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The Effectiveness of Sex Offender Residency Restrictions in Alabama and Oklahoma: Are We Preventing Crime in the Heart of Dixie and the Sooner State?

Stacie Merken

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THE EFFECTIVENESS OF SEX OFFENDER RESIDENCY RESTRICTIONS IN
ALABAMA AND OKLAHOMA: ARE WE PREVENTING CRIME IN THE HEART
OF DIXIE AND THE SOONER STATE?

A Dissertation

Submitted to the School of Graduate Studies and Research

in Partial Fulfillment of the

Requirements for the Degree

Doctor of Philosophy

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August 2015

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Title: The Effectiveness of Sex Offender Residency Restrictions in Alabama and Oklahoma: Are We Preventing Crime in the Heart of Dixie and the Sooner State?

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This study examined the legal impact of Megan's Law and residency restrictions in Alabama and Oklahoma. Both states incorporated a 2,000 feet buffer zone, where convicted sex offenders, once released, must live in accordance with this distance, away from areas where children tend to congregate. The legislation's intent is to remove the offender from the equation, making any suitable targets harder to access.

Two simple interrupted times-series (ITS) designs were utilized to measure monthly arrest rates of rape and robbery for both states. Eight Autoregressive Integrated Moving Average (ARIMA) models were developed to analyze the legal impact of residency restrictions. For each state, two ITS models examined the start of the data (January 1984) to the month prior of residency restriction enactment, using Megan's Law enforcement dates as interruption time points assessing monthly rape arrest rates. Two additional models for each state analyzed the start date of Megan's Law through December 2012 with the enactment dates for residency restriction legislation as the interruption points examining any change in monthly rape arrest rates. The same time frames were used to examine a nonequivalent dependent variable of robbery, selected as a means of control, where the nature of the crime is equivalent to rape as both are categorized as Part I index crimes—however, no impact should occur as the legislation was designed for decreasing sex crimes.

The visual and statistical inspection of the models indicated no significant impact for either state when residency restrictions were enforced. The monthly arrest rates for rape in both states displayed a slight decrease when the legislation was first enforced; however, this was a temporary change as arrest rates eventually continued to increase. In the examination of the nonequivalent dependent variable, two models displayed a decrease in the amount of robberies directly after legislation was enacted, but these decreases were statistically insignificant. The two additional models displayed an increase in monthly robbery arrest rates, yet these increases also were statistically insignificant. Plausible reasons for this policy impact along with recommendations of alternative ways to treat sex offenders are offered.

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TABLE OF CONTENTS

Chapter	Page
I	INTRODUCTION1
	Federal Mandates and State Legislation4
	Cases and Media Hype.....4
	Alabama and Oklahoma’s Residency Restrictions6
	Purpose of the Study7
	Research Intent.....7
	Research Concepts9
	Interrupted Time-Series (ITS): Using ITS Designs10
	Summary11
II	LITERATURE REVIEW13
	Introduction.....13
	Definition of a Sex Offender.....14
	History of Previous Sex Offender Legislation.....15
	The First Wave: Public Panic16
	The Second Wave of Public Panic: The Sexual Psychopath
	Laws of the 1930s18
	The Third Wave of Public Panic: “Stranger-Danger” of the
	1980s and 1990s.....23
	The Millennium: A Continuation of Stringent “Stranger-
	Danger” Sex Offender Policy27
	Residency Restrictions: The Latest Policy Prevention Against Sex
	Offenders.....33
	Previous Research on Residency Restrictions34
	Current Study35
III	METHODOLOGY38
	Study Design.....39
	Independent Variable39
	Dependent Variable40
	Conceptual Definitions42
	Operational Definitions.....44
	Data Utilized in the Study.....45
	Why Alabama and Oklahoma?46
	Interrupted Times-Series (ITS) Design.....47
	ITS Concept47
	ITS Design Overview50
	ITS Model 1: Alabama’s Megan’s Law (Rape Arrest Rates).....51

ITS Model 2: Alabama's Residency Restrictions (Rape Arrest Rates)	51
ITS Model 3: Oklahoma's Megan's Law (Rape Arrest Rates)....	51
ITS Model 4: Oklahoma's Residency Restrictions (Rape Arrest Rates)	52
ITS Model 5: Alabama's Megan's Law (Robbery Arrest Rates)	52
ITS Model 6: Alabama's Residency Restrictions (Robbery Arrest Rates)	52
ITS Model 7: Oklahoma's Megan's Law (Robbery Arrest Rates)	53
ITS Model 8: Oklahoma's Residency Restrictions (Robbery Arrest Rates)	53
Types of Effects	53
Threats to Statistical Conclusion Validity	54
Threats to Internal Validity	55
Threats to Construct Validity	55
Threats to External Validity	56
Strengths and Limitations	56
Strengths	56
Limitations	57
 IV ANALYSIS AND FINDINGS	 59
Interrupted Time-Series Design and Analysis Method	59
Model Construction	62
Identification	62
Estimation	64
Diagnosis	65
Data Analysis	66
Model 1: Alabama Pre-Megan to Residency Restriction Enactment Rape Arrest Rates	66
Model 2: Alabama Megan's Law to December 2012 Rape Arrest Rates	72
Model 3: Oklahoma Pre-Megan to Residency Restriction Enactment Rape Arrest Rates	73
Model 4: Oklahoma Megan's Law to December 2012 Rape Arrest Rates	75
Model 5: Alabama Pre-Megan to Residency Restriction Enactment Robbery Arrest Rates	77
Model 6: Alabama Megan's Law to December 2012 Robbery Arrest Rates	78
Model 7: Oklahoma Pre-Megan to Residency Restriction Enactment Robbery Arrest Rates	80

Chapter	Page
Model 8: Oklahoma Megan’s Law to December 2012	
Robbery Arrest Rates	82
Statistical Summary	84
V DISCUSSION AND CONCLUSION	87
Summary of Key Findings	87
“One-Size-Fits-All” Model: What Is Working, What Is Not	
Working, and What Is Promising.....	88
The Containment Approach: Can We Manage Convicted Sex	
Offenders in the Community?.....	91
Behavior Modification: A Psychological Approach.....	92
The Good Lives Model	93
How Do We Fix Somewhat Broken Legislation?.....	94
Policy Implications of Sex Offender Residency Restrictions.....	95
Policymaking: The Welsh & Harris (2008) Way:	
Recommendations for New Sex Offender Legislation	97
Future Research: What Is the Next Step?	99
REFERENCES	102
APPENDICES	120
Appendix A- Types of Effects	120
Appendix B- ACFs and PACFs for Models 2-8	125

