to a fire origin and cause expert; and the control variables age, race, gender, and education have on the criminal case outcome for those accused of arson in the West Central counties of the state of Florida from 2011-2015?

*H*_{1a}: The type of defense counsel does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

*H*_{0a}: The type of defense counsel does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

*H*_{1b}: The number of defense witnesses does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{02b}: The number of defense witnesses does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{12c}: Access to a fire origin and cause expert does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{02c}: Access to a fire origin and cause expert does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

The independent variables were divided into predictor and control variables. The predictor variables were the type of defense counsel, number of defense witnesses, access to a fire origin and cause expert, and the control variables were age, race, gender, and education. The ordinal dependent variable was criminal case outcomes.

The independent variables were selected because the predictor variables were identified as crime control factors or as due process factors, and the control variables were social conditions that are known to affect societal outcomes. The crime control variables, time to trial, number of prosecution witnesses, and the number of prosecution experts were selected because they were measurable representations of the speed and efficiency of the criminal justice process. The due process variables, type of defense counsel, number of defense witnesses, and access to a fire origin and cause expert were selected because the effects that the type of counsel representing the accused has on judicial outcomes had conflicting results in the literature. The number of defense

witnesses, and an expert witness that specializes in fire origin and cause, are instrumental in defense of a person accused of arson.

A dependent variable is what the scholars seek to measure and is reliant on the independent variables. The dependent variable for the study was the criminal case outcome, and it was selected because it is the focus of the criminal justice system and is measurable. The coding of the dependent variable resulted in an ordinal variable with the levels of not guilty, guilty misdemeanor, guilty felony 3rd degree, guilty felony 2nd degree, and guilty felony 1st degree.

Theoretical Framework

A theoretical framework can be used to view a phenomenon through a lens that enables a better understanding of that phenomenon (Corbin & Strauss, 2008). The theoretical framework used in this study was Packer's (1964) two models of the criminal process. The model includes a pendulum to describe two utopian processes with crime control on one side and due process on the other side, described by Packer in 1964 and expanded in 1968.

Nature of Study

The nature of this study was quantitative, quasi-experimental, and it was conducted using archive data. Quantitative research is consistent with understanding relationships between variables. In this study, I examined the effects of and the relationship between and among crime control factors; time to trial; number of prosecution witnesses; the number of prosecution experts; due process factors; type of legal representation of the defendant; number of defense witnesses; access to a fire origin

and cause expert; and the offender characteristics age, race, gender, and education level. Through statistical analysis, the effects of and the relationships between and among the variables was examined to place the trial outcomes between the ends of Packer's (1964) two model theory. The results were then viewed to determine the social justice afforded to the arson defendants.

The population for the study was criminal arson defendants in the West Central counties of the state of Florida from 2011-2015. The collected data were solely archival data and were collected through online electronic access and, in a limited number of cases, manually. The archival data included conviction data and case files held either electronically or in hard copy by each county circuit court. Where electronic access was not available, I manually reviewed the case files to collect the necessary information.

The variables collected were the dependent variable, six independent predictor variables, and four independent control variables. The ordinal dependent variable was the trial outcome measured as not guilty, guilty misdemeanor, guilty felony 3rd degree, guilty felony 2nd degree, and guilty felony 1st degree. The independent variables were time to trial, number of prosecution witnesses, the number of prosecution experts, type of defense counsel, number of defense witnesses, access to a fire origin and cause expert, age, race, gender, and education level.

Definitions

Amicus brief: A brief usually at the appellate level (Garner, 2014).

Arson: The crime of maliciously and intentionally, or recklessly, starting a fire or causing an explosion (NFPA, 2014, p. 14).

Blishen & McRoberts Socioeconomic Scale: A scale developed by Blishen and McRoberts (1976) that assigns a socioeconomic score to occupations by using income and education data.

Counsel: One or more lawyers who, having the authority to do so, give advice about legal matters. The terms counsel and attorney are used interchangeably in the dissertation. The term counsel has been used almost exclusively to define both (Garner, 2014).

Court appointed counsel: An attorney appointed by the court to represent a person (Garner, 2014).

Defense counsel: A lawyer who represents a defendant in a civil or criminal case (Garner, 2014).

Expert witness: A witness qualified by knowledge, skill, experience, training, or education to provide a scientific, technical, or specialized opinion about the evidence or a fact issue (Garner, 2014).

Fact witness: A witness who has firsthand knowledge of something based on the witness's perceptions through one or more of the five senses. (Garner, 2014).

Falsifiable: The susceptibility of a hypothesis, theory, or view to be proven false (Garner, 2014).

Fire setting behavior: A behavior that includes setting fires both accidentally and intentionally (Stockburger & Omar, 2014, p. 78).

Plaintiff: The party who brings a civil suit in a court of law (Garner, 2014).

Pro Se: One who represents oneself in a court proceeding without the assistance of a lawyer. Synonymous with self-representation (Garner, 2014).

Public defender: A lawyer or staff of lawyers, usually publicly appointed and paid, whose duty is to represent indigent criminal defendants (Garner, 2014).

Retained counsel: One or more lawyers, hired by the defendant, who, having the authority to do so, advise on legal matters (Garner, 2014).

Assumptions

There were assumptions made that could affect the reliability of the study if they are found to be incorrect. The case files and trial records were presumed to be accurate because the court files contained information from independent sources, law enforcement, prosecutors, and the court. Another assumption was that a criminal arson defendant who pleads guilty or pleads no contest to the criminal charge was legally and factually guilty.

Scope and Delimitations

The study examined relationships between and among crime control and due process variables and their effect on criminal trial outcomes. The scope of the study was to examine the effects that selected crime control and due process variables; time to trial; number of prosecution witnesses; the number of prosecution experts; type of defense counsel; the number of defense witnesses; access to a fire origin and cause expert; and the control variables; age; race; gender; and education level of those accused of arson in the West Central counties of Florida from 2011- 2015 had on the accused's criminal process outcome. The selection of the scope of the study was one of the delimitations of

the study. The time frame selected, 2011- 2015, prevented the analysis of any change that the introduction of the NFPA 921, Guide for Fire and Explosion Investigations in 1992 may have had on the field of fire investigation and on the outcome of criminal arson trials.

Limitations

Those accused of committing the crime of arson comprised the population for the study, and as a result, the quasi-experimental study did not randomly assign members to test groups. This limitation exists in all quasi-experimental studies and was not unique to this individual study. The inability to randomly assign members to test groups potentially limited the generalizability to a larger population and caused internal validity concerns as well.

Significance

The study was significant because I investigated a gap in the knowledge regarding offender characteristics that may affect criminal arson defendant outcomes. I viewed the results through a theoretical lens by applying Packer's (1964) two models of the criminal process to an aspect of the current criminal justice system. The results of the study provide an understanding of the effects of and the relationships between and among the independent variables on the trial outcomes of those accused of criminal arson defendants.

The results of this study fill a knowledge gap and can be used to inform future criminal arson defendants, other criminal defendants who rely on expert witnesses in their defense, and the criminal justice systems in the United States and the State of

Florida. When comparing the identified variables to their condition, arson defendants will be able to view the results of the study to determine their likely chances of being convicted. I looked at the use of expert witnesses in arson trials; many of the same issues (i.e., affordability, qualifications of the expert, and the ability to get their expert's opinion into the trial record) may be generalizable to other populations where the government uses expert witnesses at trial to secure a conviction.

The study may have implications for criminal justice policy and practice in the United States and the State of Florida. The results of the study were viewed through a two-model lens, providing those in the criminal justice system with a better understanding of the social justice afforded to the population. Policymakers can use the results of this study to make changes that may better align criminal justice policy with the principals of justice as outlined in the U.S. Constitution, and these changes may also ensure a more fair and impartial administration of justice in the United States.

Summary

An examination of the relationship between and among time to trial, number of prosecution witnesses, the number of prosecution experts, type of defense counsel, number of defense witnesses, the accused's access to a fire origin and cause witness, and different demographic characteristics, had not occurred before this study. I examined the effects and relationships between and among different factors on the outcome of criminal arson trials in the West Central counties of Florida. The results of this study were viewed through Packer's (1964) two models of the criminal process regarding the social justice afforded to these criminal arson defendants.

Chapter 2: Literature Review

Introduction

Criminal justice policy in the United States relies on the three branches of government for the development, implementation, and interpretation of the current policy and policy change moving forward. The location of current criminal justice policy on Packer's (1964) crime control due process pendulum could be useful for public policy analysis and an examination of the placement of this pendulum as it applies to those accused of fire setting has not been outlined in the literature. The purpose of this study was to examine the present location of the pendulum, as it relates to those accused of fire setting, through an examination of time to trial, number of prosecution witnesses, the number of prosecution experts, type of defense counsel, number of defense witnesses, access to a fire origin and cause expert, age, race, gender, and education level.

The effect of time to trial, number of prosecution witnesses, the number of prosecution experts, type of defense counsel, number of defense witnesses, access to a fire origin, and demographic characteristics have been reported in the literature for different types of crime. Martin (2013) investigated the demographic characteristics that affect the trial outcomes of those accused of homicide, and Blanco et al. (2009) and Vaughn et al. (2010) examined the demographic characteristics of self-reported fire setters. Scholars have revealed that the relationship between and among expert witness testimony, the type of counsel, time to disposition, the use of fact witnesses, and demographic characteristics had not been investigated as it relates to those accused of arson and the outcome of their criminal trials.

In the literature review, I investigate the current literature and the seminal works associated with the history of the criminal justice system in the United States, criminal justice policy, time to trial, number and types of witnesses, type of counsel, and demographics as they relate to general societal effects, criminal offender outcomes, and arsonist offender outcomes. The literature review consists of 11 sections: introduction, literature review search strategy, theoretical framework, history of the criminal justice system in the United States, political impacts, charging decisions, predictors of conviction and control variables, criminal case outcomes, the gap in the literature, and the summary. Each identified variable for the study has a section within the chapter discussing the role of the variable in the outcomes in society, for those accused of non-fire-setting crimes and for those accused of fire setting.

Literature Search Strategy

I review the available literature as it relates to the history of the criminal justice system in the United States, policy-making in criminal justice, and its political and regulatory implications. Expert witness, type of counsel, time to conviction, and fact witnesses used by both the prosecution and defense are examined as crime control and due process factors. The control variables (i.e., age, race, gender, and education) are examined regarding their role in society, in criminal trial outcomes, and in arson trial outcomes. I conducted a literature search using Walden University library's online databases. The databases searched were Academic Research Complete, Criminal Justice Periodicals, Education Research Complete, ERIC, International Security and Counter-Terrorism, Political Science Complete, ProQuest Central, Psyc Info, Sage Premier, and

Soc. Index. I also searched using the University of Maine library's online databases, Science Direct, and JStor and the Google Scholar search engine. The searches encompassed the years 2010 through 2018 but were expanded to find landmark research in some areas. The keywords used to obtain articles from peer-reviewed journals related to this study included *arsonist, fire setter, characteristics, offender, age, gender, race, education, expert witness, public defender, criminal justice, policy making, and politics.*

There was a dearth of recent research on the characteristics of fire setters and the role these characteristics play in the likelihood of being convicted of the fire setting behavior. The lack of empirical evidence was addressed in the following manner. The scholars who had investigated the characteristics of fire setters were reviewed and used to gain an understanding of the historical characteristics of fire setters both convicted and nonconvicted. These studies encompassed Lewis and Yarnell (1951) through Long, Fitzgerald, and Hollin (2015), with the majority from the 1990s and 2000s. Information regarding the characteristics of criminals who have been convicted of other crimes was reviewed and used to provide a general understanding of the characteristics of criminals and to relate those characteristics that increase the likelihood of being convicted of a crime. The effect of each variable on societal outcomes was also reviewed to provide an understanding of the effect each has on an individual who does not participate in criminal conduct or firesetting behavior.

Theoretical Framework

Social Justice

Scholars have described and explained social justice in a variety of ways, producing different theories. These theorists discuss all aspects of society, access to health care, to education, and to the criminal justice system. Zalman (2007) explained that the study of criminal justice is multi theoretical, and Kraska (2006) listed eight theoretical orientations for the study of criminal justice. One of these orientations, as described by Kraska, is Packer's (1964) crime control and due process models. Packer's crime control and due process model was selected as the theoretical framework for the study because Packer viewed the criminal justice system through a lens that is either focused on crime control or due process. It is the placement of the criminal justice system on a pendulum between these two points that allows for an analysis of where criminal arson defendants currently reside and the social justness that they experience.

The concepts of justice and social justice have been contemplated and written about for thousands of years. Socrates (as cited in Kaplan, 2009) theorized that when an individual understands the expectations of his or her position in society and abides by those expectations, there is justice, and Plato (as cited in Fowler, 1999) argued that the individual is responsible for that understanding and for abiding by the expectations. A common theme of social justice is fairness, or as Aristotle explained, when those in society have what they should, then it is just, and when individuals in society do not have what they should, there is an injustice (as cited in Drevdahl, Kneipp, Canales, & Dorcy,

2001). This sense of fairness was explained by Kelly (2001) when restating Rawls (1971) that justice is fairness.

Two Models of Criminal Process

Expanding on Shick (1926), Packer (1964) theorized that the criminal process, from detention to appeal, could be described using two polarity models: crime control and due process. In the crime control model, Packer emphasized the efficiency of the process and described it as an assembly line (p. 13). In the due process model, Packer focused on the legal guilt of the defendant and was concerned with the process and the ability to question the government at each step with an impartial decision maker overseeing the process.

In the crime control model, there is efficiency over accuracy. According to Packer (1964), in the crime control model, mistakes occur, and the efficiency demanded of the process accepts this error rate. The error rate is acceptable because the actors, law enforcement, and state's attorneys will recognize those who are not guilty of the offense arrested for and the steps in the process will set most who are innocent free. The remaining innocent individuals who proceed through to either a plea of guilty or are adjudicated guilty are a byproduct of the process; a presumption of guilt follows those left throughout the remainder of the process (Packer, 1964).

The idea of presuming guilt is contrary to the understanding of the criminal justice system in the United States where an individual is innocent until proven guilty. Packer (1964) explained that presumption of guilt and presumption of innocence are not contrary to each other, but the presumption of guilt allows crime control to move forward

efficiently while due process presumption of innocence remains for all until final adjudication by a judge or jury. The presumption of guilt within crime control allows the process to move forward efficiently without questioning the accuracy of the process. If an individual remains in the process, then guilt is presumed, and the process moves forward. The presumption of innocence, as explained by due process, requires that until the finding of guilt by the adjudicator the process must continue.

In due process, there are enough safeguards in place that some who are guilty are set free by the process to protect the integrity of the system. In the due process model, which consists of seven intertwined parts, the individual accused of committing a crime has an opportunity to question the veracity of the allegation. Packer (1964) explained these seven parts are scrutiny of the process, elimination of mistakes, not interested in the efficiency of the process, legal guilt, the presumption of innocence, equality, and questioning of the morality and utility of the criminal sanction imposed.

There is a difference between factual guilt versus legal guilt. Factual guilt occurs when an individual has committed the crime alleged and is guilty of such while legal guilt is determined only after the adjudication of the alleged offender following all of the required safeguards outlined in the due process model (Packer, 1964). It is possible to be factually guilty but not legally guilty, therefore allowing an offender to go free even though he or she committed the alleged offense. The presumption of innocence includes the potential to be legally innocent while factually guilty and occurs when the safeguards established to ensure due process catch a procedural error or misconduct by the actors for

the state. In the due process model, it is better to have a factually guilty individual go free than for a factually innocent person to be found legally guilty.

It is essential to understand the political and legal atmosphere that was present in the United States while Packer (1964) developed the model of crime control and due process and later expanded into book form in 1968. During 1964, the United States was a divided country being pressed into combat action in Southeast Asia, a war on poverty at home, and the civil rights movement. The Supreme Court was transitioning from a strong crime control stance to more of a due process stance with decisions in *Mapp V. Ohio*, 1961, forbidding the use of illegally obtained evidence against the defendant, *Gideon v. Wainwright*, 1963, guaranteeing the right to counsel, and *Miranda v. Arizona*, 1966, affording the accused the right to remain silent.

Packer's two models have received discussion in the literature since 1964. According to Avarim (2011), this discussion has spread across disciplines. In these disciplines, scholars use Packer's model to understand different phenomena in the social sciences. According to Avarim, elite law schools used the models to understand the Warren court in the 1960s. Social scientists used Packer's model to describe the transition from crime control to due process that was occurring during the 1960s. Social scientists initially hesitated to call Packer's concept a model because both crime control and due process were descriptions of a perfect process that did not exist. Avarim explained that Packer intended to place the current criminal justice system somewhere between the two extremes to better understand the emphasis of the system, quick and efficient or slow and

safe. Ferrandino (2014) examined the efficiency of the criminal circuit courts in Florida and found that the pendulum does not necessarily swing toward crime control.

Packer (1964) used the polarity of crime control and due process to explain the criminal process, while other theorists have also used polarities as a theoretical framework. The use of polarity in social science research is grounded in the research for the workplace, social change, and ontology (Benet, 2006; Davis, 1973; Gusfield, 1967). Benet (2006, 2012, 2013) used five polarities as a framework for workplace democracy. A set of these paired variables is justice and due process.

I examined the justice and due process polarity. Benet (2013) theorized that viewing workplace democracy through a lens on the relationship between opposing factors, or polarities with justice and due process, was more like a function than of meaning. Benet viewed these as poles while each is having the potential for both positive and negative consequences. Packer's (1964) criminal process and due process are poles that have the potential for both positive and negative consequences. Focusing on swinging the pendulum to a total criminal process pole would result, according to Benet, in negative consequences as would a swing to the other end toward the pole of due process. A process that allows for the criminal process to move forward while also securing due process for those accused of a crime would satisfy Benet and would place a centric focus on Packer's two models.

Packer (1964) allowed for the identification of variables that describe crime control and due process. Once identified, I analyzed the variables, which enabled the placement of the criminal justice system, as it pertains to criminal arson defendants, on

the pendulum. According to Packer, crime control relies on the efficiency of the process. The process can be analyzed by examining the time it takes for the disposition of the case and with an examination of the number of fact witnesses used by the prosecution and by the defense. Due process in Packer's model includes the safeguards within the system. I analyzed these safeguards by examining the access to fire origin and cause expert witnesses and the type of counsel used by the accused.

History of the Criminal Justice System in the United States

Walker (1998) divided the criminal history of the United States into three eras: the colonial period, the building of the system from 1820-1920, and modern era. This discussion includes these three overarching periods.

Colonial

Criminal justice in the colonies was a mixture of religious and government control with the church playing a more significant role than the government. According to Walker (1998), the church community played a role in establishing the norm for their community and in the decision of guilt or innocence when accused of committing an offense outside of the norm. Although this was true for many colonies, the Puritan colonies in Massachusetts followed the system established by the King of England with a colonial governor, appointed by the King, who appointed the sheriff. According to Walker, the position of sheriff was more administrative than that of a law enforcement leader. As time went by the colonial governor was appointed by political influence in the colonies leading to the sheriff also becoming a politically influenced appointment. The

role of law enforcement in the colonial period was influenced either by the church or by the King. The court system in the colonial era also had the same influences.

The system of courts in the colonial period were tribunals that would sometimes occur at the scene of the alleged violation or in the courtroom. The tribunal occurring at the place of the alleged crime would involve the justice of the peace deputizing men, some who may either be witnesses or victims, to arrest the person accused of having committed the crime, and these same men would be the jury to decide the guilt or innocence of the defendant (Walker, 1998). For those trials that did make it to a court, the use of prosecutors was different in the colonies than anywhere else.

The role of the prosecutor in the criminal justice system began with influence from England, France, and the Dutch, but it is a U.S. invention. The position of the prosecutor was a local public office with some colonies having district attorneys who were appointed by the royal governors that was like the current system in place. The uniqueness of the role of the prosecutor during the colonial period speaks to the development of the criminal justice system in the United States today. The role of the defense counsel also evolved into a system that only existed in the colonies. The evolution of the defense counsel's role started with the English system with limited ability to argue to the U.S. system that exists today where the defense counsel can argue points of law and be active in their client's defense. The focus of the system in the colonial period was on the process of the system and less, although considered, on the rights of the defendant.

The rights of the defendant were a concern of the colonial criminal justice system. According to Walker (1998), defendants did have rights. The 1648 Massachusetts Body of Liberties assured a speedy trial, the right to bail, the right to legal counsel, and the right to a trial by jury. Although the Massachusetts Body of Liberties afforded the defendant rights, the document was focused on crime control assuring the needs of the community trumped the rights of the defendant.

The criminal justice system in the colonies was not effective at making society feel safe, and this resulted in society often taking justice into their hands. After the revolutionary war and the ratification of the Constitution, reform to the system began that, according to Walker (1998), allowed the new nation to develop its criminal justice system that included protections against the tyranny they had felt under English rule.

Developing the System

The period from the declaration of independence to 1920 in the United States is when the criminal justice system developed into the core system that exists today (Dale, 2011, Walker, 1998). The changes began with the ratification of the Bill of Rights in 1791 and with the passage of the Judiciary Act in 1789. During this period the States began to develop a criminal justice system with the Federal government initially taking a back seat to the development of the system.

The development of the criminal justice system evolved from the power given to the States and from court decisions that developed case law. The Constitution gave police powers to the States resulting in the federal government mainly remaining out of the criminal justice system until the Civil War (Dale, 2011). In the infancy of the nation, the

role of the central government and the States regarding criminal justice defaulted to the States, however as the turmoil of the impending Civil War began the central government took steps into the criminal justice arena.

As the United States grew and changed from small religious communities to a commerce society, the need for more formal systems began. The institution of police forces in the south was mostly in response to slave uprisings (Dale, 2011), while the development of these police forces, recognizable today as police departments, began in the larger cities on the east coast (i.e., Boston, New York, and Philadelphia) they were developed following Sir Robert Peel's London Metropolitan Police model (Dale, 2011; Spillane & Wolcott, 2013; Walker, 1998). These developing east coast police forces were in response to the race riots that were occurring (Dale, 2011). These riots were a result of the move from a communal society to a commerce society that increased the populations in the cities forcing different ethnicities and religions to live closer together (Walker, 1998). According to Walker, one problem with the use of the London model in the United States was that in London the bobbies were employed by the country and responsible to the country, while in the United States the police were employed by the municipality that hired them. This arrangement resulted in the police forces being subject to local control and influence, both good and bad. According to Walker, with the lack of personnel standards and training standards, the police force was often subject to corruption resulting in a private police force for criminals. The organizations were initially developed by combining night watches and constables to keep the peace but evolved into organizations focused on crime control. At the same time as the police

organizations were developing the role of the courts was also evolving (Dale, 2011). While the development of the police force was underway, the evolution of the court system also continued.

In the early 1800s, the role of the court was as a determiner of truth, and this determination was carried out by the male members of the same community where the alleged crime had occurred. According to Walker (1998), the courts were responsible for making the criminal justice system less discriminatory, even though the popular opinion of the time was against that. The focus of the system was still, as it had been in the colonial period, on crime control and not on the due process of the system.

After the Civil War, the criminal justice system began to change with a focus on the central government. According to Dale (2011), Congress began to pass legislation that created federal law enforcement agencies and criminalized among other actions, civil rights violations and voter intimidation. This period also saw Congress give federal investigative authority over major crimes on federally controlled lands. During the same period, the Supreme Court struggled to uphold many of these laws as constitutional which resulted in improvements to the defendant's rights. In *Coffin v. United States* (1895) the court found that a defendant is innocent until proven guilty and in *United States v. Ball* (1896) the court found that trying a defendant a second time when the original indictment was found to be defective could not occur.

At the dawn of the 20th century, the Supreme Court embarked on a journey toward protecting the rights of the accused. Although the Court deferred to the States, in the

1920s and 1930s, they began to apply the 14th amendment to due process rights for the defendant in state courts. In *Moyer v. Peabody* (1909) the Supreme Court expressed that “what is due process of law depends on the circumstances” (212 US at 84) and in *Powell v. Alabama* (1932) the court applied the 14th amendment to the rights of the defendant related to right to counsel in a state case (Dale, 2011). The application of due process in State criminal proceedings for the defendants began a swing toward a due process model. Due process is less efficient and slows the system down to afford the defendant an opportunity to a fair process. A result of the slowdown caused by the movement to due process was to partially address the case backlog using plea bargaining (Dale, 2011). The courts by the mid-1800s had developed to allow appeals to criminal convictions, however, due to the cost, an appeal rarely occurred.

In the mid-1800s the jury still controlled the courtroom, installing their version of justice through the interpretation of laws and often ignoring the evidence. According to Dale (2011), the felony courts, as arrests and grand jury indictments for murder continued at the same rate, struggled to maintain conviction rates for murder. As the century wore on many states attempted to secure the defendant’s due process rights by reducing the power of the jury with the passage of laws that restricted the jury to solely assessing the evidence against the defendant, and then applying the law as instructed by the judge.

As the 19th century ended the use of extra-legal factors, outside of the criminal justice system, continued to plague the country. Jurys were still inclined to decide what the law was, and lynching had continued to be a common practice for popular justice to occur. The defense bar attempted to persuade the Supreme Court that the 14th

Amendment's, equal protection clause applied the US Constitution to the States with little effect (Dale, 2011).

Plea bargaining had been used in the past but was utilized as a method to reduce workload and as a method to reduce the power the jury had within the system. According to Spillane and Wolcott (2013) and Dale (2011), during this period judges, prosecutors, and defense attorneys utilized plea bargaining to reduce workload. The system allowed the defendant to plead guilty, often to a reduced charge, with an agreed upon punishment. Plea bargaining was also utilized to limit the power of the jury. Although by the early 1900s, plea bargaining was being used to reduce workloads and to control the power of the jury it had not always been that way. At the start of the 1800s, the use of plea bargaining was discouraged by judges because they felt it took the power of decision away from the decision makers. As the century ended, the use of the plea bargain was a means to an end by removing the jury's ability to determine what the law was resulting in less frequent miscarriages of law.

Plea bargaining was utilized to reduce caseloads and to make the system more efficient, and at the same time the role of the prosecutor in the court system was also taking on a new role. According to Walker (1998), the role of the prosecutor developed where in some jurisdictions they could make charging decisions. The changes to plea bargaining and the role of the prosecutor saw the courts developing into the modern system we know today. The role of the prosecutor continued to develop, reducing the influence of the jury by allowing the prosecutor, defense counsel, and the court to plea bargain and for the prosecutor to dismiss charges against the defendant (Walker, 1998).

The role of the defense counsel also became more pronounced. The defense bar developed the technical means necessary to question the legality of the process. At the start of the 20th century, the court system struggled with discrimination against minorities and immigrants. In Chicago, defense attorneys attempted to use their expert witnesses to rebuke what they felt was a flawed translation by the government's interpreters, involving Italian immigrants, and the court refused (Dale, 2011).

The absolute right to counsel was not yet recognized and was not universally applied but was beginning to gain traction. Los Angeles County opened a public defender's office in 1914, and others followed suit through the 1930s (Dale, 2011; Walker, 1998). While the court system that evolved from the progressive era is fundamentally the same as today a stark difference from then to now is the rights of the defendant in court. Until this time the right to representation by counsel was reserved for those that could afford it. The development of public defender offices, first in Los Angeles in 1914 and then spread throughout the country by the 1960s (Walker, 1998) began to change the court system's focus to the defendants' rights.

The modern court emerged during this period expanding from the informal venues of the 19th century to the formal system that exists today (Spillane & Wolcott, 2013). Spillane and Wolcott refer to the court system in the early 20th as a "wedding cake" (p. 48). At the bottom were the city and or county courts that heard minor criminal and civil cases. The next layer of the cake was comprised of the court that heard more severe offenses. It is this court that heard felonies and more severe civil cases. The next layer was the appeals court that reviewed the decisions of the lower court for errors in

law. At the turn of the century, appeals were infrequently pursued because the defense was rarely able to afford the associated expense.

Modern Era

The criminal justice modern era begins in the early 20th century. According to Walker (1998), the race riots at the end of WW I and the red scare followed by prohibition in 1920 led to the appointments of crime commissions to study crime. According to Spillane and Wolcott (2013), at least 35 criminal justice commissions took place from 1919 to 1931 to understand the criminal justice system and to make recommendations for reform.

The first presidential interest in criminal justice policy occurred in 1929 when President Herbert Hoover established the National Commission on Law Observance and Enforcement that resulted in fourteen commission reports. Due to the Great Depression, all but one of these fourteen reports were forgotten (Walker, 1998). Report number eleven, "Lawlessness in Law Enforcement," was the one report that gained traction. According to Walker, the effect of the report was not immediate, but it brought public awareness to the police brutality that was occurring and serves as the baseline to gauge police brutality in the United States. With interest in the 1920s on how the criminal justice system operated and how to reform the system, it is ironic that the next large-scale study into the subject did not occur again until President Johnson in 1967 appointed the Commission on Law Enforcement and Administration of Justice.

The Commission on Law Enforcement and Administration of Justice that was appointed by President Johnson in 1967 resulted in the passage of the Omnibus Crime Control and Safe Streets Act of 1968. This act provided money to criminal justice agencies to improve their operations and provided money for criminal justice system research. The later years of the 20th century saw an emphasis on being tough on crime. The liberal Supreme Court of the 1960s and 1970s had taken substantial steps forward regarding due process rights of the defendant. The 1980s and 1990s saw a Congress that was enacting “tough on crime” legislation and the more conservative Supreme Court of the 1980s and 1990s, however, chose to leave in place the substantial due process rights for defendants from the 1960s and 1970s.

Political Impact of the Criminal Process

Development of public policy occurs for different reasons. According to Theodoulou (2004), placement of an issue on the public policy agenda requires a personal, social, or economic cost for the parties affected by the policy. Cobb and Elder (1995) argued that creation of an issue is accomplished by re-adjustors, exploiters, circumstantial reactors, or do-gooders. Theodoulou (1995) described agendas as either highly general or highly specialized while Cobb and Elder classify agendas as either systemic or institutional. The systemic agenda has an interest in issues that are of general societal concern while institutional agendas are developed by those in a position to determine policy and often very specific. Criminal justice is a policy area where systemic and institutional agendas can collide with constitutional concerns.

The systemic agenda for criminal justice includes reducing crime rates, decreased recidivism rates, and the war on drugs. The institutional agenda for criminal justice focuses on specific items to address the broader focus of the systemic agenda. Examples of criminal justice institutional agenda items are mandatory minimum sentencing, three strikes laws, and aggressive stop and talk police policies designed to identify individuals in specific areas. The development and implementation of these and other criminal justice policies in the United States are essential to understanding because it is a policy area that has a possible outcome that infringes on individual constitutional rights. According to Garrison (2009), a criminal justice policy involves moral and ethical questions regarding right and wrong or justice and injustice requiring the application of accountability, guilt, and blame. All of which separates criminal justice from policymaking in other areas. Criminal justice policy results in government intrusion into individual lives with moral and ideological consequences. These consequences, most critically constitutional rights infringement, potentially arise from the question asked, the desired outcome, and the proposed solution to achieve the goal. Tonry (2013), argued empirical evidence had not been relied upon since the 1970s to develop crime control policy and because this area of policy is where the potential for constitutional rights infringement is most significant and should be based upon research and not the political whim.

Lindblom (1959) discussed that public policy is developed either focused on a general overarching problem or focused on solving a specific problem and that in either case, the process can be slow or as he referred to it as “the science of muddling through” (p. 79). The development of criminal justice policy in the United States has not occurred

in leaps and bounds but in small incremental steps designed to solve the macro and micro problems but not so aggressively to cause the problem to get worse.

Criminal Justice Policy

Criminal justice policy in the United States is the result of nearly 250 years of societal input, legislative action, executive implementation, and judicial interpretation. In the United States, the authority for the criminal justice system comes from the Constitution and is defined by the legislature, implemented by the executive, and interpreted by the judiciary.

Legislative Branch

The legislative branch is empowered by the United States Constitution to make laws, and according to Grossman (2013), the legislative branch plays a more significant role in determining criminal justice policy than the executive or judicial branches of government. Stolz (2015) argued that the purpose of enacting criminal justice legislation is two-fold. First, criminal justice legislation assures the law-abiding members of society that something is being done to control crime. Second, criminal justice legislation establishes the society's definition of right and wrong. According to Whitman (2014), before the late 1960s and early 1970s, the focus of the criminal law was on "penal modernism" or the focus on the individual punishment of those responsible for the criminal behavior. During the late 1960s and early 1970s, the law began to focus more on getting tough on crime. Getting tough on crime is evidenced by the passage of legislation that focused on increased law enforcement and increased penalties for those that committed a crime. Congress passed the *Law Enforcement Assistance Act* (1965) and

passed the *Omnibus Crime Control and Safe Streets Act* (1968), which was the first designed block grant program and was passed to provide State and local governments with funding to improve local law enforcement. Following these laws were the *Anti-Drug Abuse Act* (1980) mandating minimum sentencing for drug crimes, the *Sentencing Reform Act* (1984) eliminating Federal parole and instituting tougher truth in sentencing, and the *Violent Crime Control and Law Enforcement Act* (1994) that enacted the three strikes sentencing guidelines, increased the Federal death penalty, and authorized states to register sex offenders. The result of the passage of these laws has been an increased prison population in the United States.

Congress, relying on the commerce clause of the United States Constitution, has enacted legislation regarding arson. The commerce clause, found in Article 1 section 8 clause 3 states “To regulate commerce with foreign nations, and among the several States, and with the Indian Tribes” and are all directly addressed in Federal criminal arson statutes. In 1825 Congress outlawed arson in Federal buildings and on the high seas (Act of March 3, 1825, § 2, 4 Stat 115). Since 1825 Congress has expanded the reach of Federal criminal arson law when it applied arson to special maritime and territory jurisdictions (18 U.S.C. § 81, 1988), Indian reservations (18 U.S.C § 1153(a), 1988), United States property (18 U.S.C § 1361, 1988), articles in foreign commerce (18 U.S.C § 1364, 1988), communications facilities (18 U.S.C § 1362, 1988), and aircraft and aircraft facilities (18 U.S.C § 32, 1988). The passage of the *Anti- Arson Act of 1982* (Pub. L. No. 97-298 96, STAT. 1319), better outlined the offenses that could be charged as arson in the Federal courts and the passage of the *Church Arson Prevention Act* (1996)

made it a Federal offense to commit arson to a place of worship (Pub. L. No. 104-155, 110 STAT. 1392).

Recognizing that arson was particularly concerning because of the potential substantial loss of life and property destruction, Congress also has passed laws specific to the prevention, detection, and control of arson (15 U.S.C § 2220, 1978; 15 U.S.C § 2221, 1978). These laws established the policy of the Federal government to assist State and local authorities in the prevention, detection, and control of arson and provided grants to assist in the endeavor.

Congress has played a role in the prevention, detection, investigation of those accused of committing the crime of arson by passing laws that have sought to criminalize the act of arson. The charging of arson at the Federal level can only occur when there is a clear Nexus that the crime occurred in violation of federal law. In the United States, arson is charged and prosecuted mostly by the States.

The Florida legislature has played a similar role in the development of the State of Florida's policy regarding arson through the passage of laws that codified and made the act of arson a crime. The willful and unlawful burning or exploding of property is defined as the crime of arson in the State of Florida (FLA. STAT. § 806.01, 2016). The penalty for committing arson varies with the occupancy and with the circumstances surrounding the act. A person who sets fire to a dwelling whether occupied or not, to an occupied building, to a building that would normally be occupied, or to a building that the person knew or should have known was occupied is guilty of the crime of arson in the first degree, punishable by a prison sentence of up to 30 years (FLA. STAT. § 775.082(6)(b1),

2016) and if a person sets fire to property not otherwise described above they are guilty of the crime of arson in the 2nd degree, punishable by a prison sentence not to exceed 15 years (FLA. STAT. § 775.082(6d), 2016). The Florida statutes also provide for sentencing enhancements if the crime is committed by a person who is a violent career criminal, a habitual felony offender, a habitual violent felony offender, or a three-time violent offender (FLA. STAT. § 775.084, 2016). The statutes also provide for the judgment of fines (FLA. STAT. § 775.083, 2016).

Executive Branch

The executive branch also has utilized existing criminal laws to further the prosecution of arson. According to Egan (1995), the Federal executive branch began to use the mail fraud statute that was passed by Congress in 1872 to prosecute arson. By using the mail fraud statute, it is only necessary for the government to prove that fraud was intended, not that arson was committed. The mail fraud statute is applied when the individual accused of arson uses the mail system to perpetuate the fraud.

The executive power is granted to the President of the United States by the United States Constitution. As the head of the executive branch, the President is responsible for the implementation of the law and with the development and implementation of government policy in many different areas. Crime policy did not receive presidential attention until the Hoover administration, and it was not until the election of President Johnson in 1964 that criminal justice policy in the United States became tough on crime. It was not until the elections of President Nixon and President Reagan and their war on

drugs, and President Clinton's election and his 1994 harsher criminal penalties that crime policy would remain on the policy agenda.

Crime control policy was begun in earnest in the United States by President Hoover. According to Calder (1993), the first president to implement crime control policy was Hoover, which as outlined in the section above coincides with the nature of criminal justice policy in the United States before 1929. Hoover and the Presidents that followed have implemented crime control policy using different forums to get their message across.