LIST OF TABLES

Table	Page
1 Durbin-Watson Statistics for All Time Frames With Dependent and Nonequivalent Dependent Variables.....	60
2 SPSS Time Series Regression Output for Model 1 Alabama Monthly Arrest Rates for Rape ARIMA Model (1,0,1) (1,0,1) ₁₂	71
3 SPSS Time Series Regression Output for Model 2 Alabama Monthly Arrest Rates for Rape ARIMA Model (1,0,1) (1,0,1) ₁₂	73
4 SPSS Time Series Regression Output for Model 3 Oklahoma Monthly Arrest Rates for Rape ARIMA Model (1,0,1) (1,0,1) ₁₂	75
5 SPSS Time Series Regression Output for Model 4 Oklahoma Monthly Arrest Rates for Rape ARIMA Model (1,0,1) (1,0,1) ₁₂	76
6 SPSS Time Series Regression Output for Model 5 Alabama Monthly Arrest Rates for Robbery ARIMA Model (1,0,1) (1,0,1) ₁₂	78
7 SPSS Time Series Regression Output for Model 6 Alabama Monthly Arrest Rates for Robbery ARIMA Model (1,0,1) (1,0,1) ₁₂	80
8 SPSS Time Series Regression Output for Model 7 Oklahoma Monthly Arrest Rates for Robbery ARIMA Model (1,0,1) (0,1,1) ₁₂	82
9 SPSS Time Series Regression Output for Model 8 Oklahoma Monthly Arrest Rates for Robbery ARIMA Model (1,0,1) (1,0,1) ₁₂	84

LIST OF FIGURES

Figure	Page
1 Sequence plot of Alabama monthly arrest rates of rape (Model 1)	66
2 ACF for model 1 AL monthly arrest rates for rape ARIMA (0,0,0) (0,0,0) ₁₂	67
3 PACF for model 1 AL monthly arrest rates for rape ARIMA (0,0,0) (0,0,0) ₁₂	68
4 ACF for model 1 AL monthly arrest rates for rape ARIMA (1,0,1) (1,0,1) ₁₂	69
5 PACF for model 1 AL monthly arrest rates for rape ARIMA (1,0,1) (1,0,1) ₁₂	70
6 Sequence plot of Alabama monthly arrest rates of rape (Model 2)	72
7 Sequence plot of Oklahoma monthly arrest rates of rape (Model 3)	74
8 Sequence plot of Oklahoma monthly arrest rates of rape (Model 4)	75
9 Sequence plot of Alabama monthly arrest rates of robbery (Model 5)	77
10 Sequence plot of Alabama monthly arrest rates of robbery (Model 6)	79
11 Sequence plot of Oklahoma monthly arrest rates of robbery (Model 7)	81
12 Sequence plot of Oklahoma monthly arrest rates of robbery (Model 8)	83
13 Sequence plot of Alabama and Oklahoma monthly arrest rates of rape and robbery with emphasis on Megan's Law enactment dates	85
14 Sequence plot of Alabama and Oklahoma monthly arrest rates of rape and robbery with emphasis on residency restriction enactment dates	86

CHAPTER I

INTRODUCTION

Just as the constant and very simple laws of nature do not prevent perturbations in the movement of the planets, so human laws cannot prevent disturbances and disorders amid the infinite and utterly conflicting attractions of pleasure and pain. This, nonetheless, is the chimera of narrow-minded men when they hold power – Cesare Beccaria (1764/1819, p.74)

These words remind us that often times legislation intended to reduce criminal behavior is ineffective; thus, providing society with a false sense of hope and security. Too often criminal justice issues receiving mass media attention instill a sense of fear, which creates an ideology among society that crime occurs often, in the most heinous manner, by strangers. Legislators react quickly to diminish that fear, not addressing the problem's root cause, but reacting to the symptoms causing fear in the population. Recently, legislative responses have included enactment of laws related to terrorism, gun control, and convicted sex offenders. Testing legislation impact does not occur often as implementation of these types of legislation alone suffices the media and general population, providing a false sense of security. The intent of this research was to assess the impact of sex offender laws in Alabama and Oklahoma--two states that have enacted extremely comprehensive and punitive laws in an attempt to protect society from sex offenders.

Approximately 1 in 3 girls and 1 in 7 boys will be sexually abused during some point in childhood (Briere & Eliot, 2003). In 93% of these cases, the child knows the offender and while many are acquaintances, at least 47% are a family member or extended family member (Douglas & Finkelhor, 2005). Victimization is not limited to children. About 18% of women in the United States have been raped during their lifetime

and in 2006 more than 300,000 college women were raped (Kilpatrick, Resnick, Ruggiero, Conoscenti, & McCauley, 2007). In 2010, only 25% of reported female rape/sexual assaults were committed by strangers (Truman, 2011). These numbers are relevant to show the prevalence of sex offending and how this national problem needs to be addressed in more effective ways than the current legislation provides. The current legislation assumes sex offenses are committed by strangers; therefore, implementing policies based on this false perception, whereas the empirical data indicate this is not the case. The sensationalized media accounts only further perpetuate the myth of stranger-danger. The awareness of these cases “adds fuel to the fire” so to speak with public demands for punitive legislation to protect society from strangers lurking in the bushes, not from the offender in the home or school.

According to Vess (2009), “Laws intended to increase protection from sex offenders are often prompted by sensational crimes that provoke public outrage” (p.264). This statement encompasses the way in which mass media helps to create misconceptions of crime, specifically sex offenses. A very powerful triangle exists within American culture: Media, ideology, and politics. Through the notion of “if it bleeds it leads,” media outlets portray sensationalized accounts of violent crime, which in turn creates a moral panic among citizens. This moral panic then leads to the demand for legislators to further protect the people from what the public believes is occurring on a regular basis. The public remembers certain criminal incidents (e.g., JonBenét Ramsey, Adam Walsh, Megan Kanka, and Jessica Lunsford) because these cases were mysterious, intriguing, devastating, and received extensive media coverage. In addition, Megan, Adam, and

Jessica's cases were committed by strangers (JonBenét's is unknown) only further perpetuating the myth that stranger-danger is common.

This connection between media, ideology, and politics is nothing new. After the Cleveland Torso killings in 1934 and the trial of Albert Fish in 1935, FBI Director J. Edgar Hoover claimed sex offenders run rampant among the U.S... they are everywhere. This statement created a public frenzy with regard to sex offenders (Freedman, 1987; Jenkins, 1998; Lave, 2009). Unfortunately the general public does not know these extreme cases are rare. The public perceptions still fall in line with years of concern about stranger-danger and the need for stringent punishment of sex offenders.