The executive branch has different methods available to implement crime control policy. The Presidents have used Presidential signing statements and issued executive orders to implement these policies. Presidential signing statements are the executive branch's attempt to implement legislation, but with a statement attached, that outlines the executive's interpretation of that law. While utilized since the Monroe administration, the presence of presidential signing statements is not addressed explicitly in the Constitution but inferred from the power enumerated to the position in Article II of the Constitution. According to Conley (2011), Presidents use signing statements for five reasons; to explain, to claim credit, to laud Congress, to chastise Congress, and to interpret or challenge the law. The use of presidential signing statements has increased in the last 50 years, and this increase is present in criminal justice policy signing statements.

Presidential signing statements have been used specifically for criminal justice policy for the five reasons outlined by Conley (2011). Oliver, Marion, and Hill (2014) found from 1929-2010 presidents had used signing statements 2,043 times and of these,

141 signing statements had addressed criminal justice policy. Their use spanned all 14 administrations with 34% being used to interpret or challenge the law, 28.4% were explanatory, 14.9% were laudatory, 14.9% to claim credit, and 7.8% to criticize Congress. The use of signing statements have been favored more recently but were used by all the administrations since 1929. The use of criminal justice policy signing statements by the Hoover, Roosevelt, Truman, Eisenhower, and Kennedy administrations averaged five per administration. The Johnson administration signed 13, while Nixon signed only four more closely aligned with the Hoover through Kennedy average. The next three administrations, Ford, Carter, and Reagan signed an average of 13 while the George Bush, Clinton, and George W. Bush administrations signed an average of 21. The Obama administration mid-way through his first term had signed one signing statement addressing criminal justice policy (Oliver, Marion, & Hill, 2014).

The President of the United States has historically used executive orders to provide guidance and to establish policy. Presidential executive orders have been used for administrative reasons, civil service issues (Mayer, 2001), defense, and agency requests (Ragsdale, 1996). According to Oliver (2001), from President Eisenhower to President Clinton the use of executive orders to establish criminal justice policy was not their focus area. According to Oliver, the use of criminal justice executive orders is often symbolic with no effect on policy long term. Although symbolic it is essential to understand that the criminal justice executive orders issued by Presidents provide an overview of the executive's position regarding criminal justice policy.

The Federal executive branch develops and implements public policy regarding fire and explosions, and the policy is carried out by the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) and the Federal Bureau of Investigation (FBI) both within the Department of Justice (DOJ). ATF began with three detectives within the Internal Revenue Service (IRS) charged with the investigation of alcohol tax evaders and has expanded to the bureau that exists within the DOJ today (Bureau of Alcohol, Tobacco, Firearms, and Explosives, n.d.). ATF is the federal agency responsible for the administration and investigation of violations of the federal explosives and arson statutes (Bureau of Alcohol, Tobacco, Firearms, and Explosives, n.d.). The FBI began when the United States Attorney General, in need of investigators, established a group of special agents dedicated to conducting investigations for the DOJ. The direct role of the FBI in fires and explosions is limited to their authority to investigate crimes that often utilize fire in the commission of those crimes, including terrorism both domestic and international and those that meet the criteria to be Racketeer Influenced and Corrupt Organizations (RICO) crimes (United States Department of Justice, 2009).

The role of the Federal executive branch in the development and implementation of criminal justice policy and specifically in arson is one that provides training and assistance to state and local governments and that investigates violations of the Federal arson statutes and is accomplished financially through grant programs and with training opportunities at the National Fire Academy, FBI National Academy, and others.

The role of the Federal government is limited when it comes to the investigation of the crime of arson. During 2014 there were 9,394 persons arrested for the crime of

arson in the United States (FBI- crime in the United States, 2014) and according to Motivans (2017), 73 persons were arrested and charged with the Federal crime of arson in the United States during the fiscal year 2014.

The executive branch of the State of Florida is led by the Governor as outlined in the Florida State Constitution (FLA. Const. art IV § 1). The role of the Governor is like the role of the President when it comes to the operation of government. The governor is responsible for the implementation of legislative laws and the day to day operation of the government including the enforcement of the laws. In Florida, detectives employed by the State Fire Marshal's Office investigate the origin and cause of fires to determine if the fire was intentionally set. If the detectives determined the fire is intentionally set, they would work toward the arrest of the person or persons responsible for the fire. At the county or municipal level, firefighters, fire inspectors, sworn law enforcement officers, and crime scene technicians investigate the origin and cause of fires. These county and municipal officials may work independently or jointly in task forces or through other agreed upon arrangements (J.W. Cavanaugh, personal communications, September 8, 2015). A typical arrangement for a municipality is for the fire personnel to determine the origin and cause of the fire, and once they determine, the fire was intentionally set then the sworn law enforcement officer works to put the criminal case together for the arrest.

Charging and Decision making within the Judicial System

The judicial branch plays a role in policy making in all policy areas through their role as the interpreters of the law. Criminal justice decisions can take constitutionally protected rights away from those who are accused of committing a crime, and it is the

checks and balances of this review, over the legislative and executive, that results in the crafting of criminal justice policy. According to Grossman (2013), the legislative branch has the most significant role in criminal justice policy, but the judicial branch also has a role that is larger than in other policy areas.

Prosecutors are government actors that work within the executive branch but are also closely tied to the judicial branch. At the federal level, it is the United States attorneys, and at the state level in Florida, it is the States attorneys that are the executive branches representatives to the judicial branch, and they are responsible for the prosecution of crimes. According to Johnson (2014), the role of criminal prosecutors in the American criminal justice system is like none other. The prosecutor has the discretion to decide which cases to pursue, what charges to file, and if they will offer the defendant a plea bargain (Byungbae, Spohn, & Hedberg, 2015; Johnson, 2014). The prosecutor ultimately decides which cases are presented to the judiciary but once before the judicial branch the United States Constitution controls the process.

The role of the judicial branch is outlined in Article III of the United States Constitution and provides the judicial power to the Supreme Court and other courts designated by Congress. Before 1803, the power of the judicial branch was uncertain. In their decision in *Marbury v. Madison* (1803), the United States Supreme Court ruled that the Constitution was the supreme law of the United States, that it gave the courts the power of judicial review, and that Congress did not have the authority to pass legislation that conflicted with the Constitution. It is this power of judicial review of legislation for constitutional conflict that gives rise to landmark cases involving criminal justice in the

United States. The decisions of the judicial branch in criminal justice are many and include *Weeks v. United States* (1914) introducing the exclusionary rule that evidence obtained in violation of the Constitution cannot be used against the defendant; *Mapp v. Ohio* (1961) where evidence obtained in violation of the 4th Amendment cannot be used against the defendant; *Gideon v. Wainwright* (1963) guaranteeing the right to counsel; *Miranda v. Arizona* (1966) affording the right to remain silent; *Katz v. United States* (1967) the 4th Amendment applies to all places that an individual has an expectation of privacy; *Terry v Ohio* (1968) stop and frisk does not necessarily violate the Constitution; *Roper v. Simmons* (2005) deciding that the execution of a defendant that was under the age of 18 at the time the crime constitutes cruel and unusual punishment; *Arizona v. Gant* (2009) search incident to arrest doctrine does not apply to a vehicle when the suspect is no longer in the vehicle; and *United States v. Jones* (2012) finding that attaching a GPS monitor to a vehicle to track the vehicle's movements violates the 4th Amendment. These judicial findings changed criminal justice policy regarding the manner in which crime is detected and investigated. There are also specific judicial findings that have affected the field of fire investigation.

The role of a fire investigator during an arson trial is to offer into evidence their expert opinion testimony of where the fire started, the cause of the fire, and that the fire was intentional. In the United States, the requirements that need to be met to allow the expert to offer their opinion into evidence has evolved from the Frye standard, introduced by the District of Columbia Circuit Court in 1923 and the Daubert standard decided by the Supreme Court (*Daubert v. Dow Merrell Pharmaceuticals Inc.*, 1993). The Frye

standard requires that scientific evidence is accepted in the field while the Daubert standard provides a five-prong test to determine if the opinion is scientifically valid. Federal rule of evidence 702 requires the Daubert standard, so it is the standard that all Federal cases follow. At the state level, there are currently 39 states that follow the Daubert standard, nine that follow the Frye standard, and three that follow other standards (Morgenstern, 2017). Expert testimony, in Florida state courts, is subject to the Frye standard and as recent as February 2017, the Florida Supreme Court has declined to adopt Daubert and remains a Frye standard state (FLA. S.C., 2017).

Predictors of Conviction:

Time to Disposition

In the United States, the 6th Amendment to the United States Constitution guarantees a speedy trial, and in the federal courts, speedy trials are defined by the *Speedy Trial Act of 1974*. In Florida, a speedy trial is defined by the Florida Rule of Criminal Procedure Rule 3.191(a) and requires that an individual arrested for a felony offense must be brought to trial within 175 days of the arrest but allows for some of the same exceptions as found in Federal law (Florida Bar, 2017).

The efficiency of the criminal justice system can be measured by the time from the arrest or indictment until the disposition of the case by the court system. The *Speedy trial act of 1974* as amended, requires that the trying of federal cases occur within 70 days of arrest or indictment. The act has exceptions including pretrial motions, the availability of the defendant and or witnesses, other proceedings that the defendant are involved in, and co-defendant delays that allow for the delay of the trial. In cases where

the time requirement is not met, the court may dismiss the charges with or without prejudice depending on the reasons for the delay, the seriousness of the charge, and an analysis of whether the decision serves the intent of the act and the administration of justice (Offices of the United States Attorneys, 2017).

In the United States, the time from arrest to the sentencing of those convicted of a felony in state courts is longer than the 70 days allowed in the federal court system. In 2003 the median time between arrest and sentencing for those convicted of a felony in state courts was 153 days for all offenses and 142 days for property crimes (Maguire, & Pastore, 2003). In 2006 the median time between arrest and sentencing for those convicted of a felony in state courts was 265 days for all offenses and 237 days for property crimes (Rosenmerkel, Durose, & Farole Jr., 2010). The time from arrest to conviction in the state courts increased from 2003 to 2006, and it is unclear why the increase has occurred. In Bronx, New York 73% of felony cases in January 2013 had exceeded the State of New York's 180-day speedy trial requirement with 800 of those cases exceeding two years (Hamburg, 2015).

Counsel

Counsel & Judicial Outcomes

Society has not always guaranteed the absolute right to be represented by counsel during the criminal process. Before *Powell v. Alabama* (1932), the reservation of the right to counsel was for those who could afford to hire their representation (Williams, 2013). The Powell court found that the right to counsel, as required by the Sixth Amendment to the Constitution, required that all individuals accused of all crimes be entitled to counsel.

In their *Gideon v. Wainwright* (1963) decision the Supreme Court extended the constitutional right to counsel to the States via the Fourteenth Amendment. In the United States, the Federal government and state governments have developed different systems to provide the constitutionally required representation. These systems are either public defender's offices or counsel appointed by the court from an established list to represent the accused. (Hartley, Miller, & Spohn, 2010). The accused also can retain their counsel at their cost. These arrangements have resulted in mixed results.

The effectiveness of court-appointed counsel is discussed in the literature with contradictory results. Some studies found no difference in outcomes between a court-appointed and retained counsel (Hartley et al., 2010; Huang, Chen, & Lin, 2009). Williams (2013) found retained counsel to have better outcomes, and Cohen (2014) found no difference between private counsel and public defenders, but that appointed counsel had worse outcomes, and some studies found those with public defender counsel to have better outcomes (Anderson & Heaton, 2011). The differences in population and the type of system employed to provide counsel are both causes for the contradiction in the results.

Hartley et al. (2010) studied convicted felons in the City of Chicago and found there was not a significant difference in outcomes between court-appointed counsel and retained counsel. Cohen (2014) found that convicted felons in 40 of the nation's largest counties, with 60% represented by public defenders, 19% by assigned counsel, 20% by retained counsel, and 2% by pro se, had significantly worse court outcomes if represented

by assigned counsel versus public defenders. The court outcomes were similar for those represented by private counsel and public defenders.

While these findings are contradictory and not easily understood an examination of the role of the public defender in the courtroom silo offers some insight into the factors that may either positively or negatively affect the outcomes for their clients. As a member of the silo, the public defender seeks to go along and get along, not seeking to disturb the day to day operation of the court (Hartley et al., 2010). The public defender is also a government employee and often seen as an unskilled counselor which often results in the perception that the public defender is less than ideal to defend an accused criminal.

The effectiveness of counsel, whether retained, appointed, or public defender has been examined using the judicial outcome for the defendants. Other factors that could also be examined to determine counsel effectiveness; include the experience of the counsel or the amount of time allocated to each defense. Gitelman (1971) argued that the outcome for the defendant is more important than the analysis of the quality of the defense. The outcome is an objective marker measurable while experience and allocation of time are more subjective and less measurable.

The review revealed that no empirical research examines specific outcomes for those accused of arson as it relates to the type of counsel. The results of the study provided insight into the effect that the type of counsel has or may have on the trial outcome of those accused of arson.

Fact Witness

There are two types of witnesses, lay and expert, that may be called to testify at trial. Specific requirements in the Federal Rules of Evidence rule 702 prohibit lay witnesses from offering an opinion. The purpose of lay witness testimony is for both the prosecution and the defense to get into the trial record the facts and circumstances of the alleged offense.

The old English trial system relied upon the number of witnesses called to testify at trial as an indicator of guilt or innocence (Wigmore, 1901). In the United States, the number of witnesses does not determine the guilt or innocence of the accused. The number of witnesses called by the prosecution and by the defense can be used to view the criminal justice process. The smaller the number of witnesses that need to be called by the prosecution to obtain a finding of guilt would place the process on the crime control end of Packer's pendulum while the larger the number of witnesses called by the defense would place the process on the due process end of the pendulum.

Expert Witness**Evolution of Expert Witness Testimony**

The judicial branch relies on expert witness testimony to provide specific expertise in an area unfamiliar to the decider of fact. Once the judge or the jury hear the testimony, they rely on the opinion of the expert witness to decide the guilt or innocence of those accused of committing the crime. The judge serves as the gatekeeper of this testimony, and the criteria that the court uses to decide if the expert's testimony will be allowed has evolved since 1923.

The District of Columbia District Court established, through the *Frye standard*, the admissibility of an expert's opinion would only be allowed if the opinion was based upon generally accepted principles within the applicable field of study (*Frye v. United States*, 1923). The accepted principle relied on the field of study to determine what was accepted and what was not and according to Saks (2000), this strict requirement had been keeping reliable evidence out of the courtroom. It was not until 1976 when the dominance of the Frye standard began to falter.

The Federal Rules of Evidence, enacted by Congress in 1976 (United States House of Representatives, 2014), contain rule 702 that specifically addresses the admissibility of expert testimony. The rule as published required the expert to be qualified either through knowledge, skill, experience, training, or education but did not prohibit the decider of fact from using the Frye standard (Groscup, Penrod, Studebaker, Huss, & O'Neil, 2002). The rule changed the focus from the findings of the expert to the methodology used by the expert in developing their opinion.

At times, the courts add to or change established practices through their decisions. The Supreme Court decision in *Daubert v. Dow Merrill Pharmaceutical, Inc.* (1993) (*Daubert*) established that Federal Rule of Evidence 702 superseded the Frye standard. *Daubert* required the courts to evaluate the method used by the expert to formulate their opinion and not the conclusion drawn by the expert. *Daubert* nullified the general acceptance standard required by *Frye* and outlined, by rule 702 a four-prong test for the "gatekeeper" to apply when deciding the admissibility of the expert's testimony. The four-prong test required the judge or "gatekeeper" to determine if the expert opinion can

be or has been tested, or is falsifiable if the process or findings have been subjected to peer review, and if the known or potential error rate of the technique has been considered. The general acceptance standard from the Frye standard can be used but is not required. The next ten years saw court decisions further defining the *Daubert* ruling.

Expert Witness and Judicial Outcomes for all Offenders

For the government to properly prosecute a person accused of a crime or for the defense to defend the accused adequately, access to and the use of an expert witness is often necessary. *General Electric Company v. Joiner* (1997) (*Joiner*), *Michigan Millers Mutual Insurance Co. v. Benfield* (1998) (*Benfield*), *Kumho Tire Company v. Carmichael* (1999) (*Kumho*), and *Truck Insurance Exchange v. Magnetek Incorporated* (2004) (*Magnetek*) have further defined *Daubert* and the admissibility of expert testimony. *Joiner* established the level of review the court would apply to the appeal of a lower court's decision, *Benfield* directed the science requirement to fire investigation, *Kumho* applied Federal Rule of Evidence Rule 702 to all experts, not just scientists, and *Magnetek* applied Federal Rule of Evidence rule 702 to fire investigations.

Once made, an appeal to a higher court regarding the findings of a lower court, the appeals court must determine the criteria for the review of the decision. Before *Joiner* (1997), the criteria for the review were varied. In *Joiner*, the court decided the criteria for the review be that of abuse of discretion. The result of this decision was that upon appeal the higher court would review to see if the trial judge had abused his or her discretion in allowing the expert to testify and offer their opinion during the trial or if the expert were not allowed. The decision by the court to review through abuse of discretion lens is

significant because it provides the prosecution and the defense with a sense of the criteria the judge must use when deciding on the admissibility of an expert's opinion.

Once the courts determined the level of review, they then began to consider what is an expert and in which manner must their opinion be determined. An expansion of the definition of an expert occurred in *Kumho* (1999) when the court applied Rule 702 to all experts, not just scientists and in *Magnetek* (2004) when the court applied Rule 702 to fire investigation experts. The expansion of the definition of experts by the courts required all witnesses in a court proceeding that were offering an opinion to comply with the requirements of Rule 702, which differed from pre-Daubert.

The courts also were adding a science requirement to expert witnesses not previously viewed as scientists. In *Benfield* (1998), the court upheld the lower court's exclusion of the fire origin and cause investigator's opinion finding the opinion of the investigator was not founded in science. In the fire investigation field, this finding caused a migration to the National Fire Protection Association 921: Guide for Fire and Explosion Investigations (NFPA 921). The NFPA is a consensus code group that develops different standards and guides in the general area of fire protection. The fire investigation community did not wholly accept the first edition of NFPA 921 which was published in 1992 months before the *Daubert* (1993) decision. Since then NFPA 921 has evolved to become the standard of care and accepted method of conducting fire investigations in arson trials (*Fireman's Fund Ins. Co. v. Canon USA, Inc.*, 2005; *McCoy v. Whirlpool Corp.*, 2005; *Metropolitan Property & Casualty Co. v. Clayco Construction Group, LLC*, 2010; *Sarro v. Philip Morris USA, Inc.*, 2012). The result of these court decisions is the

fire investigation community has embraced NFPA 921 as the standard methodology for conducting a fire origin and cause investigation.

The International Association of Arson Investigators (IAAI) is an international organization representing both private and public fire investigators. The organization filed an amicus brief in the appeal to *Benfield* (1998) arguing fire investigation was “less scientific” than required by *Daubert* (1993) and as such not subject to the scientific method of inquiry. The result of *Benfield* was to hold fire investigation to a standard of scientific inquiry, and for a period the IAAI fought this.

The original edition of NFPA 921 was published in 1992 and has undergone revision every four years. The first two editions, 1992 and 1996, were not endorsed by the IAAI but the *Benfield* (1998) and *Kuhmo* (1999) decisions, applying the scientific method to fire investigation, resulted in the organization endorsing the 2000 edition. The organization has since embraced the evolution of NFPA 921 and has a member on the guide’s technical committee.

The evolution of expert testimony over the last 100 years began with the Frye standard that required the expert to be testifying to generally accepted scientific principles in the field and remains the standard of expert witness testimony in some states, including Florida. The Daubert decision in 1993 changed the way that the United States court system examined the admissibility of expert testimony and had expanded to most state courts since.

Expert Witness and Judicial Outcomes for Arsonists and Firesetters

Not having access to an expert witness for their defense during their arson trial is one of the hurdles that an arson defendant must overcome. Once retained an expert witness' opinion needs to be allowed into evidence for it to be useful to the defendant. The testimony is allowed into evidence by the judge once he or she has ruled on the admissibility of the expert's opinion. Dioso-Villa (2016) has found that the decision of the judge regarding the admissibility of an expert's origin and cause opinion can often depend on the party that the expert is representing.

In criminal trials, the prospect of being denied the constitutional guarantee of freedom is at risk. According to Dioso-Villa (2016), in criminal trials, the courts allowed the prosecution's expert's origin and cause opinions into evidence 95% of the time but restricted or excluded the defense's expert origin and cause opinions 100% of the time. The overwhelming finding is that the government's expert is allowed much more often than the defense's expert. The sample size used by Dioso-Villa for the criminal defense exclusion finding was small ($n= 1$).

In civil trials where the outcome is financial, and there are no constitutionally protected freedoms necessarily at risk, the party whose expert is more often allowed is the party that is defending themselves against the action. According to Dioso-Villa (2016), the plaintiffs in civil trials were successful in getting their expert testimony into evidence 39% of the time and excluded or restricted 61% of the time; the defense had their experts admitted 91% of the time and restricted or excluded 9% of the time.

The documented disparity between the allowance of expert witness testimony between criminal and civil arson defendants questions the fairness of the system. According to Dioso-Villa (2016), the admission of expert testimony in arson cases advantages the advantaged and disadvantages the disadvantaged. Although the ability to rebuke the prosecutor's expert witness is preferred, there are circumstances where it might not be necessary.

The ability to offer or to have access to an expert witness in their criminal defense is not always necessary for the accused arson defendant to get a fair trial. In Florida, the Florida Supreme Court found during their post-conviction review of an arson conviction that the defense attorney's decision not to use a fire origin and cause expert was not grounds to overturn the conviction based upon the convicted defendant's ineffective assistance of counsel claims (Abdool v. State of Florida, 2017). The defense counsel chose not to utilize the origin and cause expert because counsel did not want the jury to hear the specific details of the crime again, and the Florida Supreme Court found that the defense counsel's actions did not meet the burden necessary for the defendant to prove ineffective assistance of counsel (Abdool v. State of Florida, 2017).

Predictors of Conviction: Control Variables

Age

Age and Society

An examination of the general population in the United States revealed that the median age in 2010 was 37.2 which was an increase of 1.9 years from the median age of

35.3 in 2000 and an increase of 4.3 years since 1990 when the median age was 32.9 (Howden & Meyer, 2011).

Age and Judicial Outcomes for Non-Arson Offenders

It is vital to investigate the role that age may have to begin an understanding of how the criminal justice system outcome is affected by the accused's age. The concept that age affects the propensity of an individual to commit a crime is known as the age-crime curve, and it appears across criminology studies (Hirschi and Gottfredson, 1983; Shulman, Steinberg, & Piquero, 2013; Sweeten, Piquero, & Steinberg, 2013). The age-crime curve increases through the teenage years reaches a plateau in the late teens and then decreases as an individual gets older.

Some scholars have found that age is the only variable needed to explain criminal activity while others found there are other variables necessary to explain an individual's criminal behavior fully. Hirschi and Gottfredson (1983) found no other variable affects the propensity to commit crime except for the age of an individual. The individual's social status, education, race, and gender do not affect the age-crime curve (Hirschi and Gottfredson, 1983). Hirschi and Gottfredson found that the age of the individual fully explained criminal activity.

While the idea that the propensity to commit a crime is explained by the age of an individual, studies have also found that other variables play a role in criminal behavior. Fabio, Tu, Loeber, and Cohen (2011) found the disadvantage of the neighborhood caused adolescents to continue committing crime at an age older than the norm. Liu (2014) found when arrest was measured as an outcome that being female reduced the age-crime

curve. The evidence suggests strongly that the age of the offender, while an important variable to account for, does not fully explain the propensity of an individual to commit a crime.

The type of crime committed is affected by the age of the offender as well.

Hirschi and Gottfredson (1983) argued that the age of crimes against person's offender is older than an offender committing property crimes. Steffensmeier, Allan, Harer, and Streifel (1989) examined Uniform Crime Reporting (UCR) data and discovered the mean age of the offender was younger for both property crimes and crimes against persons from 1940 to 1980. The mean age of those arrested for property crimes was younger than those arrested for crimes against persons. The age of those committing crime has gotten younger since 1940, and the age of those committing property crimes is younger than those committing crimes against persons.

In 2003 the United States Department of Justice examined UCR data from 1993-2001 and discovered the average age of those arrested for property crimes was younger than those arrested for violent crimes. The United States Department of Justice using the same UCR data also determined the average age of those arrested for property crimes and violent crime increased from 1993 to 2001. In 1993 the average age of those who were arrested for crimes against property was 25.64 while in 2001 the average had increased to 26.61 (U.S. Department of Justice, 2003) and the mean age of those arrested for violent crime in 1993 was 28.02 and in 2001 was 29.64 (U.S. Department of Justice, 2003).

Age and Judicial Outcomes for Arsonists and Firesetters

The first modern understanding of fire setting behavior comes from a comprehensive review of fire setting conducted by Lewis and Yarnell (1951). Lewis and Yarnell discovered that the age of males arrested for fire setting behavior was generally around the age of 17 but that men would often engage in the behavior at “critical periods in their life” (p. 30). Since 1950, the age of those convicted of arson and those who self-reported fire setting has increased. Ducat, McEwan, and Ogloff (2013), Lindberg, Holi, Tani, and Virkkunen (2005), and Repo, Virkkunen, Rawlings, and Linnoila (1997) have found the mean age of those accused of fire setting currently to be in the 30s while earlier studies by Bourget and Bradford (1989), Harris and Rice (1984), and Rice and Harris (1991) in the 1980s and 1990s found the mean age was in the upper 20s.

Conviction data have been used to investigate the age of those convicted of arson. Ducat, Ogloff, and McEwan (2013) using Australian data from 2004-2009 found the mean age of those convicted of arson to be 30.5 and Ducat et al. (2013) using Australian data from 2000-2009 found the mean age of those convicted of arson to be 33.4. In Canada, Harris, and Rice (1984) found the mean age of convicted arsonists to be 28.9 and Rice and Harris (1991) found the mean age of convicted arsonists in Canada to be 28.7. The age of those convicted of arson in Canada is younger than those convicted of arson in Australia and demonstrates that the age of convicted arsonists has increased over time when comparing the two countries.

The age of convicted arsonists also follows the same upward trend in the United Kingdom. Soothill and Pope (1973) having investigated the arson cases of a cohort of 82

people over a 20 year period from the higher courts in England and Wales found the mean age of those convicted of arson in England and Wales in 1951 to be 29.7. Soothill, Ackerley, and Francis (2004) replicating the study conducted by Soothill and Pope using a population from all courts in England and Wales reported the mean age of fire setters in three periods; 1963-1965, 1980-1981, and 2000- 2001. The mean age of all fire setters in 1963-1965 was 18.59 with a mean age for males being 18.36 and females 24.17, in 1980-1981 the mean age for all was 20.59 with males being 20.18 and females 23.68, and in 2000-2001 the mean age for all was 23.89 with males 23.33 and females 27.29.

Devapriam, Raju, Singh, Collacott, and Bhaumik (2007) found the mean age to be 22 for males and 30 for females. Gannon et al. (2013) investigated imprisoned adult male fire setters and found the fire setters mean age to be 31.93. The findings in the United Kingdom reveal that the age of those convicted of arson has increased over time.

There have been other studies in Europe that have investigated the age of those convicted of arson. In Sweden, Labree, Nijman, Van Marle and Rassin (2010) found the mean age of fire setters sentenced to a maximum security forensic hospital to be 25.3. Anwar, Langstrom, Grann, and Fazel (2011) found the mean age of male fire setters to be 28.6 and females to be 31.2 using data from 1988- 2000. Enayati, Grann, Lubbe, and Fazel (2008) studied inpatient psychiatric patients from 1997-2001 and found the mean age of male fire setters to be 34.4 and of female fire setters to be 40.2. In Germany, Barnett, Richter, and Renneberg (1999) found the mean age of fire setters in the former West Germany from 1983-1985 in a population of convicted arsonists found not responsible, fully responsible, or partly responsible due to psychiatric reasons to be 32,

28, and 30 respectively. Barnett, Richter, Sigmund, and Spitzer (1997) found the mean age of convicted fire setters classified as either non-responsible, partly responsible, or completely responsible to be 34.9, 31.2, and 29.6 respectively. The mean age of those convicted of arson in Sweden is the lowest of those populations sampled. In Germany, the age of convicted fire setters is consistent with the mean age found in other European countries.

In the United States, the sources of data reported in the literature related to the characteristics of fire setters are limited. Blanco et al. (2009) and Vaughn et al. (2010) used data from the National Epidemiological Survey on Alcohol and Related Conditions (NESARC) conducted in 2001-2002. Ritchie and Huff (1999) conducted a study designed to examine the psychological status of those convicted of arson and confined in either the State of Maryland's forensic hospital or at the disciplinary military barracks at Ft. Leavenworth. Ritchie and Huff found the fire setter in their study to be a white male between the ages of 18 and 39 and not employed. Blanco et al. and Vaughn et al. analyzed data from the NESARC and found the self-reported fire setter to be a white male between the ages of 18 and 34, to have some college education or higher, and family income between 35,000 and 69,999. Blanco et al. and Vaughn et al.) do not contradict each other. They use the same data and most of the same ranges. The income reported by Vaughn et al. was restricted to the family income while Blanco et al. reported both personal and family income. Blanco et al. found the personal income of the self-reported fire setter to be less than 35,000.

There are limited studies that investigate those that self-report fire setting. In England, relying on self-reported data, Gannon and Barrowcliffe (2012) found the mean age of self-reported fire setters to be 27.3, and the NESARC in the United States found the most likely person to self-report fire setting behavior to be between the ages of 18 and 34. The limited research regarding those that self-report fire setting behavior makes any conclusion drawn to be questionable.

Race

Race and Society

In 2015 the population of the United States was estimated to be comprised of 77.1% White, not Hispanic, 13.3% Black or African-American, 17.6% Hispanic or Latino, and 5.6% Asian (U.S. Department of Commerce, 2015). Total arrests in 2014 comprised 27% Black, and African-American, and 18% Hispanic or Latino and in the same year the U.S. prison population was 36% Black or African-American and 22% Hispanic or Latino (Carson & Anderson, 2016). While the prison population statistics reflect the perceived severity of the crime committed by the individual and skews the prison population data over time, the annual arrests by race when compared to the general population indicates that the arrest of Blacks and African Americans and Hispanic/Latinos is at a higher rate than which they occur in the population. With these elevated introductions into the criminal justice system exploration of how, once in the system, the specific races fare is appropriate.

Race and Judicial Outcomes for Non-Arson Offenders

The percentage of Black and Hispanic/ Latino arrested in 2014 was higher than the percentage of the population in which they occur, and this is such a common occurrence that it results in accusations that the criminal justice system is biased. Once into the criminal justice system the role that race plays in the defendant's outcomes has been examined and reported in the literature. The results of these studies have been contradictory; some found that race did not affect outcomes (Beaver et al., 2013; Martin, 2013; Williams, 2013) and some found that race did affect the outcome for the individual. (Mitchell, Haw, Pfeifer, & Meissner, 2005; Pica, Pettalia & Pozzulo, 2017; Sommers, 2007; Sommers & Marotta, 2014).

In their studies, Beaver et al. (2013) and Williams (2013) found that race does not affect the criminal justice outcomes for individuals. Beaver et al. investigated the arrest rates by race for Black males and White males and found that Black males were significantly more likely to be arrested and incarcerated than White males, however, when accounted for in the analysis of race the control variables self-reported lifetime violence and IQ were found to not be significant in the analysis. Williams investigated the outcomes for defendants at the misdemeanor level, if the defendant was convicted, and if convicted, if they were sentenced to prison, and the length of their prison sentence based on the type of legal counsel they had and found that the defendant's race, either Black or Hispanic had no significant role in the outcome. Martin (2013) examined race and homicide convictions and found that race had no significant impact on the odds of conviction and Flexon (2011) found that racial bias in death penalty cases was not a

significant predictor of conviction. Based on their findings, Beaver et al., Martin, and Williams began to develop an understanding that criminal trial outcomes are not readily determined by the race of the defendant alone and that underlying circumstances or variables must also be investigated.

Scholars have investigated underlying circumstances that affect the trial outcomes with generally similar findings. Wooldredge (1998) argued that the lack of clear criminal case outcomes when race is accounted for is likely due to the different social settings of the research and the methods used to study the relationship. There have also been researchers that found that race does have a direct influence on the criminal justice system outcome for the defendant. Pica et al. (2017) investigated the role that developmental age, chronological age, and race influenced mock jurors resulting in the jury finding White males guilty more frequently than Black males. Sommers (2007) using experimental and archival data found that there was a relationship between race and jury trial verdicts. Mitchell et al. (2005) conducted a meta-analysis of 34 studies with over 7,000 participants from experimental and archival data and concluded that race had a small but significant role in jury decision making. Wooldredge found that Hispanic Americans were significantly less likely to have the charges reduced against them or if convicted for their sentences to result in incarceration more frequently than Whites. The findings of these studies indicate that the role of race in trial outcomes may not be clear and that there may be other variables that affect the trial outcome.

Race and Judicial Outcomes for Arsonists and Firesetters

The literature, as it relates to race does not provide a clear understanding of the role it plays in firesetting behavior. The available literature is from the NESARC self-report study conducted in 2001-2002 by the NIAAA, (Blanco et al., 2010; Hoertel Lestrat, Schuster, Limosin, 2011; Vaughn et al., 2010) and by a self-report study conducted by Heinrichs and Sam (2012) in Canada, and by research on convicted arsonists carried out by Ritchie and Huff (1999) in the United States and Devapriam et al. (2007) in the United Kingdom.

Researchers, using the NESARC data, found most of those who self-reported fire setting behavior to be White. Blanco et al. (2010) and Vaughn et al. (2010) found 80.5% of those who self-reported fire setting to be White. Hoertel et al. (2011) found of those males self-reporting fire setting 83.6% were White and White females self-reporting comprised 66% of all females. The discrepancies in the findings using the same data are explained because Blanco et al. and Vaughn et al. combine both male and female while Hoertel et al. break gender out in their analysis.

Other researchers have used convicted arsonists from the United States as the population for their studies. Lewis and Yarnell (1951) found the racial makeup of their population to mirror that of society. Ritchie and Huff (1999) found the percentage of White convicted arsonists to still be in the majority but to be lower than in the self-reported studies and that 54% to be White in a sample that included inpatient psychiatric patients, a review of FBI files, and inmate data from a military prison. The decrease in

the percentage of White fire setters in the sample may be due to the United States' well-documented bias in the criminal justice system toward minorities.

Researchers in Canada and the United Kingdom found the percentage of White fire setters is consistent with data from the United States. In Canada, Heinrichs and Sam (2012) found 82% of self-reported fire setters to be White, and in the United Kingdom, Devapriam et al. (2007) found the percentage of convicted arsonists who were White to be 80%. Thus, while most fire setters are White, other races also engage in firesetting behavior.

There are other races discussed in the literature regarding firesetting behavior. Blanco et al. (2010) found that those that self-reported fire setting behavior were 8.6% Black, 7.6% Hispanic, 2.2% Native American, and 1.5% Asian. Vaughn et al. (2010), reported 8.6% African-American, 7.28% Hispanic, and 3.66% Asian, Alaskan, and Indian/ Native American. Hoertel et al. (2011) reported of all males self-reporting fire setting behavior 5% were Black, 7.2% Hispanic, 2.5% American Indian/ Alaska Native, and 1.7% Asian/ Native Hawaiian, Pacific Islander. Of the females, self-reporting fire setting behavior 25.1% were Black, 7.7% Hispanic, 0.4% American Indian/ Alaskan Native, and 0.6% Asian/ Native Hawaiian, Pacific Islander.

Gender

Gender and Society

The number of males in the United States as a percentage of the total population continues to increase. According to Howden and Meyer (2011), the population of the United States in 2010 was 49.2% male and 50.8% female, and the population of the

United States in 2000 was 49.1% male and 50.9% female. This increase in the percentage of males in the population from 2000 to 2010 continues an increase in the percentage of males in the United States from 1990 to 2000. In 1990 the population of the United States was 47.5% male and 52.5% female (U.S.Department of Commerce, 1990).

Gender and Judicial Outcomes for Non-Arson Offenders

The percentage of males in the criminal justice system is larger than of those in the population. According to the Federal Bureau of Prisons (2017), the federal prison population was 93.3% male and 6.7% female in May 2017. According to Carson (2016), the male prison population in the United States in 2014 was 92.8% and in 2015 92.7%. In the United States, the majority of the population is female while the population of the United States prison system is overwhelmingly male.

Studies discussed the role of gender and the outcomes of offenders in the criminal justice system. Williams (2013) found that 79% of the defendants were male when he examined the effectiveness of public defenders in Florida and Martin (2013) found 95% of the defendants in homicide cases were male. In Australia Ducat, et al. (2013) found that 88.4% of those convicted of crimes other than arson were male and 11.6% were female. As a comparison, the percentages of males in the Australian population is like that of the United States at 49.5% (Australia Bureau of Statistics, 2014).

Gender and Judicial Outcomes for Arsonists and Firesetters

Both males and females participate in fire setting, but it is predominately a male activity, and over time the percentage of each gender has changed. Soothill and Pope (1973) found 95.9% of the fire setters to be male, Gannon and Barrowfield (2012)

reported 44.4% male fire setting, and both Gannon and Pina (2010) and Lewis and Yarnell (1951) suggest a ratio of 6:1. Empirically these changes have not been explained but could be a result of cultural differences or better data collection related to female fire setting. The percentages of male versus female fire setters are consistent throughout Europe, Australia, and North America.