More recent studies suggest the public believes constitutional rights are not infringed through Megan's Law and residency restrictions (Katz-Schiavone & Jeglic, 2009). Fifty-one percent of respondents agreed low-risk offenders should be placed on community notification, while 65% agreed communities were safer when sex offender residencies are known. Seventy-eight percent of respondents also believed it was fair for sex offenders not to reside in their original place of residence if this area was too close to schools, bus stops, playgrounds or parks. Additionally 65.5% of respondents believed it was fair for sex offenders to not live with supportive family after release if the residence was close to areas aforementioned. More than half (60%) of the respondents strongly agreed sex offenders still will recidivate despite their living conditions (Katz-Schiavone & Jeglic, 2009).

Comartin, Kernsmith, & Kernsmith (2009) found a great deal of public support in their survey of Michigan residents for residency restrictions. More than 80% of respondents agreed or strongly agreed convicted sex offenders should be restricted from

residing in areas where children frequent. The gap in knowledge between public perception and fact is relevant and the need for exploring effectiveness in residency restriction policy is vital. It is important for the general public to understand most sex offenses are non-violent and with few exceptions most convicted sex offenders eventually are released back into society. A stigma associated with this crime continues to manifest through the media portrayal of extreme cases. The perception of a sex offender to the public is much more than consensual sex resulting in statutory rape due to parental beliefs or a flasher who never touched a child.

Research, as early as the 1950s, has indicated most sex offense cases are committed by a relative, friend, or acquaintance, not by a stranger (Bedarf, 1995; Bureau of Justice Statistics, 2000/2003/2012; Lave, 2009; Levenson & Cotter, 2005; Levenson, D'Amora, & Hern, 2007; Sutherland, 1950a & 1950b; Tappan, 1950; Terry, 2006). Conversely, because of the media's persistent nature and the public's insistence for protection against stranger-danger, politicians feel the need to implement legislation in accordance with general public demands. In recent decades, residency restrictions have increased. States vary on their legislation with different degrees of buffer zones, e.g., areas in which sex offenders must refrain from living within a certain distance of where children tend to congregate. Two states, Alabama and Oklahoma, which follow more stringent guidelines, were the focus of this study.

Federal Mandates and State Legislation

Cases and Media Hype

Since the 1930s, the media has focused the public's attention on extreme sex offense cases causing public panic and legislative responses. Cases such as Albert Fish,

The Cleveland Torso Killings, Adam Walsh, Jacob Wetterling, Megan Kanka, Pam Lychner, and the McMartin trial provided the impetus for federal involvement to enact legislation to protect society from sex offenders. The first federal law enacted in 1994, The Jacob Wetterling Crimes Against Children and Sexually Violent Registration (The Jacob Wetterling Act of 1994), required registration for all individuals convicted of a crime against minors or individuals convicted of a sexually violent offense. Community notification was not mandatory; however, with the media portrayal of Megan Kanka's sexual assault and murder in 1996, the federal government was forced to act quickly to appease public demands. As an amendment to the Jacob Wetterling Act of 1994, Megan's Law was established in 1996 requiring states to have public disclosure of information pertaining to convicted sex offenders. During the same year, the federal government also passed the Pam Lychner Sexual Offender Tracking and Identification Act of 1996 as an attempt to align states' sex offender statutes. This legislation included the creation of a national FBI database collecting information for all sex offenders.

Federal legislation with regard to sex offenders reemerged in 2006 when the 25th anniversary of Adam Walsh's abduction and murder was honored through the Adam Walsh Child Protection and Safety Act. In memoriam for seventeen individuals abducted and/or murdered by convicted sex offenders--all cases receiving media coverage--the act established a national classification system of convicted sex offenders. It was mandatory for each state to have a three-tiered system establishing risk levels per offender. In addition, identical information must be displayed on state websites with regard to public information about sex offenders. Each law established was to honor victims of sex offenses by strangers. Both Alabama and Oklahoma complied with the required Megan's

Law. On January 1, 1996, all states were asked to create some version of Megan's Law in which states had public notification of released sex offenders. Failure to comply resulted in the same sanctions (10% cut in funding for crime control prevention) set forth in the Jacob Wetterling Act (Matson & Lieb, 1997). Alabama's Community Notification Act was implemented May 1, 1996 and Oklahoma's Sex Offender Registration Act was amended to include Megan's Law on November 1, 1997. Each state later expanded their legislation to include residency restrictions for sex offenders.

Alabama and Oklahoma's Residency Restrictions

Alabama's Community Notification Act (revised code and date: Alabama §15-20-26 [a] [Supp. 2004.]) was implemented on October 1, 2005 to further protect individuals from sex offenses. Alabama's legislation requires any convicted sex offender to live at least 2,000 feet away from any areas where children may frequent. Such areas could include but are not limited to: schools, bus stops, parks, daycare centers, and playgrounds (Levenson, 2009; Mancini, Barnes, & Mears, 2013). On November 1, 2003 Oklahoma revised its Sex Offender Legislation Act by incorporating the same buffer zone as Alabama (2,000 feet) with the same restrictions for convicted sex offenders reentering society. The perceived necessity to revise and enforce residency restrictions in both states has not officially been stated; however, media coverage and public opinion may have led both states to go above and beyond required measures.

With regard to Alabama, the Jessica Lunsford case may have helped provide impetus for revising their legislation. On February 24th, 2005, Jessica Lunsford was kidnapped, raped, and murdered by John Evander Couey, a convicted sex offender in Homosassa, Florida. This particular case was eye-opening to legislators because Couey

did not have the correct address on file and was living with relatives within a few miles of Jessica's home. The need for legislation in Florida to require more extensive tracking of convicted sex offenders was addressed. Known as the Jessica Lunsford Act, any lewd acts or molestation on an individual under age twelve would be considered a life felony with a mandatory minimum sentence of twenty-five years in prison (H.R. 1505, 2005). The individual also would have lifetime electronic monitoring by placing a Global Positioning System (GPS) device on one's ankle if considered a sexual predator. This legislation was never passed at the federal level, but more than twenty-five states, including Alabama and Oklahoma have enacted some version of the law (National Conference of State Legislatures, 2008).

In the case of Oklahoma, rape arrest rates dramatically increased from 2001 to 2002, which may have indicated a need for new sex offender regulations (Oklahoma State Bureau of Investigation, 2003). This law was then superseded on July 1, 2006, but maintained the residency buffer zone requirement. The reason for the extension of the law might derive from the Adam Walsh Child Protection and Safety Act or the Jessica Lunsford Act. The increase in rape arrest rates and exposure to both laws may have caused Oklahoma to follow suit by establishing residency restrictions.