The study of the demographics of male fire setters has occurred extensively, but those of female firesetters have not. Bourget and Bradford (1989) found the age of female fire setters to be 26.5 while Long et al. (2015) report the age of females to be 34.5 years of age. Devapriam et al. (2007) found the mean age of females convicted of arson to be 30. The research on female fire setters also demonstrates the increase in age seen in studies of male fire setters.

A significant discrepancy, when compared to other studies, appears in the Gannon and Barrowcliffe (2012) study. Gannon and Barrowcliffe (2012) used a sample size of 158 of which 109 were female, resulting in females accounting for 69% of the sample. Within the sample of 158 persons, 18 reported fire setting behavior with ten being female and eight being male (Gannon & Barrowcliffe, 2012). When accounting for the total sample, the males in the sample who report fire setter make up 16% of the total sample and reporting females make up 9%. The 9% of females self-reporting firesetting behavior is more in line with the research identifying a fire setting ratio of 6:1 (Lewis & Yarnell, 1951) than the ratio of 1:1 identified by Gannon and Barrowcliffe (2012). The reliability of the sample is, however, in question, because the recruitment of the participants occurred through forums and snowballing techniques.

Information related to the gender makeup of fire setters in Europe is from Swedish, Finish, German, and British studies. The percentage of males is as high as 94% (Hakkanen, Puolakka, and Santilla, 2004) to a low of 72% (Enayati et al., 2005). The changes are understandable when the populations sampled for the individual studies are investigated further. The highest percentage comes from a Finnish study.

In Finland, Hakkinen et al. (2004) sampled a group of convicted fire setters to determine if offender characteristics affected their crime scene actions. They found that when engaged in fire setting alone 90% were male, and 10% were female but if in a group the percentage of males rose to 94%. Other variables also affect the percentages of male versus female fire setting.

Criminal responsibility or more specifically the level of mental competency of the fire setter plays a role in the percentages of male and female fire setters. Barnett et al. (1997) found the percentage of females engaged in fire setting rose as the level of responsibility for the crime diminished. For an accused found to be entirely responsible 93% were male and 7% female, partially responsible 90% male and 10% female, and for those not responsible 80% were male while 20% were female. These findings indicate the underlying reasons for the activity lean toward some form of mental deficit females are more likely to engage in fire setting as an outlet.

The sample size can also play a role in the percentage of male versus female fire setters. Devapriam et al. (2007) discovered, outpatients, who suffered from intellectual disability and who were firesetters were at a one to one ratio The sample comes from a hospital in the United Kingdom with an established intellectual disability program, and

all the identified arsonists were known to the program and made up 1.36% of all patients. These results are similar to those found by Barnett et al. (1997) as the level of mental diminishment increases, so does the percentage of females.

A review of the long-term arson convictions in the United Kingdom provides insight into the changes gender plays in fire setting. Soothill and Pope (1973) reported in 1951 of the individuals charged with arson in the higher courts in England and Wales 96% were male. This percentage remained the same in 1963-1965 but decreased to 88% in 1980-1981 and 86% in 2000-2001 (Soothill, Ackerley, & Francis, 2004). The increased engagement in fire setting by females that is occurring in the United Kingdom is not understood.

In Sweden, the percentage of males and females convicted of arson seems to mirror those from other European countries. Anwar et al. (2011) found from 1988-2000 that of 1689 individuals convicted of arson in Sweden 80% of those convicted were male. A similar study by Enayati et al. (2008) found 72% percent of those convicted of arson and referred to a psychiatric hospital in Sweden from 1997-2001 to be male.

In North America, the percentage of male fire setters is consistent. Eighty-two percent of self-reported fire setters were male (Blanco et al., 2010, Vaughan et al., 2010) and in their study, Ritchie and Huff (1999) found that 83 % of those convicted of arson were male. Heinrichs and Sam (2012) found Canadian self-reported fire setters to be 65% male and 35% female. This consistency across populations indicates the reliability of the studies.

In Japan, serial fire setters are majority male. From 1982-2005, a total of 11,652 persons were charged with arson with 708 labeled as serial arsonists, defined as five or more arson charges (Wachi et al., 2007). Females comprised 12% of these serial arsonists (Wachi et al., 2007). The ratio of 9:1 male versus female serial fire setters is consistent with the non-serial fire setter ratios.

The National Epidemiologic Survey on Alcohol-Related Conditions (NESARC) offers the only published insight into self-reported fire-setting in the United States. According to Barrowcliffe and Gannon (2016), the NESARC was the first and only one of three studies to investigate the characteristics of fire setters, who had not been apprehended, in the United States. The other two studies, one by Gannon and Barrowcliffe (2012) and one by Barrowcliffe and Gannon (2015), investigated unapprehended fire setters in the United Kingdom.

In 2001-2002, the National Institute on Alcohol Abuse and Alcoholism (NIAAA) conducted the NESARC. The focus of the NESARC was to gain a better understanding of alcohol use disorders in the United States (Grant & Dawson, 2006). With the inclusion of a fire setting history question, the survey offered insight into fire-setting in the United States. The NESARC found that the ratio of males to females that self-report a history of fire setting to be consistent with the findings of international studies (Blanco et al., 2010; Ritchie & Huff, 1999; Vaughan et al., 2010).

Education

Education and Society

Using educational attainment data from the Census Bureau, Ryan and Siebens (2012) found in the United States the percentage of individuals with a high school education level by the age of twenty-nine was 89%, and in the southern United States 83.4% had obtained at least a high school education by the age of twenty-nine. According to Ryan and Siebens, the percentage of persons with a bachelor's degree or higher in 2009 was 28%. The rate of high school attainment increased slightly to the age of 64 (87.7%) and then drops to 76.5% for those over 65. The educational attainment was similar for males and females with 84.5 % of males and 85.9% of females with high school education and 28.4% males and 27.4% females having a bachelor's degree or more.

High school attainment by race was more troubling with 87.5% white, 90.4% non-Hispanic White, 81.4% Black, 85.3% Asian, and 60.9% Hispanic attaining a high school education. The percentages of bachelor's degree or higher by race was 29.3% White, 31.1 non-Hispanic White, 17.6% Black, 49.7% Asian, and 12.6% Hispanic (Ryan and Siebens, 2012).

Education and Judicial Outcomes for Non-Arson Offenders

An evaluation of the educational level, when compared to the general population, of general criminals, assists with an analysis of the role education may play in a person's propensity to commit a crime and the type of crime likely to be committed. In two self-report studies, one conducted in Canada 70% of those admitted to general criminal

behavior had at least a high school diploma (Heinrichs & Sam, 2012). Moreover, in the United Kingdom, 89.3% reported a high school level education (Gannon & Barrowcliffe, 2012). In the United States, 15.5% of those self-reporting criminal behaviors had less than high school education, 29.3% reported a high school education, and 55.1% reported some college or higher (Blanco et al., 2010, Vaughn et al., 2010). Hoertel et al. (2011) found male and females to have similar education levels. These findings seem to indicate those with higher education are willing to self-report criminal behavior, but it provides little understanding to determine if the education level of the individual affects the odds of being convicted of a crime.

In fire setting studies using incarcerated or institutionalized individuals as a control group, the level of education is varied. Rice and Harris (1991), in a Canadian study, found the education level of these individuals to be just above 8.57 years, in Australia the mean education level of those convicted of a crime other than arson was 10.3 years (Ducat et al., 2013), and in England, Gannon et al., (2013) found the mean education level to be 12.52 years. Rice and Harris used non-fire setters admitted to a maximum-security psychiatric institution, while Ducat et al. and Gannon et al. used incarcerated convicted non-fire setters. The different populations in these studies could explain the difference in the mean education of those studied.

Education and Judicial Outcomes for Arsonists and Firesetters

The evaluation of the role education may play on a person's propensity to commit a crime, in general, allows for an understanding of how education level influences criminal conduct. An evaluation of the influence that their education level may have on a

person's desire to engage in fire setting will provide a better understanding of its role in the decision to engage in firesetting behavior. The education level of those accused of or who self-report fire setting is higher than those who commit other crimes but differs from country to country. In Australia and Canada, the education level does not make a difference in an individual's propensity to engage in fire setting versus to commit other crime. In Australia, the difference in education levels of convicted arsonists was insignificant, convicted arsonists had 9.92 years of education and those who had committed other crimes 10.3 years of education (Ducat et al., 2013) and in Canada 8.57 years for convicted arsonists and 8.71 years for convicted non-arsonists (Rice and Harris, 1991). The findings are for those convicted by the courts of either arson or other non-fire related crimes.

There is information regarding education level and fire setting available in the literature. In Canada, Bourget and Bradford (1989) found in a study of pretrial forensic examinations for females; 26.7% had less than an 8th-grade education, 26.7% had an 8th-grade level, 13.3% had completed 9th grade, 33.3% had either completed 10th or 11th grade. In their same study, Bourget and Bradford discovered the education of males to be; 23.4% had less than an 8th grade level, 16.9% had an 8th grade level, 19.5% had a 9th grade level, 23.4 had either 10th or 11th grade, 13% had completed 12th grade, and 6.5% were college graduates.

In Europe, the investigation of the education level of fire setters has differing results depending on the population sampled. In Finland, of males with an arson conviction, 62.5% had an elementary school education, 33.3% had a high school

diploma, 3.9% had an undergraduate degree, and 0.2% had a graduate degree (Anwar et al., 2009). For those with no fire setting history, 38.5% had only an elementary school education, 41.7% had a high school diploma, 18.8% had an undergraduate degree, and 1% had a graduate degree (Anwar et al., 2009). In Finland, those convicted of arson have a lower education level than those in the general population and were more likely to be diagnosed with schizophrenia (Anwar et al., 2009).

For those females convicted of arson, 61.7% had an elementary school education, 34.4% had a high school diploma, and 3.8% had an undergraduate degree (Anwar et al., 2009). For females from the general prison population, 41.1% had only an elementary education, 39.3% had a high school diploma, 19.3% had an undergraduate degree, and 0.3% had a graduate degree (Anwar et al., 2009). These results are similar to the percentages reported for males in the same study for the general prison population and those convicted of arson.

In the United Kingdom, the literature discusses the education level of those convicted of arson and self-reported fire setters. Gannon et al., (2013) report the mean education level of convicted arsonists to be 12.15 years and the education level of those convicted of crimes other than arson to be 12.52 years. Gannon and Barrowcliffe (2012) in a self-report study found 100% of those admitting to firesetting to have a high school diploma while 89.3% of non-fire setters reported having a high school diploma. These are consistent with each other and education level appears not to affect fire setting activity and the conviction rate of those accused of fire setting by the court.

The self-report information available in the United States paints a very different picture. According to Blanco et al. (2010), and by Vaughn et al. (2010), the education level of those self-reporting fire setting behavior is higher than those found in Europe, Canada, and Australia. Those without a high school diploma represented 12.9%, high school graduates 27.4% and some college 59.7% of self-reporting fire setters (Blanco et al., 2010, Vaughn et al., 2010). Self-reporting non-fire setters comprised 15.5% without a high school diploma, 29.3% with a high school diploma, and 55.1% with some college. When further defined by gender, the data used by Blanco et al. (2010) and Vaughn et al., (2010) by a gender variable, the education level remains consistent for fire setters and non-fire setters. Hoertel et al. (2011) found similar education levels.

Demographic characteristics can be used to identify the different traits of criminals and non-criminals. According to Roberts, Zgoba, and Shahidullah (2007), in homicide research the use of age, gender, and race are common. There have been studies that seek to identify common characteristics involved with a specific offense (Canter & Fritzon, 1998; Farrington & Lambert, 2007). Farrington and Lambert analyzed the relationship between characteristics and the crime using pairwise statistical relationships while Canter and Fritzon identified age as one variable that could be used to establish the relationship between the characteristics of the offender and the crime.

Criminal Case Outcomes: Dependent Variable

Conviction

The dependent variable in quasi-experimental studies is the outcome of the study. In my study, the criminal trial outcome of those accused of arson was the dependent

variable and was categorized as in Florida statute. Howard, Lazarus, and Glas (2015) utilized conviction as their dependent variable while examining the effect of the Sentencing Reform Act of 1984 and Martin (2013) investigating the odds of being convicted based upon the race of the defendant utilized conviction.

Gap in the Literature

The available literature regarding the effect that the relationship between and among access to expert witnesses, counsel type, time to disposition, the use of a fact witnesses by the prosecution and by the defense, age, race, gender, and education level, has on criminal trial outcomes had been reviewed and revealed that each of these independent variables and its connection to the dependent variable, criminal trial outcome, had been studied. These studies had not specifically investigated the effect of and the relationships between and among these independent variables on arson trial outcomes and is worthy of investigation.

Summary

I organized the literature review to identify the development of the criminal justice system in the United States through a general history of the criminal justice system from the colonial period through to the modern era. This examination revealed that the criminal justice system has evolved from a system that relied on the community to exact justice to the modern system that exists today. The role of the three branches of government, legislative, executive, and judicial were then examined to outline the role each branch plays in the development, implementation, and interpretation of criminal justice policy in the United States. This was accomplished through an examination of the

laws that Congress and the State of Florida have enacted regarding the crime of arson, the ways in which the executive branch chooses to bring criminal justice policy to the attention of stakeholders and implements that policy, and the significant role that the judicial branch has played in the direction that criminal justice policy has gone in the last 250 years.

I then examined the crime control factors, time to the disposition and various prosecution witnesses. The due process factor variable, access to an expert witness, to establish the criteria necessary to have their testimony admitted into evidence at trial and to find the role that it may play in trial outcomes. The remaining due process factor variables, counsel type, and fact witnesses also were examined to investigate the role that each play in criminal trial outcomes. The remaining independent variables, age, race, gender, and education level were examined to understand better their role in society in general, the role that they play for those accused of a crime in general, and specifically for those accused of arson. The dependent variable, trial outcome, was also examined.

Packer's two models of the criminal process is the theoretical framework that the study is grounded upon. Packer (1964) argued that the criminal justice system exists somewhere on a scale and swings like a pendulum with crime control on one end and due process on the other. The investigation of the history of the criminal justice system, the role of the three branches of government, and specific judicial decisions established that the pendulum does in fact move, sometimes focused on controlling crime and at others as it appears to be currently focused, and moving toward since the 1960s, due process for the defendant.

The use of quasi-experimental quantitative studies using demographic characteristics in criminal justice research was apparent throughout the literature review. Roberts et al. (2007) stated that the use of age, gender, and race were common in homicide research and there have been studies that sought to identify specific characteristics involved with specific offenses (Canter & Fritzon, 1998, Farrington & Lambert, 2007). Farrington and Lambert used pairwise statistical relationships to analyze relationships between characteristics. Chapter 3 details the study and provides further justification for the chosen methodology.

Chapter 3: Research Method

Introduction

The purpose of this study was to conduct a quantitative, quasi-experimental examination of arson trial outcomes using archival data. According to Hunt (2015), using archival data is one of the two predominant methods used to research the effects that race has on judicial outcomes. Hunt also noted that the use of archival data had been used to study capital cases but less so for noncapital cases. Quantitative research is consistent with understanding relationships between variables, and in this study, I examined the relationship between criminal arson trial outcomes and the time to trial, number of prosecution fact witnesses and expert witnesses, the type of legal representation afforded to the defendant, the number of defense witnesses and the accused's access to a fire origin and cause expert, their age, race, gender, and education level to determine if the difference between the groups was significant. I also investigated whether there were relationships between or among these variables that enable a better understanding of how they may have affected the trial outcome. Through the use of ordinal logistic regression, the significance of the relationships between the predictors were analyzed, and the results were viewed through Packer's (1964) two models of the criminal process to make a determination regarding the current posture of the criminal justice system in the West Central counties of Florida with arson defendants as the population.

Research Question and Hypothesis

The following research questions and hypotheses were developed to understand the relationship between social justice, crime control variables, due process variables, and various control variables.

RQ1: What effect does time to trial; number of prosecution witnesses; the number of prosecution experts; and the control variables age, race, gender, and education have on the criminal case outcome for those accused of arson in the West Central counties of the state of Florida from 2011-2015?

H_{1a} : The time to trial does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{0a} : The time to trial does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{1b} : The number of prosecution witnesses does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{0b} : The number of prosecution witnesses does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{1c} : The number of prosecution experts does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

*H*_{01c}: The number of prosecution experts does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

RQ2: What effect does the type of defense counsel; number of defense witnesses; access to a fire origin and cause expert; and the control variables age, race, gender, and education have on the criminal case outcome for those accused of arson in the West Central counties of the state of Florida from 2011-2015?

*H*_{12a}: The type of defense counsel does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

*H*_{02a}: The type of defense counsel does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

*H*_{12b}: The number of defense witnesses does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

*H*_{02b}: The number of defense witnesses does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

*H*_{12c}: Access to a fire origin and cause expert does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{02c} : Access to a fire origin and cause expert does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

Population

The population for the study was criminal arson defendants in the West Central counties of the state of Florida, consisting of the fifth, sixth, 12th, and 13th circuits from 2011-2015 whose case resulted in a judicial finding of guilty or not guilty. The estimated population size was 400.

The analysis plan called for the use of ordinal regression analysis with 21 predictor variables. Estimating a moderate effect size of .15, a beta of .05 G*Power, a tool to compute statistical power analysis, was used to calculate the sample size required for the logistic regression to be 160 for the study to be moderately powered (80%). The chosen effect size, beta, and power level are standard for quasi-experimental studies.

Description of Sample

The archival data used included conviction data and case files held either electronically or in hard copy by the circuit court in each of the counties. The court files were the official recording of the proceedings against each defendant, making them the most reliable source of this information. The sampling of the population occurred after it was identified using an online search tool available for all the county circuit courts. The online search tool makes publicly available the docket number, the name of the defendant, charge, and trial outcome. Although the defendant's name was publicly available, it was not retained, and the initial collection of data included the docket

number, the criminal charge, and the case outcome. Documentation was accomplished by entering into Microsoft Excel the information from the cases ($n=400$) with arson charges. Microsoft Excel was then used to assign a number to each of the 400 cases randomly. The first 320 cases were examined, in the random order arranged by Microsoft Excel, and data collected. Of the 320 cases examined, only 165 had an outcome of either guilty or not guilty. There was no judicial finding of guilty or not guilty in the other 155 cases from the first 320 because either the court or the prosecutor dropped the charges against the defendant.

Data Collection

Once the sample was identified, the data for most of the sample were collected through electronic means; in a limited number of the cases, it was necessary to travel to the circuit court, identified by docket number, to examine the paper court record. The data collected were limited to that which were necessary to conduct the study. The study alignment, outlined in Table 1, includes the data collection tool, the variables that were collected, the data source, and the data analysis plan.