Purpose of the Study

Research Intent

The purpose of this study was to assess the impact of Megan's Law and residency restriction legislation in both Alabama and Oklahoma. Testing the impact of legislations in two states provided more insight into whether these laws (Megan's Law and residency restrictions) were effective in reducing rape arrests. Rape arrest rates and robbery arrest rates were examined in two waves. The first wave consisted of the time frame from

January 1984 until the respective state enacted residency restrictions. For this time period, the enactment of Megan's Law in each state was used as the interruption point. The second assessment period started at the Megan's Law legislation enactment date for each state and continued through December 2012, the last period of data available for both states. The interruption for this period was the date each state enacted residency restriction laws.

Using a simple interrupted time-series design, the first model for Alabama spanned from January 1984 through September 2005 with May 1996 as the interruption point (when Alabama's version of Megan's Law was enacted). A second model from May 1996 through December 2012 also was utilized. October 1, 2005, the date of when residency restrictions were enforced in Alabama, served as the interruption point for this second model.

In examining Oklahoma's data, two models were employed using a simple interrupted time-series design. The first model used the time frame of January 1984 through October 2003 with November 1, 1997 (Oklahoma's Megan's Law enactment date) as the interruption point. A second model used the time frame of November 1997 through December 2012 with the interruption point being the date residency restrictions were enacted (November 1, 2003).

In analyzing the nonequivalent dependent variable robbery, two models using a simple interrupted time-series design were employed for both Alabama and Oklahoma. The same time frames for both states were used to compare the arrest rates for robbery. Using a nonequivalent dependent variable allows the researcher to better assess the legal impact of the legislation tested as this particular variable should not change due to the

enactment of residency restrictions. Statistically significant changes in both the variable of interest (rape arrest rates) and the nonequivalent dependent variable (robbery arrest rates) would suggest a historical threat occurred that impacted both variables.

Research Concepts

This current study added to previous literature which appears void of research findings using legal impact studies on sex offender residency restrictions. Utilizing two states with a dependent variable of rape and a non-equivalent dependent variable of robbery is unique to other studies in testing the impact of residency restrictions. Both variables fall under the Part I Index Violent Crimes; therefore, they are similar in degree of seriousness, but are not identical crimes. The use of intrastate comparison with known enactment dates further enhanced internal and statistical conclusion validity, while the comparison of two states increased the overall external validity. Examining two states over such a long time period provided an in-depth analysis of the legislation. A legal impact study added to the research in this area.

Past literature has examined the public's perception and/or constitutionality of such legislation, while others have used spatial analysis and Geographic Information Systems (GIS) to assess residency restrictions (Barnes, 2011; Berenson & Appelbaum 2011; Burchfield, 2011; Durling, 2006; Duwe, Donnay, & Tewksbury 2008; Grubestic & Murray, 2008; Grubestic, Murray, & Mack 2008; Hughes & Burchfield 2008; Iowa County Attorney's Association, 2008; Levenson, 2009; Levenson & Hern, 2007; Logan, 2006; Mancini et al., 2013; Meloy, Miller, & Curtis, 2008; Merriam & Salkin 2008; Nieto & Jung, 2006; Red Bird, 2009; Rodriguez & Dethlefsen, 2009; Socia, 2011a; Socia, 2011b; Socia, 2012; Terry, 2011; Tewksbury & Mustaine 2008; White, 2008;

Youstin & Nobles, 2009; Yung, 2007; Zandbergen, & Hart, 2006; Zandbergen, & Hart, 2009a; Zandbergen, & Hart, 2009b; Zandbergen, Levenson, & Hart, 2010; Zgoba, Levenson, & McKee 2009; Zlatkovich, 2009). After an extensive examination of previous literature, the need to assess the legal impact of sex offender residency restrictions became more apparent as this type of evaluation was missing.

Interrupted Time-Series (ITS): Using ITS Designs

The use of an interrupted time-series design was required to assess the effectiveness of legal impact studies, to include the effectiveness of residency restrictions for sex offenders. This design has been used successfully in the examination of existing laws such as zero-tolerance juvenile drunk driving laws in Pennsylvania (Lewis, 2009), Megan's Law in Pennsylvania (Clevenger, 2012), three strikes laws (Ramirez & Crano, 2003) and various other legislation. Examining several observations utilizing the same variables over time allows for a clear analysis of legal impact (Shadish, Cook, & Campbell, 2002). The current study examined observation periods of monthly rape arrest rates reported for both Alabama and Oklahoma. The nonequivalent dependent variable of monthly arrest rates for robbery also was used for both states to analyze the same time periods of residency restrictions. Both rape and robbery were examined over time before, during, and after the enforcement of Megan's Law and residency restrictions in both states.

To assess the impact of residency restrictions in both states using interrupted time-series design, an Autoregressive Integrated Moving Average (ARIMA) model was used. ARIMA modeling was required when auto-correlation was detected. First, Ordinary Least Squares Regression (OLS) was used to assess for auto-correlation, which described correlation between values at various observation points. Although some auto-correlation

was expected between observations that outside the acceptable range must be modeled prior to conducting a statistical analysis. Auto-correlation outside the acceptable range existed in the data between observations used for the study. ARIMA models were identified to address the auto-correlation, permitting a more accurate assessment of data from both states (Shadish et al., 2002).

Summary

This research assessed the impact of Megan's Law and residency restriction legislation in Alabama and Oklahoma. To date, there has not been an examination of residency restrictions comparing two states with similar demographics and legislative requirements. Without an understanding of legislation effectiveness, states will continue to implement policies regardless of their impact on the intended crime prevention strategies. Marvell and Moody (2008) stated "Policy implications have little use if they fail to translate into policy, which is unlikely unless other researchers and policy makers are reasonably certain that the implications are correct" (p. 363). The importance of this statement relies on criminological researchers to examine the legal impacts of policies because time and money are invested. An effective crime control policy will reduce crime instead of only offering the public a false sense of hope and security.

There has been an increase in the recent decade of examining policy effectiveness in criminology, but more work needs to be done. Welsh and Harris (2008) identified seven steps to program and policy development starting with identifying and analyzing the problem to planning and implementing the policy with the last steps requiring evaluating outcomes and reassessing and reviewing the policy. Very rarely are the last two steps implemented meaning most policies are not evaluated and assessed, nor are they reevaluated and reassessed if needed to deter crime effectively. The same can be

said about crime prevention policies which rarely are evaluated or tested scientifically to provide evidence-based proof of effective or ineffective legislation.

Sherman, Farrington, Welsh, and MacKenzie (2006) reviewed more than 600 scientific evaluations of crime prevention programs that varied in seven different settings. Using the Maryland Scientific Method Scale, these scientific studies were evaluated to show a variety of effectiveness through simple comparisons to randomized experiments. Their findings highlighted the importance of evidence-based research and the need for reassessment of crime prevention legislation. This legal impact study added additional findings to the literature related to legislative cures for sex offenders. The need for criminal justice policy evaluation is important as the public should be aware of what is working, what is not working, and what may be promising. Employing legal impact studies can help bridge the gap between the misperceptions and realities of crime control policies. The goal of this study was to provide new information to the existing residency restriction literature and to emphasize the significance of legal impact studies.

CHAPTER II

LITERATURE REVIEW

Introduction

According to Velázquez (2008), “Local, state, and federal policymakers have paid ever more attention to sex offenses over the past 20 years” (p. iii). This increase in attention stems from several high profile cases highlighted by the media. These cases were extreme sex offense crimes committed by strangers, starting a public frenzy and need for legislators to protect the public from sexual predators. Public opinion, which drives these policies, is based on the ideology that sex offenders are dangerous strangers who will recidivate. Through more punitive policies net widening occurred, where the definition of what is considered a sex offense expanded, prompting more individuals to be registered as sex offenders, increased sentences for convicted sex offenders, and an array of strategies implemented to continue protection of the public once the individual is released. These strategies include community notification and registration requirements, electronic monitoring, civil commitment, and more recently, residency restrictions. In actuality, most sex offenders do not recidivate and when examining the definition of a sex offense, various types fall under this category, not solely serious or violent sexual crimes (Jenkins, 1998; LaFond & Winick, 1998; Terry, 2006; Terry & Ackerman, 2009; Velázquez, 2008; Williams-Taylor, 2012). The question remains as to whether these strategies are useful and research about policy effectiveness needs to be continued.

This chapter takes the reader through a history of sexual offending, starting with definitions of sex offenders according to Alabama and Oklahoma’s legislation, followed by an examination of the waves of public panic with regard to sex offenses. An analysis of the history of sexual behavior also is provided. Various eras of legislative control

brought to the public eye through media attention of severe cases of sex offenses are addressed. These extreme cases caused legislators to rethink sex offender policies and to establish more extensive punishments regarding convicted sex offenders. An explanation of the current study utilizing an interrupted time-series design concludes the chapter.

Throughout the 1990s, increases in stringent policies toward sex offenders were seen as effective measures in protecting children from sexual predators. One of the new waves of legislation is known as residency restrictions. Residency restrictions currently are implemented in more than half of the states in the U.S. (Mancini et al., 2013). This legislation, if enacted, prohibits convicted sex offenders from residing within a certain proximity to any place where children may congregate, including but not limited to: schools, bus stops, parks, daycare centers, and playgrounds (Levenson, 2009; Mancini et al., 2013). The proximity is called buffer zones, which refers to the amount of space between where the sex offender's home is located in relation to these areas (Barnes, 2011). Buffer zones can range from 500 feet to more than 5,000 feet dependent upon the state--most ranges are typically from 1,000 to 2,500 feet (Barnes, 2011; Mancini et al., 2013; Nieto & Jung, 2006). The two states examined in this study, Alabama and Oklahoma, have residency restriction policies in which their buffer zones are 2,000 feet.

Definition of a Sex Offender

According to the Alabama Community Notification Act, §15-20-21 (1) an adult sex offender is defined as "A person convicted of a criminal sex offense, including a person who has pleaded nolo contendere to a criminal sex offense, regardless of whether adjudication was withheld" (Alabama Community Notification Act, 2005, p. 2). The state of Oklahoma does not have a specific definition of an adult sex offender. Their definition

pertains to individuals who must register under the Oklahoma Sex Offenders Registration Act (57 O.S. §581-590.2) and defines a sex offender as:

any person residing, working or attending school within the State of Oklahoma who has been convicted, or received any probationary term, for the commission or attempt or conspiracy to commit certain sex crimes in the state after November 1, 1989, or who entered the state after November 1, 1989, having previously been convicted or received any probationary term for a sex crime. State law designates certain sex offenders as habitual (two or more sex crime convictions) or aggravated (convicted of the most serious kinds of sex offenses), and based on federal law all sex offenders are assigned to one of three levels... (Oklahoma Sex Offender Registry, 2013, lines 5-8).

Alabama's definition is more general whereas Oklahoma specifies individuals in or entering the state. In addition, Oklahoma's definition designates a habitual or aggravated sex offender whereas Alabama's definition solely pertains to any individual who committed a criminal sex offense. In examining the residency restriction laws in Alabama and Oklahoma, both definitions were similar enough for comparison purposes to determine effectiveness of legislation.

History of Previous Sex Offender Legislation

Before an examination of previous and current sex offender legislation, it is important to understand the historical perspectives about sexual behavior. Before sex offenses became taboo, earlier societies accepted sexual activity with children. In Greek, Mediterranean, and Egyptian cultures, open sexual activity with children was considered normal (Terry, 2006). Sexual play with adults at an early age was designed to teach

children about sexual behavior. It was not until the early Middle Ages (15th-16th Century) that the church influenced shifts in moral thinking about sexual behavior (Terry, 2006). During this period, "...all sexual acts that were for enjoyment rather than procreation were considered to be sinful." (Terry, 2006, p. 22). During the 18th century, children were sent to "workhouses and brothels" where they were victims to assault, rape, or murder (Terry, 2006, p. 22). A crucial factor is with the exception of workhouses and brothels children had little danger from adult outsiders. The children engaged in sexual behavior with individuals they knew for the most part. Stranger-danger was not common. What is deemed now as inappropriate sexual behavior was occurring mostly in the home. The church began to invalidate incestuous marriages and "declared incest an ecclesiastical offense." (Terry, 2006, p. 22) The Progressive Era in the beginning of the 20th century pushed forth a new concern for children and women with researchers identifying serious sex offenders as psychopaths. The transition from acceptable to tolerant to neglected sexual behavior developed into another turning point, criminal. Through the various waves of public panic regarding sexual offending, the transformation from normal to unthinkable behavior emerged.