Table 1
Study Alignment Table

Research Question	Data Collection Tools	Data points Yielded	Data Source	Data Analysis
RQ 1: What effect do time to trial, number of prosecution witnesses, the number of prosecution experts, and the control variables age, race, gender, and education have on the criminal case outcome for those accused of arson in the West Central counties of the state of Florida from 2011-2015	Data collection sheet (Appendix A)	Outcome, time to trial, number of prosecution witnesses, number of prosecution experts, age, race, gender, and education level	Court records from the 5 th , 6 th , 12 th , and 13 th Florida Circuit Courts	Descriptive statistics were used to determine the values of correlation between the independent variables and the dependent variable of trial outcomes. Ordinal regression was used to determine the dependent variable of trial outcomes using the independent variables <i>time to trial, number of prosecution witnesses, the number of prosecution experts, and the control variables age, race, gender, and education.</i>
RQ 2: What effect do the type of defense counsel, number of defense witnesses, access to a fire origin and cause expert, and the control variables age, race, gender, and education have on the criminal case outcome for those accused of arson in the West Central counties of the state of Florida from 2011-2015?	Data collection sheet (Appendix A)	Outcome, counsel type, number of defense witnesses, access to fire origin and cause expert, age, race, gender, and education level	Court records from the 5 th , 6 th , 12 th , and 13 th Florida Circuit Courts	Descriptive statistics were used to determine the values of correlation between the independent variables and the dependent variable of trial outcomes. Ordinal regression was used to determine the dependent variable of trial outcomes using the independent variables <i>type of defense counsel, number of defense witnesses, access to a fire origin and cause expert, and the control variables age, race, gender, and education.</i>

The examination of the court records allowed for the identification and documentation for each of the independent and dependent variables. The data were collected using a data collection sheet (Appendix A). Once collected, the information was then inputted into an Excel spreadsheet and then imported into *The Statistical Package for the Social Sciences* (SPSS) version 24 and STATA IC15 for analysis. The data collection sheets, Excel file, SPSS file, and STATA results will be retained for 5 years as required by Walden University policy and then will be destroyed or deleted.

Analysis Plan

Using SPSS v. 24 for the descriptive statistics, and STATA IC15 to conduct the statistical modeling, I created the analysis plan to detail the descriptive statistics and then to use ordinal logistic regression to model the data. Once modeled, the results were analyzed to determine if there were any significant independent variables and to estimate the magnitude of the effect of the variables in the study. The descriptive statistics for each variable were analyzed to determine if there were any outliers or missing data that unnecessarily skewed the results.

The first research question was analyzed using ordinal regression to estimate the effect of each variable on the outcome. The dependent variable or outcome was the trial outcome, and the independent variables (predictors) were time to trial; the number of prosecution witnesses; the number of prosecution experts; and the control variables age, race, gender, and education. The use of ordinal regression allowed the effect between the outcome variable and the predictor variables to be estimated. When analyzing the relationship between the outcome variable and the predictor variables, an odds ratio

greater than 1 indicates a positive relationship while an odds ratio less than 1 indicates a negative relationship. Regression coefficients and their significance values also were examined to determine if the relationships among the independent and dependent variables were significant. Pseudo R^2 , which is a measure of the strength of the relationship between independent variables and the dependent variable, also was examined.

The second research question was analyzed using ordinal regression to estimate the effect of each variable on the outcome of the study. The dependent variable or outcome was the trial outcome, and the independent variables (predictors) were the type of defense counsel; number of defense witnesses; access to a fire origin and cause expert; and the control variables age, race, gender, and education. The use of ordinal regression allowed the effect of the predictor variables on the outcome variable to be estimated. When analyzing the relationship between the outcome variable and the predictor variables, an odds ratio greater than 1 indicates a positive relationship while an odds ratio less than 1 indicates a negative relationship. Regression coefficients and their significance values also were examined to determine if the relationships between the independent and dependent variables are significant. Pseudo R^2 , which is a measure of the strength of the relationship between independent variables and the dependent variable, also was examined.

Variables

The collected variables were the outcome; time from arrest or indictment until the trial; the number of prosecution witnesses both fact and expert; type of defense legal

counsel; number of defense fact witnesses; defendant origin and cause expert access; and the age, race, gender, and education level of the defendant.

Independent Variables

For the study, time from arrest or indictment until the trial, the number of prosecution witnesses both fact and expert; type of defense legal counsel; number of defense fact witnesses; defendant origin and cause expert access; and the age, race, gender, and education level of the defendant were the independent variables. The time to trial was captured using four dummy variables. Dummy Variable 1 was coded 0 for less than 6 months and 1 for other, Dummy Variable 2 was coded 0 for 6 to 12 months, and 1 for other, Dummy Variable 3 was coded 0 for 12 to 18 months, and Dummy Variable 4 was coded 0 for 18 to 24 months. When creating dummy variables, one of the groups is left out to eliminate redundancy and is referred to as the reference group (Cohen, Cohen, West, & Aiken, 2015). The reference category for the time to trial was the group greater than 24 months. The number of prosecution fact and expert witnesses and the number of prosecution experts were continuous variables. Type of legal counsel was captured using dummy variables. Dummy Variable 1 was coded 0" private and 1 for other and Dummy Variable 2 was coded 0 for none and 1 for other. The reference group for the type of legal counsel was the group public. The number of defense fact witnesses was a continuous variable. Access to an origin and cause expert for both the prosecution and the defense was captured using dummy variables. The first dummy variable was coded 0 for an expert with no certification and 1 for other, and the second dummy variable was coded 0 for none and 1 for other. The reference group for access to origin and cause expert was

the group expert with certification. The age of the offender was captured as a continuous variable with the age of the offender, at the time of the offense, entered as the value. The race of the offender was captured using categorical dummy variables with White as the reference group. Dummy Race Variable 1 was coded 0 for Black and 1 for other. Dummy Race Variable 2 was coded 0 for American Indian and 1 for other. Dummy Race Variable 3 was coded 0 for Asian and 0 for other, and Dummy Race Variable 4 was coded 0 for Hispanic and 1 for other. The gender of the offender was captured using a categorical variable and was coded 0 for male and 1 for female. The education level of the offender was captured using an ordinal variable and was coded 0 < *high school*, 1 *high school graduate*, 2 *some college*, 3 *college graduate*, and 4 *graduate degree*.

Dependent Variable

The dependent variable was the outcome of the court proceeding when the court determined a finding of guilt or no guilt. A defendant who entered a plea of no contest was considered to have been adjudicated guilty for this study. The dependent variable was ordinal and was coded 0: *not guilty*, 1: *convicted misdemeanor*, 3: *convicted felony third degree* 4: *convicted, felony second degree*, 5: *convicted, felony first degree*. Table 2 provides the coding of the variables for statistical analysis purposes.

Table 2
Study Variables

Outcome	0: Not Guilty 1: Guilty misdemeanor 2: Guilty felony B 3: Guilty felony A
Time 1	0: < 6 months 1: Other
Time 2	0: 6 to 12 months 1: Other
Time 3	0: 12 to 18 months 1: Other
Time 4	0: 18 to 24 months 1: Other
# Prosecution witnesses	
Prosecution expert 1	0: Pros expert no certification 1: Other
Prosecution expert 2	0: None 1: Other
Defense expert 1	0: Expert no certification 1: Other
Defense expert 2	0: None 1: Other
Type of legal counsel 1	0: Private 1: Other
Type of legal counsel 2	0: None 1: Other
# Defense witnesses	
Age	
Race 1	0: African American/ Black 1: Other
Race 2	0: American Indian 1: Other
Race 3	0: Asian 1: Other
Race 4	0: Hispanic 1: Other
Gender	0: Male 1: Female
Education 1	0: < HS grad 1: Other
Education 2	0: HS Grad 1: Other
Education 3	0: Some college 1: Other
Education 4	0: College Grad 1: Other

Threats to Validity

The study design presents threats to validity. I designed the study to investigate age, race, and gender which are social conditions that an individual does not have control over. If a correlation exists between these independent variables, a threat to the internal validity occurs because the cause and effect relationship between them is beyond the control of the individual. A threat to external validity is the inclusion of access to an origin and cause expert witness as an independent variable. While expert witnesses are used in other criminal trials, the specific nature of origin and cause experts may not be generalizable to other criminal trials and may cause a threat to external validity. The use of court records, believed to be accurate, is a threat to validity if the information recorded is inaccurate or incomplete. It is assumed that the information provided in the court record is accurate.

This study focused on those charged with arson in the West Central counties of Florida from 2011- 2015. For other criminal defendant populations that generally require the use of an expert witness (i.e., blood spatter, DNA analysis, fingerprint analysis, and firearm analysis) the findings of this study may be generalizable.

Ethical Concerns

The data collection occurred after the Walden University institutional review board (IRB) reviewed and approved the protocol for the study on November 1, 2017 (IRB # 11-01-17-0352372). The purpose of the IRB review was to assure compliance with federal regulations and Walden University's research policies.

No consent was necessary from the defendants because I used archival data. The docket number, the name of the defendant, and trial outcome were publicly available for all the circuit courts involved in the study, minimizing the privacy concerns of the defendants. The names of the defendants were not collected as they were not needed for the study.

Summary

I used a quantitative quasi-experimental study design which used archival court records obtained from the 5th, 6th, 12th and 13th Florida circuit courts covering the years 2011-2015 to obtain the random sample. The risk to the confidentiality of the participants was minimized because their names are currently available on a public internet search of court records.

The design methodology for the study, was chosen to determine if there are a correlation and relationships between or among the independent variables, time from arrest or indictment until the trial, the number of prosecution witnesses both fact and expert, type of defense legal counsel, number of defense fact witnesses, defendant origin and cause expert access, and the age, race, gender, and education level of the defendant.

Chapter 4: Results

Introduction

The purpose of this quantitative study was to understand the location of criminal arson defendants on a pendulum with crime control on one side and due process on the other by investigating the relationships between arson trial outcomes and the identified predictor variables and the control variables. The research questions that provided the guidance for this study were as follows:

RQ1: What effect does time to trial; number of prosecution witnesses; the number of prosecution experts; and the control variables age, race, gender, and education have on the criminal case outcome for those accused of arson in the West Central counties of the state of Florida from 2011-2015?

RQ2: What effect does the type of defense counsel; number of defense witnesses; access to a fire origin and cause expert; and the control variables age, race, gender, and education have on the criminal case outcome for those accused of arson in the West Central counties of the state of Florida from 2011-2015?

In this chapter, I detail the characteristics of the sample and then discuss the use of ordinal logistic regression, the problems encountered, the methods used to overcome those problems, and the results of the analysis.

Characteristics of Sample

The sample was obtained from the population of those charged with the crime of arson in the West Central counties of Florida which comprise the fifth, sixth, 12th, and 13th court circuits, and resulted in a random sample of 165 cases that had a final

determination of guilt by the court. Table 3 shows the distribution of the sample by gender. The sample was 86.7% ($n=143$) male and 13.3% ($n=22$) female.

Table 3
Frequency of Gender (n=165)

	Frequency	Percent
Gender		
Male	143	86.7
Female	22	13.3

Table 4 shows the distribution of race with the majority, 72.1%, White ($n=119$), followed by Black, 18.8%, ($n=31$), and Hispanic, 7%, ($n=12$); Asian and Pacific Islander represented 0.6%, ($n=2$).

Table 4
Frequency of Race (n=165)

	Frequency	Percent
White	119	72.1
African American/ Black	31	18.8
Hispanic	12	7
Asian	1	0.6
Pacific Islander	1	0.6

Table 5 shows the distribution of the educational levels of the sample. The percentage of the sample with less than a high school diploma was 17% ($n=28$), those with a high school diploma or GED was 13.3% ($n=22$), some college was 3.6% ($n=6$), and a college degree was 0.6% ($n=1$). The education level for 65.5% of the sample ($n=108$) was unknown because it was not present in the court records.

Table 5
Frequency of Education Levels (n=165)

	Frequency	Percent
No High School Diploma	28	17
High School Diploma/ GED	22	13.3
Some College	6	3.6
College Degree	1	0.6
Unknown	108	65.5

Frequency distributions and kernel density curves (Fox & Long, 1990) of the demographic variables and the predictor variables were examined before more intensive analysis. The Kernel density plots for education and for time to finding are in Figure 1 and Figure 2 respectively. The Kernel density plot for the education variable displays extreme skewness to the right. The Kernel density plot for time to finding shows that most of the completed cases (90%) occurred within 18 months and one-third of the cases in fewer than 6 months.

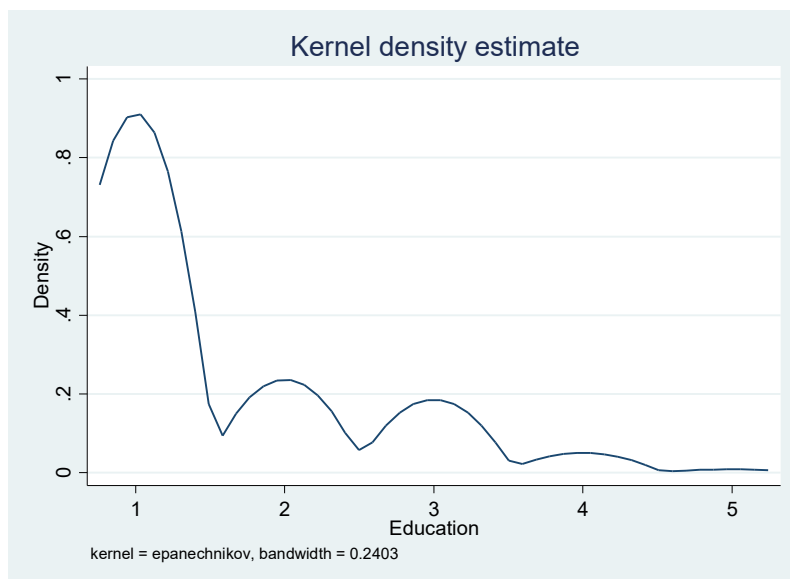


Figure 1. *Education kernel density estimate.*

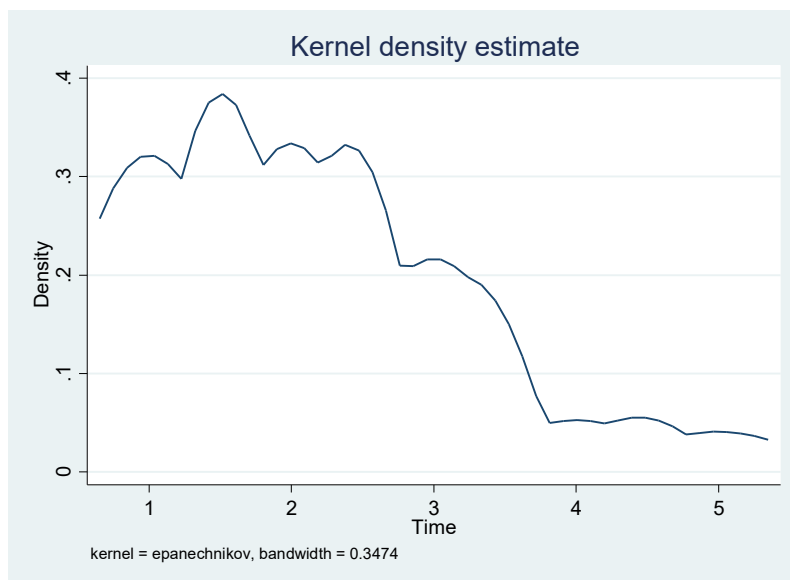


Figure 2. *Time kernel density estimate.*

The mean age of the sample was 35.52 years with a standard deviation of 14.33.

The age of the sample ranged from a low of 17 to a high of 70, see Table 6.

Table 6
Demographic Characteristics of Age (n=165)

	Statistic
Mean	35.52
Std. Deviation	14.33
Range	53
Minimum	17
Maximum	70

Most of the sample, 92.7%, ($n=153$), was represented by a court-appointed public defender with 6.7% ($n=11$) represented by private counsel and 0.6% ($n=1$) with no representation, see Table 7.

Table 7
Characteristics of Counsel Type (n=165)

	Frequency	Percent
Counsel Type		
Public Defender/ Appointed	153	92.7
Private Counsel	11	6.7
No Counsel	1	0.6

The defense did not use a fire origin and cause expert in 99.4% ($n=164$) of the cases with the remaining 0.6% ($n=1$) cases using a certified fire origin and cause expert, see Table 8. The prosecution used a noncertified fire origin and cause expert in 2.4% ($n=4$) of the cases, a certified origin and cause expert in 3.6% ($n=6$) of the cases, and no origin and cause experts in 94% ($n=155$) of the cases, see Table 9.

Table 8
Characteristics of Defense Origin & Cause Expert (n=165)

	Frequency	Percent
Certified origin & cause expert	1	0.6
Origin & cause expert no certification	0	0.0
No origin & cause expert	164	99.4

Table 9
Characteristics of Prosecution Origin & Cause Expert (n=165)

	Frequency	Percent
Certified origin & cause expert	6	3.6
Origin & cause expert no certification	4	2.4
No origin & cause expert	155	94.0

The time from arrest until the court outcome was fewer than 6 months in 33.3% ($n=55$) of the cases, 6 to 12 months in 34.5% ($n=57$) of the cases, 12 to 18 months in

22.4% ($n=37$) of the cases, 18 to 24 months in 5.5% ($n=9$) of the cases, and 4.2% ($n=7$)

of the cases took longer than 24 months, see Table 10.

Table 10
Characteristics of Time from Arrest to Outcome (n=165)

	Frequency	Percent
Less than 6 months	55	33.3
6 to 12 months	57	34.5
12 to 18 months	37	22.4
18 to 24 months	9	5.5
Greater than 24 Months	7	4.2

The defense used fact witnesses in six cases with one fact witness in four cases and two fact witnesses in remaining two cases, see Table 11. The prosecution used fact witnesses in 14 cases ranging from one to 30 witnesses per case, see Table 12.

Table 11
Defense Fact Witnesses (n=165)

Mean	0.05
Std. Deviation	0.266
Range	2
Minimum	0
Maximum	2

Table 12
Prosecution Fact Witnesses (n=165)

Mean	.93
Std. Deviation	3.622
Range	30
Minimum	0
Maximum	30

Table 13 outlines the frequency of the outcome with 35.2% ($n=58$) found guilty of a first degree felony, 45.5% ($n=75$) found guilty of a second degree felony, 6.7% ($n=11$) found guilty of a third degree felony, 4.2% ($n=7$) found guilty of a misdemeanor, and 8.5% ($n=14$) found not guilty.