The First Wave: Public Panic

Before the 1880s, researchers had little information about individuals who engaged in deviant sexual acts (Terry, 2006). In 1886, Richard von Krafft-Ebing wrote *Psychopathia Sexualis*, a book in which he stated deviant sexual acts "were the result of psychopathological problems in the individual" (Jenkins, 1998; Terry, 2006, p. 24). His book further explained individuals with such a disorder could not be cured as this abnormality was permanent and rooted within one's character. Jenkins (1998) examined

the term “psychopathia sexualis” describing the linkage between psychopathy and sexual offenders. He argued this connection created the misperception that all sex offenders are psychopaths. In addition, Jenkins (1998) stated this misuse further perpetuated the public frenzy over sexual offenders.

At the same time, Havelock Ellis and Sigmund Freud both discussed the nature of deviant sexual behavior in their respective works (Freedman, 1987; Terry, 2006; Terry & Ackerman, 2009). Ellis observed how the change in the social environment defines sexual behavior, while Freud focused on sexual behavior within the family, identifying incest as “the root of problems for many girls” (Terry, 2006, p. 26). This era in the U.S. continued to produce not only religious moral reformers, but a public panic about “sex fiends” preying on children (Terry, 2006).

The years of 1910-1915 brought about the first retributive era in the U.S. with regard to sex offenders. During this time, there were a series of sex-related child murders in various states (Jenkins, 1998). The media played a salient role in creating public panic through sensationalized reports in which these murders were categorized as new “Jack the Rippers” in America (Jenkins, 1998; Terry, 2006). Police intervened to reduce serious sex crimes with arrests of all sexual offenders who committed offenses in public (Jenkins, 1998; Terry, 2006). This intervention brought about an increase in minor sex offender arrests; however, it did little in reducing the more serious sexual offenses.

The legislation during these five years was influenced by three main factors: 1) Indeterminate sentencing was introduced in most states for serious offenders, which inevitably affected sex offenders; 2) A move toward positivist thinking, with sociologists and criminologists describing psychopathology as deviant sexual behavior; and due to

this emergence of positivist thinking, 3) treatment for sexual deviancy became physiological with sterilization and castration as ways to rectify the behavior (Terry, 2006). This first wave subsided in the 1920s due to a turn from “stranger danger” toward incest as well as other more prominent topics in the media; e.g., organized crime and prohibition. In addition, a shift in sociological and criminological thinking occurred where research focused more on policing, organized crime, and juvenile delinquency issues than on sex offenders (Terry, 2006; Jenkins, 1998).

The Second Wave of Public Panic: The Sexual Psychopath Laws of the 1930s

During the trial of Albert Fish in 1935, an increase in public awareness of serious sex offenders became prominent (Jenkins, 1998; Terry, 2006; Terry & Ackerman, 2009; Velázquez, 2008; Williams-Taylor, 2012). The media coverage alongside the nature of Fish’s crime created a sex offender image for the public. The notion that dangerous sex predators were roaming the U.S. and would commit several crimes before detection increased public fear (Jenkins, 1998; Williams-Taylor, 2012). The Cleveland Torso Killings in 1934, the fourteen murders by Joe Ball in Texas in 1938, and the “lovers’ lane” murders in New Jersey also fueled public panic as all three were covered closely by the media (Jenkins, 1998). The increase in arrests created a false perception about the amount of sex offenses committed, but continued to push the public into a moral panic (Denno, 1998; Freedman, 1987; Jenkins, 1998). Public outcry and demands for legislation continued until Michigan, in 1937, enacted the first sexual psychopath laws.

Although Michigan’s law was considered unconstitutional the first year, it was amended and approved, followed by twenty-eight other states enacting similar sexual psychopath legislation (Denno, 1998; Guttmacher & Weinhofen, 1952; Jenkins, 1998;

Lave, 2009; Pratt, 1998; Sutherland, 1950a; Swanson, 1960; Terry, 2006; Velázquez, 2008). The sexual psychopath law required a judge to conduct a thorough review before sentencing an offender for sexual offenses if he/she appeared to be psychopathic or dangerous to society. Two physicians (typically psychiatrists) would examine the offender and provide a diagnosis. If the offender appeared to be a sexual psychopath through evidence provided to the judge and jury, the court was required to order the individual to a state hospital or institution until permanently cured from sexual psychopathy (Lave, 2009). Once cured, the individual would either complete his criminal sentence or be released dependent upon the various state laws (Lave, 2009). Civil commitment was utilized as a way to segregate the sex offender from society.

Sutherland (1950b) described the following ideology as the impetus for the sex offender laws: the great danger for women and children due to a rapid increase in serious sex crimes; sexual psychopaths commit these serious sex crimes and will continue to do so due to lack of control over sexual impulses; psychiatrists can identify sexual psychopaths before crimes have been committed; these criminals are punished, released into society, and continue to prey on women and children; these individuals must be segregated from society until permanently cured and laws should be enacted to do so; and psychiatrists should diagnose, treat, and decide the release of these individuals because the psychopathy they have is a mental illness. Through media and the sex crime wave, the aforementioned was seen as true about sexual offenders.

A continuation of preconceived notions about sex offenders spread throughout the United States. FBI Director J. Edgar Hoover perpetuated the hysteria through the declaration of a “War on the Sex Criminal” in 1937 and a publication in 1947 that

claimed sex offenses were rapidly increasing, yet sex offenders roam America freely (Freedman, 1987; Jenkins, 1998; Lave, 2009). Hoover's article was a call for an increase in law enforcement and was seen as a way to keep the FBI in the public eye as kidnapping and robbery rates had decreased (Jenkins, 1998). While the public hysteria expanded, research affirmed the ineffectiveness of the sexual psychopath laws (Sutherland, 1950a, 1950b; Tappan, 1950).

Sutherland (1950a) found the basis for the sexual psychopath laws was faulty. First, he argued the concept of "sexual psychopath" was too vague and incapable of use for "judicial and administrative purposes" (p. 142). Second, an investigation of states utilizing the sexual psychopath laws in comparison to those without did not show a difference in occurrence of serious sex crimes. Next, Sutherland (1950a) argued these laws were created due to fear, not because of fact. The media sensationalized a few major serious sex crime cases which produced uneasiness in the public and in turn, a demand of political reinforcement ensued. The sexual psychopath laws provided a sense of security for the public, who believed these laws were effective in controlling the sex offender problem; however, research showed otherwise.

Sutherland (1950b) showed evidence to the contrary when he examined rape, "stranger-danger," and recidivism in relation to sexual psychopath laws. With regard to rape, the FBI had stated approximately 50% of all reported rapes in the U.S. are forcible (Sutherland, 1950b). Sutherland found only 18% of convictions of rape in New York City during 1930-1939 were forcible and continued to state the unreliability of rape statistics. In relation to "stranger-danger," 102 out of 324 murders of females during this time were committed by husbands, 37 were by fathers or close relatives, and 49 were by lovers

(Sutherland, 1950b). Therefore, during this time approximately 60% of female murderers were relatives or individuals known by the victims. Only 10% of the murders were committed by strangers and the crime of rape-murder fell under this percentage. Sutherland (1950b) determined there was a much greater danger of sex offenses committed by known persons than by some “unknown sex fiend” (p. 546).

Sutherland (1950b) presented two different types of evidence to contradict the claim that recidivism of sex offenders was higher than other offenses. During this time, the FBI had a list of twenty-five types of crime with drug addicts ranking number one in offenders who recidivate most frequently. Larceny ranked number two, with vagrancy as number three, drunkenness as number four, and burglary as number five (Sutherland, 1950b). Rape ranked number nineteen and “other sex offenses” tied for the seventeenth rank; thus, for the 1,447 males arrested for rape during 1937, only 5.3% had previous convictions of rape according to the data (Sutherland, 1950b). A second set of evidence was provided from a study in New York City, which found sex offenders often are first time offenders in comparison to burglars, larcenists, and other types of offenders. The research also found exhibitionists had the highest rate of recidivism, not serious sex offenders (Sutherland, 1950b).

Tappan’s (1950) research examined federal (FBI) as well as local (NYC) data during 1930-1939. Out of 3,295 convicted sex offenders, 61% had no previous criminal record, whereas 35% of all other types of criminals did have a criminal record. Moreover, sex offenders with previous criminal records of sex crimes comprised only 9% of the 3,295 offenders examined. He also found sex offenders who do recidivate do so with a non-sexual crime. Tappan (1950) continued to correct the fallacies claimed by legislators

which the sexual psychopath laws were founded. One claim described “tens of thousands of homicidal sex fiends” roaming the U.S. (p. 13). He found most convicted sex offenders committed minor offenses (e.g., exhibitionists, peeping toms, homosexuals) and cited Sutherland’s (1950b) work indicating relatives or known persons to the victims comprised the majority of danger.

Another issue addressed was the progression of minor sex offenses to more serious sex crimes. After discussion with various psychiatrists and a confirmation of crime statistics, Tappan (1950) found no evidence to indicate an increase in violence in sex offenders more so than other offenders. Those who engage in minor sex offenses tend to find satisfaction in their release of sexual tension, and an increase from minor to major sex offenses is rare. A prediction of serious sex crime behavior was another fallacy Tappan (1950) rejected. An examination of seventy-five reports from “prominent psychiatrists” revealed a general consensus of the impossibility to predict such behavior with any type of precision (p. 14). Tappan (1950) like Sutherland (1950a & 1950b) agreed the term “sexual psychopath” was vague with two-thirds of psychiatrists expressing the same concern with a disagreement in the actual meaning. A variety of individuals were classified under this umbrella through an unclear definition and categorized as psychopaths. Individuals were combined, sparking the notion that sex offenders were homogeneous (Denno, 1998; Jackson, 1939; Lave, 2009; Sutherland, 1950a & 1950b; Tappan, 1950). The individuals most harmless comprised the majority of sex offenders institutionalized. Overall, Tappan (1950) argued a very small percentage of sex fiends like Albert Fish were dangerous and only these individuals should receive commitment.

The demise of the sexual psychopath laws began in 1977 when ineffectiveness of legislation was realized (Lave, 2009). By the 1990s, only thirteen states and the District of Columbia had sexual psychopath legislation; however, long periods of incarceration were used instead of commitment. This period where only a few states had draconian legislation in regard to sex offenses was short lived as a new sex crime wave sparked another public panic.

The Third Wave of Public Panic: “Stranger-Danger” of the 1980s and 1990s

The highly publicized kidnapping and murder of Adam Walsh and the McMartin trial in the 1980s ignited a new public frenzy about sex offenders. Media outlets portrayed many offenders as members of satanic cults or pedophile groups (Jenkins, 1998; Lave, 2009). These media stories sparked a resurgence of belief in child sex abuse occurring outside of the home with caretakers and teachers as questionable persons. The fear kidnappers were lurking in bushes was overpowering the fact that non-custodial parents were most likely committing such acts (Lave, 2009; Terry, 2006). Research has shown family members, acquaintances, friends, and other trusted adults commit the majority of sex offenses, yet the media coverage of “stranger-danger” continued to alter the public’s perception of sex offenders (Bedarf, 1995; Bureau of Justice Statistics, 2000/2003/2012; Lave, 2009; Levenson & Cotter, 2005; Levenson, et al., 2007; Terry, 2006).

The increase in media attention given to children murdered during a sex crime heavily influenced the public. In the late 1980s, two child molesters in Washington, Wesley Alan Dodd and Earl Shriner, were both released for serving their time. Each had committed violent acts against young boys. Both men had served determinate sentences,

thus Washington could not enforce incapacitation or monitor their whereabouts (Terry & Ackerman, 2009). While Dodd later was executed, Shriner's case prompted the enactment of "The Community Protection Act of 1990," containing fourteen provisions to protect society from Sexually Violent Predators (SVPs) (Lave, 2009; Logan, 2008; Pratt, 1998; Terry & Ackerman, 2009; Velázquez, 2008). This law's main component was the indefinite commitment of SVPs once their determinate prison sentence was completed (Birgden & Cucolo, 2011; Cohen & Jeglic, 2007; Lave, 2009; Terry & Ackerman, 2009). The significant difference between the SVP laws of the 1990s and the sexual psychopath laws was the supplement of civil commitment. To clarify, individuals were not sent immediately to a psychiatric facility, but first served their sentence in prison and then were committed civilly to an institution. This new legislation was to prevent a dangerous individual from being released back into society after serving a prison sentence.

The law in Washington also included a system of registration and notification. Other states followed suit and so began an emergence of personalized legislation, laws in memory of children who were abducted, sexually assaulted, and/or murdered. Congress in 1994 passed the Violent Crime Control and Law Enforcement Act. The Jacob Wetterling Act of 1994 was the first federal law intended to prevent sexual offending. This act required the registration of individuals who were convicted of a criminal offense against minors or those convicted of a sexually violent offense.

This federal law was designed as an investigative tool, assisting various law enforcement agencies with a convicted sex offenders list to enhance response times when a sexual crime was committed near areas these individuals reside (Williams-Taylor,

2012). Each state varied in their data collection and responsibility for maintaining the databases (Tewksbury, 2005; Williams-Taylor, 2012). A current address must be on file with a “designated State law enforcement agency” and any change in address must be presented within 10 days (Public Law 103-122, 1994, p. 243). Annually, verification forms are sent to convicted sexual offenders confirming their current address, which the offenders must sign and return within 10 days of receipt (Public Law 103-122, 1994). Minimum registration duration of 10 years is required for individuals convicted of a crime against a minor or a sexually violent offense (Public Law 103-122, 1994, p. 243). Sexual offenses considered more violent may require lifetime registration (Tewksbury, 2005).