Table 13
Frequency of Judicial Finding (n=165)

	Frequency	Percent
First degree felony	58	35.2
Second degree felony	75	45.5
Third degree felony	11	6.7
Misdemeanor	7	4.2
Not guilty	14	8.5

Figure 3 is the Kernel density estimate for the outcome variable and visually represents the information presented in Table 13.

Once the frequencies and kernel density estimates were examined, ordinal logistic regression was used to examine the relationships between and among the independent and dependent variables.

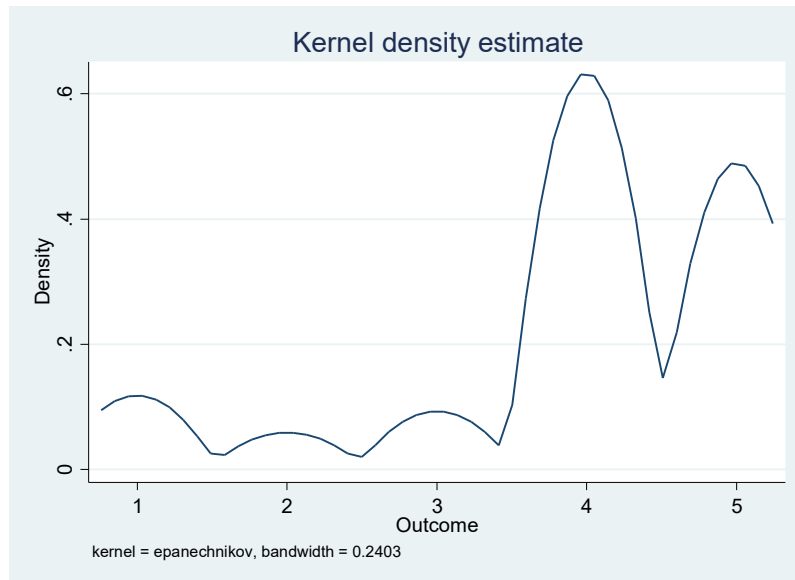


Figure 3. *Outcome kernel density estimate.*

Ordinal Logistic Regression

Ordinal logistic regression is used to examine relationships between and among independent and dependent variables and indicates the strength of these relationships. By providing the strength of the relationship, logistic regression, removes the concern regarding confounding effects. The use of ordinal logistic regression requires that the dependent variable be ordinal, in that there are more than two levels and that there is an order to the levels of the variable. A discussion of the four assumptions for ordinal logistic regression will occur next.

Assumptions

The four assumptions that are required to be met for ordinal logistic regression are the dependent variable is ordinal, one or more of the independent variables are continuous or categorical, there should be no multicollinearity, and there should be

proportional odds. The dependent variable in the study was ordinal, it had five levels, and there was an order to the levels and results in meeting the first necessary assumption. The second assumption is that the independent variables are continuous or categorical. In the study, the independent variables were either continuous or categorical resulting in the second assumption being met as well. The first two assumptions were met, and the assumption of multicollinearity will be discussed next.

Multicollinearity exists in regression models when there is a correlation between a predictor variable and another predictor variable. Using SPSS, version 24 a collinearity statistic was run, see Table 14. A tolerance of less than 0.1 or a VIF greater than 10 would indicate a potential multicollinearity problem. The results for all of the independent variables indicate that the tolerance is greater than 0.1 and the VIF is less than 10 resulting in a level of collinearity that is not concerning.

Table 14
Coefficients

Model		Collinearity Statistics	
		Tolerance	VIF
1	Age	.889	1.125
	Race	.909	1.100
	Gender	.960	1.041
	Education Level	.894	1.119
	Counsel Type	.974	1.027
	Time to finding	.931	1.074
	Number of defense fact witnesses	.424	2.359
	Defense Expert	.832	1.202
	Number of prosecution fact witnesses	.237	4.213
	Prosecution Expert	.373	2.684

Note. Dependent Variable: Outcome

The fourth assumption, the assumption of proportional odds, was assessed using a full likelihood ratio test with the independent variables, see Table 15. A full likelihood ratio test was used to test the assumption of proportional odds, and the assumption of proportional odds is met if the results are not significant. The test results, $X^2(27) = 37.90$, $p = .0794$ indicated that the results were not significant resulting in the assumption of proportional odds being met.

Table 15
Approximate Likelihood-Ratio Test

Chi-Square	df	Sig.
37.90 ^c	27	0.0794

Ordered Logit Regression Model

Given the nature of the outcome variable, an ordered logit regression model (ologit) appeared to be the most appropriate for the analysis (Liu,2016; Long,1997; Woolridge, 2010) and an ordinal probit analysis (oprobit) was also conducted. From a practical standpoint, users feel there is little practical difference between the ologit and oprobit approaches, but it may be useful to compare their results. Initial analyses of the results of the ologit model were problematic because at least one observation was completely determined indicating an unstable model. The results, detailed in Table 16, of the ologit model were reviewed and indicated that those with no high school education ($p = .038$), those with some college ($p = .025$), those whose case was decided between 18 and 24 months ($p = .015$), and the use of fact witnesses by the defense ($p = 0.15$) and by the prosecution ($p = .014$) were significant.

Table 16
Ordered Logistic Regression

Variable	Coefficients	Standard Errors	Odds Ratios
Age	.0025013	.0113312	1.002504
Race Black	.4968843	.4462238	1.643592
Race American Indian	Omitted by model		
Race Asian	-.2898425	1.04915	.7483814
Race Hispanic	-.4477487	.6366436	.6390652
Gender	.2624561	.4976768	1.300119
No high school	-.9168635*	.4424469	.399771*
High school	-.5314122	.4821974	.5877743
Some college	-2.098496*	.9385168	.1226407*
College graduate	-13.81734	555.5388	9.98e-07
Private counsel	.9227712	.630018	2.516254
No counsel	2.183242	1.557312	8.87503
Less than 6 months	-1.375586	.8083436	.2526914
6 to 12 months	-1.110801	.807264	.329295
12 to 18 months	-1.436308	.8481239	.237804
18- 24 months	-2.791477*	1.146364	.0613306*
Defense fact witness	-7.56869*	3.11411	.0005164*
Defense expert with no certification	Omitted by model		
No defense expert	-24.18941	18560.83	3.12e-11
Prosecution fact witness	.7146767*	.2911483	2.043526*
Prosecution expert with no certification	-3.962044	2.130896	.0190242
No prosecution expert	Omitted by model		

Note. * $p < .05$

Pseudo R^2 .1268

Note: 1 observation completely determined

The ologit model results indicated an unstable model with one observation completely determined. Because of the unstable model, a cross-tabulation was performed that revealed many empty cells. An oprobit model was also run, and the results indicated that there were two observations completely determined. The results of the ologit and the oprobit regression models indicated that there were significant variables; however, due to the empty cells and the completely determined observations, a model refit was undertaken.

To address the initial problematic ologit and oprobit models, the education variables were removed from the models to address the completely observed observations. The unknown category in the education variables defined the mode and was believed to be at least part of the problem with the models. The ologit and the oprobit regression models were rerun without the education variables, and the results were similar with one observation still completely determined.

A method that can be used to eliminate the determined observation in a regression model is to define the variables more broadly. To address the completely determined observation and the concern regarding the number of empty cells several categorical and ordinal independent variables were recoded to fewer categories making the variables broader, see Appendix B for the final variable codebook. Recoding of race to a binary variable with “0” Non-White/ All Other and “1” White as the categories resulted in little loss of information as White was overwhelmingly (72.1%) represented in the sample. Education was removed from future models because most of the sample showed that this value was unknown. Conversion of the time variable to a binary variable: “0” greater

than 6 months and “1” Less than 6 months, the type of counsel to a binary variable, “0” Private/ other and “1” Public defender, defense expert and prosecution expert to binary variables: “0” No expert and “1” Expert with/ without certification also provided cleaner variables for analysis, see Table 17.

Table 17
Recoded variables

Age	
Race	0: Non-White/ All others 1: White
Gender	0: Male 1: Female
Counsel type	0: Private/ None 1: Public
Time to finding	0: Greater than 6 months 1: Less than 6 months
Number of defense fact witnesses	
Defense expert	0: No expert 1: Expert with/without certification
Number of prosecution fact witnesses	
Prosecution expert	0: No expert 1: Expert with/ without certification

Using SPSS, version 24 a collinearity statistic and a likelihood ratio test were run using the recoded variables and the results, displayed in Table 18 and Table 19, indicated that the level of collinearity is not concerning, retaining the third required assumption of ordinal logistic regression. The likelihood ratio test was not significant resulting in proportional odds, X^2 42.016(51), $p = .811$ being met.

Table 18
Coefficients

Model		Collinearity Statistics	
		Tolerance	VIF
1	Age	.895	1.118
	Race	.943	1.060
	Gender	.961	1.040
	Counsel type	.974	1.027
	Time to finding	.969	1.032
	Number of defense fact witnesses	.424	2.359
	Defense Expert	.834	1.200
	Number of prosecution fact witnesses	.239	4.192
	Prosecution Expert	.373	2.682

Note. Dependent Variable: Outcome

Table 19
Approximate Likelihood-Ratio Test

Chi-Square	df	Sig.
42.016 ^c	57	.811

The ologit and oprobit models were fitted to the data using the converted variables. Researchers consider both techniques to yield similar results. The choice between ologit and oprobit is a matter of personal taste or disciplinary tradition only. Most economists prefer the use of oprobit while other social scientists prefer ologit. The view of seasoned users is that the logistic and normal distributions are nearly indistinguishable. Table 20 shows the results of the ologit model and Table 21 shows the results of the oprobit model with the recoded independent variables.

Table 20
Ordered Logit Regression

Variable	Coefficients	Standard Errors	Odds Ratios
Age	-.0031555	.0106785	.9968495
Race	.3024975	.3474432	1.353234
Gender	-.2545324	.4552004	.7752789
Type of Counsel	.6813835	.5348427	1.976611
Time	-.2516582	.3205091	.7775105
Defense fact witness	-7.435956*	3.027609	.0005897*
Defense expert	8.133774	491.8438	3407.636
Prosecution fact witness	.6377779*	.2806468	1.892271*
Prosecution expert	3.703009	2.065243	40.56921

Note *= $p < .05$
Pseudo R^2 0.0691

The results of the ologit and oprobit are remarkably similar. The final ologit model significantly predicted the dependent variable, $X^2(9) = 28.48$, $p = .0008$ and the final oprobit model also significantly predicted the dependent variable, $X^2(9) = 25.41$, $p = .0025$. The ordered logit and oprobit coefficients revealed that defense fact witnesses ($p = .014$, $p = .004$) and prosecution fact witness ($p = .023$, $p = .020$) are significant in both models. None of the other variables were found to be statistically significant.

The ologit model revealed that for each unit increase in defense fact witness there was a 7.4 decrease in the log odds of being in a lower level of outcome and for each unit increase in defense fact witness the odds of an increase in a unit increase in the outcome is .0006 times greater. The model also revealed that for each unit increase in prosecution fact witness we could expect a .64 increase in the log odds of being in a higher level of

outcome and for each unit increase in prosecution fact witness the odds of an increase in the unit increase in the outcome is 1.9 times greater.

Table 21
Ordered Probit Regression

Variable	Coefficient	Standard Error
Age	-.0016469	.0063928
Race	.1699506	.197895
Gender	-.0854796	.2547415
Type of counsel	.4062589	.3280114
Time	-.0990331	.1859495
Defense fact witness	-3.066483*	1.050686
Defense expert	2.842306	69.96166
Prosecution fact witness	.2343732*	.1009808
Prosecution expert	1.137444	.8817747

Note *= $p < .05$
Pseudo R^2 0.0616

The oprobit model revealed that for each unit increase in defense fact witness we could expect an increase of 3 in the log odds of being in a lower level of outcome. The oprobit model also revealed that for each unit increase in prosecution fact witness we could expect a .23 increase in the log odds of being in a higher level of outcome.

STATA 15IC utilizes McFadden's pseudo R^2 for reporting of the goodness of fit or the effect size of the model. While the use of pseudo R^2 in ordinary least squares regression (OLS) is straightforward, it measures the proportion of variance accounted to the dependent variable by the independent variables; it is not nearly as evident in logistic regression (Cohen et al., 2015). In OLS, the model assumes homoscedasticity, each error variance is the same for each criterion, while in logistic regression there exists

heteroscedasticity, a different error variance for each criterion (Cohen et al., 2015). This difference results in a lower pseudo R^2 in logistic regression than in OLS but does not necessarily indicate that the model is bad (Hosmer & Lemeshow, 2000). In the ologit model, the reported pseudo R^2 is .0691 and in the oprobit model as .0616. These pseudo R^2 levels indicate that the independent variables accounted for 6.9%, in the ologit model and 6.1%, in the oprobit model of the effect on the dependent variable. Although weak, these results need to be cautiously evaluated because of the concerns addressed by Cohen et al. (2015) and by Hosmer and Lemeshow (2000) which may make the effect stronger than it appears.

According to Durlak (2009), a p -value is a function of the sample size and of the effect size and significance does not correlate to large effect size. I found that the use of fact witnesses by both the prosecution and by the defense was significant with a weak effect. Although weak, the study provides some insight into the social justice afforded to arson defendants.

Research Questions and Hypotheses

The identified problems with the original model run made it necessary to eliminate education as a control variable resulting in the removal of the variable from the research questions. There were two specific research questions the study was designed to answer. The first research question was developed to examine the effect of crime control predictor variables and control variables on the outcome of arson trials.

RQ1: What effect does time to trial; number of prosecution witnesses; the number of prosecution experts; and the control variables age, race, gender, and education have on

the criminal case outcome for those accused of arson in the West Central counties of the state of Florida from 2011-2015?

H_{1a} : The time to trial does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{0a} : The time to trial does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{1b} : The number of prosecution witnesses does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{0b} : The number of prosecution witnesses does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{1c} : The number of prosecution experts does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{0c} : The number of prosecution experts does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

In the ologit and oprobit models, the time to trial was not significant ($p=.432$, $p=.0594$) resulting in failing to reject the first null hypothesis. The second null hypothesis, the number of prosecution witnesses does not affect the outcome was significant ($p=.025$, $p=.020$) resulting in the rejection of the null hypothesis and favoring the alternative

hypothesis. The third null hypothesis, number of prosecution experts does not affect the outcome was not significant, ($p = .073$, $p = .197$) resulting in failing to reject the null hypothesis. The control variables, age, race, and gender did not significantly contribute to the outcome.

The second research question was developed to examine the effect of due process predictor variables and control variables on the outcome of arson trials.

RQ2: What effect does the type of defense counsel; number of defense witnesses; access to a fire origin and cause expert; and the control variables age, race, gender, and education have on the criminal case outcome for those accused of arson in the West Central counties of the state of Florida from 2011-2015?

H_{12a} : The type of defense counsel does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{02a} : The type of defense counsel does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{12b} : The number of defense witnesses does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{02b} : The number of defense witnesses does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{12c} : Access to a fire origin and cause expert does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{02c} : Access to a fire origin and cause expert does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

In the ologit and oprobit models, the type of defense counsel did not significantly ($p = .203$, $p = .216$) affect the outcome resulting in failing to reject the first null hypothesis. The number of defense witnesses did significantly affect the outcome ($p = .014$, $p = .004$) resulting in rejecting the second null hypothesis and favoring the alternative hypothesis. The effect that access to a fire origin and cause expert by the defense has on the criminal case outcome for the defendant was also not significant ($p = .987$, $p = .968$) resulting in failing to reject the third null hypothesis. The control variables, age, race, and gender did not significantly contribute to the outcome.

Summary

The results indicated that the number of fact witnesses used by the defense and by the prosecution had a significant role in determining the judicial outcome for those accused of arson. After determining that the use of ordinal logistic regression was problematic with the original variable coding, ologit, and oprobit models were used to model the data with the recoded variables which resulted in finding that the number of defense fact witnesses and the number of prosecutor fact witnesses were the only two predictor variables that were significant. The control variables were also found not to be

significant predictors of the judicial outcome of those accused of arson. The two research questions were investigated using the results of the ologit and oprobit regression models. Chapter 5 will further discuss the interpretation of these findings, apply the chosen theoretical framework, limitations, make recommendations, and discuss the social implications of the study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of the study was to investigate a gap in the knowledge regarding the position of criminal arson defendants on a crime control due process pendulum with crime control on one side and due process on the other. I investigated the criminal case outcomes of those accused of arson in the West Central counties of Florida from 2011-2015 to provide insight into the location of the pendulum as it applies to this population. I found that the location of the crime control due process pendulum can be placed on the arc and is located toward crime control. In this chapter, I will discuss each of the significant predictor variables, interpret the findings of the study, apply the findings to the theoretical framework, discuss limitations, make recommendations, discuss social implications, and offer a conclusion.

Discussion

The study was designed to answer questions related to the effect if any, the predictor variables and the control variables had on the trial outcome of those accused of arson. The dependent variable, the criminal outcome, was split into five categories, and the results were 8.8% were found not guilty, 4.2% were found guilty of a misdemeanor, 6.7% were found guilty of a third-degree felony, 45.5% were found guilty of a second-degree felony, and 35.2% were found guilty of a first-degree felony.

The initial ordinal logistic regression model and the originaloprobit model were found to be problematic because they were unstable with at least one observation being completely determined. I found that the likely problem with the model was the large

number of blank cells that were caused by the initial coding scheme developed for the variables and by many unknown education levels in the sample. The solution was to drop the education variable from the models and to recode other variables to make them broader. Ologit and oprobit models were then run using the recoded variables. I found that defense fact witness and prosecution fact witness were the only significant variables ($p < .05$).

In the United States, the Constitution guarantees that the accused be offered the ability to confront their accusers and to present witnesses to refute the allegations made against them. In the modern justice system, the number of witnesses called to testify against the accused is no longer, as it was under the old English system, relied upon to determine the guilt or innocence of the accused. The modern justice system presents the number of witnesses that are necessary to establish the facts and to prove the elements of the crime. The smaller the number of fact witnesses that are presented by the prosecution to obtain a guilty verdict the more efficient the process is, which arcs the pendulum toward crime control, while the larger the number used by the defense, the more the pendulum arcs toward due process.

The defense used fact witnesses in 3.6% of the cases using two fact witnesses in two cases and one fact witness in four cases. In these cases, for each unit increase in fact witness, I would expect there to be a 7.4 decrease in the log odds of being in a lower outcome for the defense and for each unit increase the odds were .0006.

The use of fact witnesses by the prosecution in 21.5% of the cases resulted in the defendant being found guilty of a felony in the first degree 1.9 times more frequently than

when the prosecution did not use a fact witness. For each unit increase in prosecution fact witness, I would expect a .64 increase in the log odds of the defendant being in a higher outcome. I found that the prosecution relied on the use of fact witnesses in 14 cases with the number of fact witnesses used ranging from two to 30.

Interpretations of findings

The evaluation of each research question against the findings of the study and the hypotheses for each is discussed next.

Research Question 1

What effect does time to trial; number of prosecution witnesses; the number of prosecution experts; and the control variables age, race, gender, and education have on the criminal case outcome for those accused of arson in the West Central counties of the state of Florida from 2011-2015?

H_{1a}: The time to trial does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{0a}: The time to trial does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{1b}: The number of prosecution witnesses does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{0b}: The number of prosecution witnesses does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{1c} : The number of prosecution experts does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{0c} : The number of prosecution experts does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

This question was designed to evaluate the position of the pendulum as it relates to crime control. This evaluation occurred by evaluating the three hypotheses for the research question. The ologit model and the oprobit models both found the time to trial was not significant ($p=.432$, $p=.594$) resulting in the null hypothesis failing to be rejected, the time to trial did not significantly affect the outcome.

The number of prosecution witnesses was found to be significant in both the ologit and oprobit models ($p=.023$, $p=.020$). The ologit model indicated that the defendant was 1.9 times more likely to have an increase in the conviction level when the prosecution used a fact witness. In the ologit model, the likelihood of being found not guilty increased .63 with an increase in the number of fact witnesses used at trial. In the oprobit model, this increase was .23. The use of prosecution witnesses did significantly affect the outcome, and the null was rejected resulting in the alternative being favored.

The use of an origin and cause expert by the prosecution was found to be not significant ($p=.073$, $p=.197$). The use of an expert by the prosecution did not significantly affect the outcome resulting in the null hypothesis failing to be rejected.

The first research question has conflicting answers. The time to trial and the use of expert witnesses by the prosecution did not have a significant effect on the outcome for the defendant. The use of fact witnesses by the prosecution was found to be significant and did affect the outcome for the defendant. The control variables age ($p=.768, p=.797$), race ($p=.384, p=.390$), and gender ($p=.576, p=.737$) were all found not to be significant to the outcome for the defendant. The prosecution use of fact witnesses was found to be significant, allowing for the location of the pendulum, as it relates to crime control, to be placed slightly off-center arcing towards crime control.

Research Question 2

RQ2: What effect does the type of defense counsel; number of defense witnesses; access to a fire origin and cause expert; and the control variables age, race, gender, and education have on the criminal case outcome for those accused of arson in the West Central counties of the state of Florida from 2011-2015?

H_{12a} : The type of defense counsel does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{02a} : The type of defense counsel does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{12b} : The number of defense witnesses does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{02b} : The number of defense witnesses does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{12c} : Access to a fire origin and cause expert does affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

H_{02c} : Access to a fire origin and cause expert does not affect the criminal case outcome of those accused of arson in the West Central counties of the state of Florida from 2011-2015.

The second research question was designed to evaluate the position of the pendulum as it relates to due process. This evaluation occurred by evaluating the three hypotheses for the research question. The type of defense counsel was found not to be significant ($p = .203$, $p = .216$) in the outcome. The type of counsel did not significantly affect the outcome, resulting in the null hypothesis failing to be rejected. The use of an expert by the prosecution was also found to not be significant ($p = .073$, $p = .197$) in the models, and this resulted in the null hypothesis failing to be rejected.

The ologit and oprobit models indicated that the use of fact witnesses by the defense was significant ($p = .014$, $p = .004$) and did affect the outcome of the court proceeding. The ologit model found that an increase in the number of defense witnesses decreased the likely hood of being found guilty 7.44 times and the oprobit model found that the likelihood of being found guilty to be three times less as the number of defense fact witnesses increased. The defense used fact witnesses in only 3.6% of the cases, and I

found that if the defense had used more fact witnesses, more defendants might have been found not guilty. The use of fact witnesses by the defense did affect the outcome.

Therefore, the null was rejected resulting in the alternative being favored.

As in the first research question, the results are conflicting. The type of counsel and the use of an origin and cause expert by the prosecution did not have a significant effect on the outcome, but the use of fact witnesses by the defense did have a significant effect on the outcome and were only used in 3.6% of the cases. The control variables age ($p = .768$, $p = .797$), race ($p = .384$, $p = .390$), and gender ($p = .576$, $p = .737$) were all found not to be significant to the outcome for the defendant. Viewing the significant variable defense fact witness and the low percentage of use the location of the pendulum as it relates to due process and the second research question is slightly off-center leaning towards crime control.

The question remains, where on the pendulum does the criminal justice system reside regarding the population, criminal arson defendants, of the study? I have made a few determinations comparing the results of the study and the characteristics of the sample against the information from the literature review. Packer (1964) detailed two models of the criminal process, one model being crime control and the other due process. Crime control, according to Packer, focuses on the efficiency of the process and believes that the very efficiency necessary to carry out the process will strip those that are innocent from the process and that for those that remain the efficiency of the process is more important than the accuracy. The results weakly indicated that the use of fact witnesses by both the prosecution and defense leans toward the crime control side of the

pendulum. The use of fact witnesses was found to be significant but were only used 21.5% of the time by the prosecution and 3.6% of the time by the defense, so even though they were not used often, fact witnesses did significantly affect the outcome.

Theoretical Framework Findings

Packer's theory (1964, 1968), regarding crime control and due process and the push and pull between them, discussed the role that different factors might play in the position of the criminal justice system. I designed the study to enable the placement of the criminal justice system, as it relates to the population, somewhere on the arc between crime control and due process. The significant variables, prosecution fact witnesses, and defense fact witness indicated that the system weakly leans toward the crime control position. The use of fact witnesses by the defense offers the defendant the opportunity to enter into evidence the facts or to refute the facts of the case to ensure that if found legally guilty the guilt is based on the factual guilt of the accused. The introduction of fact witness testimony by the prosecution affords the prosecution the same opportunity as the defense, it allows for the facts of the case to be entered into the evidence of the trial and to get into evidence the elements of the crime and is used to determine the legal guilt or innocence of the defendant. Each side of Packer's theory (1964, 1968), crime control on one end and due process on the other, has outcomes that provide evidence of where the pendulum resides and using these outcomes the results of the study have been placed on the arc weakly leaning towards crime control.

Limitations

A randomized sample was obtained from the population of those accused of committing the crime of arson, but there was no random assignment to test groups. This limitation exists in all quasi-experimental studies and is not unique to this individual study. The inability to randomly assign members to test groups potentially limits the generalizability to a larger population and causes internal validity concerns as well.

The problems with the initial model runs are also a limitation. The ordinal dependent variable had five levels, and many of the predictor variables were also ordinal which resulted in many blank fields when cross-tabulations were conducted. The solution to the problem was reducing the levels of many of the predictor variables and the control variables with limited success. Larger sample size would assist with reducing the blank fields. The use of a larger sample size may also solve the necessity to drop the education variable from the model which was also a limitation.

Generally accepted effect sizes for the relationships between the independent and dependent variables are, .20 small, .50 medium, and .80 large (Cohen, 1988), but according to Volker (2006), Cohen cautiously provided these values as a guide. Durlak (2009) suggested that r is the better effect size measure for correlational studies. While statistical significance indicated that a relationship exists between the independent and dependent variables the effect size indicated the strength of the relationship was weak. A limitation of the study is that the effect sizes are small. The ologit effect size of .0691 and the oprobit effect size of .0616 place the effect size of the study below the recognized

small effect of .20. These results indicate that the independent variables account for 6.9% and 6.2% of the effect on the dependent variable.

Recommendations

I found that the use of fact witnesses by the defense and by the prosecution were significant to the outcome of those accused of arson. These findings allow for the pendulum to be placed on the arc between crime control and due process, with the arc leaning toward crime control and this offers some guidance regarding where more research can be done to provide more insight regarding arson defendants. I found that the remaining predictor variables, time from arrest to outcome, type of counsel, and origin and cause expert witnesses and the control variables age, race, and gender did not significantly contribute to the criminal outcome of those accused of arson. The education variable was dropped from the study because most of the cases had an unknown education level which contributed to the original unstable ordered logistical regression model.

The right to counsel as guaranteed by the 6th Amendment to the United States Constitution extends, since the Supreme Court decision in *Gideon v. Wainwright* (1963), to all criminal defendants in State and Federal courts. The study revealed that all but one of the criminal arson defendants were represented either by a public defender (n=153) or by private counsel (n=11). The sole defendant from the sample that was not represented by counsel was offered a public defender and refused their services. The overwhelming assistance of counsel found in the study provides evidence that regarding counsel the pendulum arcs toward due process. The type of counsel was found not to be significant in

this study but other studies, have found that it was significant (Cohen, 2014, Hartley et al., 2010, Huang, Chen, and Lin, 2009, Williams, 2013). Further research with a larger sample may provide greater insight regarding the role that the type of counsel had for the population.

In the United States, the necessary speed of the justice system is outlined in the 6th Amendment to the United States Constitution and detailed in law. The 6th Amendment guarantees a speedy trial and the *Speedy Trial Act of 1974* as amended requires the trying of federal cases within 70 days of arrest or indictment. In Florida, the Florida Rule of Criminal Procedure Rule 3.191(a) requires that an individual arrested for a felony offense be brought to trial within 175 days of arrest for a felony (Florida Bar, 2017). Criminal arson outcomes took more than six months in 66.7% of the cases which exceeds the 175 days allowed by the law in Florida. I did not investigate the specific circumstances that led the cases to exceed the 175-day maximum. The Florida Rule of Criminal Procedure, rule 3.191(i) does allow the 175 days to be exceeded when stipulated to, by motions, and by court order. The time to disposition provides conflicting evidence. The excess time, in the sample, indicates the criminal justice system does slow down and when viewed through Packer's theory and would arc the pendulum toward due process. Further research regarding time to trial may provide a better understanding of the role that both time to trial and the adherence to the speedy trial requirement in the Constitution have on the social justice afforded to the defendants.

I also found that the use of expert witnesses by the defense and by the prosecution were not significant. Recall that the use of an expert witness at trial provides the finder of

fact, either the jury or the judge, specialized information that they may not possess to enable them to determine better what occurred. The use of fire origin and cause experts in a criminal proceeding provides the finder of fact the opinion of the expert where the fire started and why it started. I found that the prosecution relied on the origin and cause experts in 6.1% of the cases and that the use of an expert by the prosecution resulted in the defendant being found guilty 15 times more frequently than if the prosecution did not use an expert. A defense origin and cause expert is often used to contradict the opinion offered by the prosecution's origin and cause expert. The study revealed the one case where the defendant used an origin and cause expert the prosecution did not, and the defendant was found not guilty. This single defense origin and cause expert outcome contradicts Dioso- Villa (2016) who found that the defense expert's opinion was excluded 100% of the time in criminal trials. The findings indicated that the use of expert fire origin and cause experts are worthy of further study.

I found that the control variables age, race, and gender were not significant. Studies have found the age of fire setters has increased from the upper 20s in the 1980s and 1990s (Bourget & Bourget, 1989; Harris & Rice, 1984; Rice & Harris, 1991) to the lower 30s recently (Ducat, McEwan & Ogloff, 2013; Lindberg, Holi, Tani, & Virkkunen, 2005; Repo, Virkkunen, Rawlings & Linnoila, 1997) and I found that the mean age of the sample was 35.5. Most of the sample was White which is consistent with the literature (Blanco et al., 2010; Hoertel et al., 2011; Ritchie & Huff, 1999; Vaughn et al., 2010). In studies, the percentage of fire setters that were male ranged from a low of 44.4% (Gannon & Barrowfield, 2012) to a high of 95.9% (Soothill & Pope, 1973). Males

comprised 86.7% of the sample, and this is in line with results from the literature (Lewis & Yarnell, 1951). The removal of education resulted in the role of education in the criminal trial outcomes to remain unknown. Further research, using a larger sample size, might provide a clearer understanding of the role that age, race, gender, and education may or may not play in the criminal case outcome.

I found the results of the study allowed for the placement of the criminal justice system on the arc between crime control and due process weakly leaning toward crime control. While Packer's theory (1964, 1968) views each polarity of his theory as neither good or bad, to have complete crime control you have no due process and to have complete due process, there is no crime control. Benet's *Polarities of Democracy* (2006, 2012, 2013) recognizes that there are strengths and weaknesses on both sides of the polarities. Future research using Benet to view the results of the study may offer more insight into the social justice afforded to the population.

Social Change Implications

I contribute to the literature by filling an identified gap in the literature, the role the use of fact witnesses by both the defense and prosecution have on the criminal outcomes of those accused of arson. My findings have implications for criminal justice policy and practice in the United States and the State of Florida. By viewing the findings through a two-model lens the treatment of convicted arson defendants by the system provides those in the criminal justice system with a better understanding of where on the arc, however weakly it may be, between crime control and due process the population is located. This insight will enable those that are responsible for criminal justice policy in

the United States to be better informed of the role that fact witnesses play in the outcome of those accused of crimes as the case moves through the criminal justice system. My results offer policymakers information that if the necessary resources are provided to the defense to investigate the claims against the accused, beneficial fact witnesses may be discovered and utilized at trial improving their defense. Arson defendants and their counsel will be able to view these results and better understand that the use of fact witnesses play a significant role in the decision of guilt or innocence. My findings may also suggest to policymakers changes that will better align criminal justice policy with the principals of justice as outlined in the United States Constitution and these changes may ensure a more fair and impartial administration of justice in the United States leading to positive social change.

While my results promise to inform social change actors; policymakers, criminal arson defendants, and those that defend and prosecute those defendants the results also provide insight into where further study may better inform these same actors. The type of counsel that represents criminal defendants has conflicting findings in the literature, and this study furthered that discussion by finding that publicly appointed and private counsel do not significantly affect the outcome for criminal arson defendants. The social change implications are that the answer is still unclear and that further study is necessary to understand the social justice of the current system better. My findings contradict the findings of Dioso-Villa (2016) that none of the defense experts could testify and I found that the lone defense expert could testify. The social change implications are that the use of defense origin and cause experts by the defense need to be further studied so that

policymakers and the attorneys that represent accused arsonists can better understand the relationship between expert testimony and social justice.

Finally, I reveal that Packer's theory may not be the best theory to describe social change as it relates to those accused of arson. If the results of the study were viewed using Benet's *Polarities of Democracy* theory (2006, 2012, 2013) the results may better inform and provide better insight regarding the social justness of the criminal justice system and better describe the strengths and weaknesses as they relate to those accused of arson. Further study using a larger sample size and viewed through Benet may provide a clearer understanding of the social justice of the system.

Conclusions

The position of the crime control and due process pendulum has swung back and forth over time, and since the 1960s the pendulum has swung more toward due process in the criminal justice system in the United States. The purpose of this study was to determine where, as it relates to those accused of arson in the West Central counties of Florida, the pendulum currently resides. Relying on the study's significant variables, defense fact witnesses, and prosecution fact witnesses the pendulum, was found to lean toward crime control weakly. Although the other variables time to trial, counsel type, defense and prosecution expert witnesses, and the control variables age, race, and gender were not significant the results provide a profile of the criminal arson defendants and also indicated that the slower methodical pace that assures the legal guilt of the accused is firmly in place but cannot be relied upon to draw conclusions related to this study. There are indicators that crime control still has a hold on the system, unsurprising since for the

first two hundred years of the republic the criminal justice system was firmly focused on crime control, but that the pendulum is moving toward due process.

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Appendix A: Data Collection Sheet

Predictors of conviction: An examination of arson trial outcomes in Florida

Data Collection Sheet

Control # _____

Docket #	Court location	Date Collected	Trial Record Format
			Paper/ Electronic

Dependent Variable

Not Guilty	Guilty, Misdemeanor	Guilty, Felony B	Guilty, Felony A
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Independent Variables

Defense Origin + Cause expert	Yes	No	Defense Origin and Cause Expert certified	Yes	No
Counsel Type	Public /Court appointed	Private/ Not court-appointed	No counsel		
Time to disposition	< 6 months	6 to 11 months	12-17 months	18-23 months	>24 months
Number of Prosecution Fact witnesses		Number of Prosecution expert witnesses			
Age					
Gender	Male	Female			
Education	< HS Grad	HS Grad	Some college	College Grad	Graduate School

Race	African American	American Indian	Asian	Hispanic	White
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Notes: _____

Appendix B Codebook

Outcome

		Value	Count	Percent
Standard Attributes	Position		2	
	Label	Outcome		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	1.00	Not Guilty	14	8.5%
	2.00	Guilty Misdemeanor	7	4.2%
	3.00	Guilty: Felony 3rd Degree	11	6.7%
	4.00	Guilty: Felony 2nd Degree	75	45.5%
	5.00	Guilty: Felony 1st Degree	58	35.2%

Age

		Value
Standard Attributes	Position	3
	Label	Age
	Type	Numeric
	Format	F4
	Measurement	Scale
	Role	Input
N	Valid	165
	Missing	0
Central Tendency and Dispersion	Mean	35.52
	Standard Deviation	14.333
	Percentile 25	24.00
	Percentile 50	31.00
	Percentile 75	45.00

Race

		Value	Count	Percent
Standard Attributes	Position	4		
	Label	Race		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	Non-White/ All others	46	27.9%
	1.00	White	119	72.1%

Gender

		Value	Count	Percent
Standard Attributes	Position	5		
	Label	Gender		
	Type	Numeric		
	Format	F3.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	Male	143	86.7%
	1.00	Female	22	13.3%

Type of counsel

		Value	Count	Percent
Standard Attributes	Position	7		
	Label	Counsel Type		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	Private/ none	12	7.3%
	1.00	Public	153	92.7%

Time

		Value	Count	Percent
Standard Attributes	Position	8		
	Label	Time to Finding		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	Greater than 6 months	110	66.7%
	1.00	Less than 6 months	55	33.3%

Defense fact witness

		Value
Standard Attributes	Position	9
	Label	Number of defense fact witnesses
	Type	Numeric
	Format	F3
	Measurement	Scale
	Role	Input
N	Valid	165
	Missing	0
Central Tendency and Dispersion	Mean	.05
	Standard Deviation	.266
	Percentile 25	.00
	Percentile 50	.00
	Percentile 75	.00

Defense expert

		Value	Count	Percent
Standard Attributes	Position	10		
	Label	Defense Expert		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No expert	164	99.4%
	1.00	Expert with/ without certification	1	0.6%

Prosecution fact witness

		Value
Standard Attributes	Position	11
	Label	Number of prosecution fact witnesses
	Type	Numeric
	Format	F3
	Measurement	Scale
	Role	Input
N	Valid	165
	Missing	0
Central Tendency and Dispersion	Mean	.93
	Standard Deviation	3.622
	Percentile 25	.00
	Percentile 50	.00
	Percentile 75	.00

Prosecution expert

		Value	Count	Percent
Standard Attributes	Position	12		
	Label	Prosecution Expert		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	Expert with/ without certification	10	6.1%
	1.00	No Expert	155	93.9%