In addition, fingerprints and a photograph of the convicted offender must be obtained. Most states typically require date of birth, criminal history, social security number, employment, and vehicle information, while twenty-two states collect DNA such as blood samples (Matson & Lieb, 1996; Williams-Taylor, 2012). States that failed to implement a registration program would receive a 10% reduction in funds for crime control allocated under the Omnibus Crime Control and Safe Streets Act of 1968 (Public Law 103-122, 1994). While the law required registration and encouraged community notification policies, it did not require public disclosure of the information pertaining to each individual (Levenson & Cotter, 2005; Logan, 2008; Lynch, 2002; Tewksbury & Mustaine, 2008; Velázquez, 2008; Williams-Taylor, 2012; Zgoba, Veysey, & Dalessandro, 2010).

In January 1996 the Jacob Wetterling Act was amended, expanding a federal version of Megan’s Law. States were now required to release information about

convicted sex offenders to the public (Public law 104-145, 1996). The establishment of a Registration and Community Notification Law (RCNL) was requested from each state. The goal of RCNLs was to raise awareness and protect individuals from sexual victimization (Terry, 2011). Each state was mandated to disclose information about convicted sex offenders to the public. Methods of disclosure varied by state, with the inclusion of community meetings, flyers, door-to-door notification, and sex offender status signs (Levenson, 2003; Matson & Lieb, 1996; Williams-Taylor, 2012). Many states provide an internet website listing convicted sexual offenders and their current addresses. These websites often are maintained either by local law enforcement agencies or the State's Department of Corrections.

Cohen and Jeglic (2007) described four models which disclose information about convicted sex offenders to the public. The most commonly used model is the active agency notification. This model includes a three-tiered system, specifying the level of dangerousness of the convicted sex offender. Tier 1 offenders are the lowest risk to the community with individuals completing some form of treatment and their crime did not demonstrate predatory behavior. Tier 2 offenders have a higher level of risk classified as moderate, with the assumption they more likely will reoffend. Tier 3 offenders are the highest risk to the community and usually commit more serious sexual offenses. Dependent upon which tier convicted sex offenders are classified will determine how long they must continue to register. States vary in the length of time for mandatory registration; however, Tier 3 offenders usually must register for life. Approximately twenty-five states use a classification system where level of risk to the community is relevant in what information is disclosed (Levenson et al., 2007). Some states disclose

information to the public without any assessment of risk (Levenson et al., 2007; Matson & Lieb, 1996).

In the same year the Jacob Wetterling Act was amended (1996), the Pam Lychner Sexual Offender Tracking and Identification Act of 1996 was signed into law to establish an FBI database creating a national collection of information for all convicted sex offenders (Public Law 104-236, 1996). This was the first law that attempted to unify state statutes regarding sex offenders (Terry & Ackerman, 2009). The goal was to strengthen registration of convicted sex offenders by enforcing more stringent requirements such as lifetime registration for specific offenders on a national level and more detailed registration requirements for convicted sex offenders who are eligible to move across state lines (Lynch, 2002).

The Millennium: A Continuation of Stringent “Stranger-Danger” Sex Offender Policy

Another child abduction, sexual assault, and murder case paved the way for new legislation. In February 2005, nine-year-old Jessica Lunsford was abducted, raped, and murdered by John Couey, a convicted sex offender in Florida (Terry & Ackerman, 2009). Couey’s address was not current with the state agencies in Florida; thus, the Jessica Lunsford Act (2005) was formed to amend the Jacob Wetterling Act. This act amended the yearly verification form sent to convicted sex offenders and required a semi-annual verification form procedure (H.R. 1505, 2005). In addition, convicted sex offenders who repeatedly failed to register were required to wear electronic monitoring devices for better tracking purposes. States were given one year to comply with the newly amended requirements before a sanction of cutting 10% of funds (H.R. 1505, 2005). The act was

introduced at the federal level, but was never enacted into law; however, at least twenty-five states, including Alabama and Oklahoma have enacted state law in relation to this act. Alabama, through statutes §13A-5-6; §15-20-21; and §15-20-26.1 require a twenty-year minimum sentence for felony sex offenses involving a child under age twelve when a deadly weapon was used. Further, these sanctions could occur with various criminal sex offenses listed in §15-20-21. These offenses include, but are not limited to: kidnapping, enticement, and sexual abuse (National Conference of State Legislatures, 2008).

Oklahoma, through statutes 22 §991a; 10 §7115; and 21 §1021 require a twenty-five year to life mandatory minimum sentence for any sex related crime against a minor under twelve, including but not limited to child pornography, sexual abuse and/or exploitation by a parent, and any sexual battery or lewd acts with a minor under sixteen (National Conference of State Legislatures, 2008).

One year later to recognize the 25th anniversary of Adam Walsh's abduction and murder, the Adam Walsh Child Protection and Safety Act of 2006 was established. Through this act, Congress established a comprehensive national system for the registration of convicted sex offenders. The symbolic legislation was in memoriam for seventeen children who were abducted and/or murdered by convicted sex offenders who were strangers to the victims (Public Law 109-248, 2006). All of these cases received extensive media coverage. The goal was to incorporate a national classification system of sex offenders; therefore, each state was required to have a three-tiered system establishing the level of risk per offender. The federal statute required Tier 3 offenders (the most serious tier) to update their information every three months with the requirement for lifetime registration (Public Law 109-248, 2006). Tier 2 offenders were

required to update their information every six months and to register for twenty-five years, while Tier 1 offenders needed to update their information every year and register for fifteen years once released from prison (Public Law 109-248, 2006). An expansion of “specified offense against a minor” included all offenses by child predators and a national requirement for states to penalize convicted sex offenders for failure of compliance was established (Public Law 109-248, 2006, p.592). Failure to register and update information as required per tier results in a felony crime (Public Law 109-248, 2006).

The Adam Walsh Act also created a national sex offender registry where each state was required to provide identical criteria for information disclosed on the internet (Public Law 109-248, 2006). Information such as the convicted sex offender’s name, date of birth, address, photograph, and place of employment was required from each individual registered. A national database utilizing global positioning system (GPS) technology with DNA evidence also was established (Public Law 109-248, 2006). In addition, the act required sex offender treatment and management in prison facilities as well as non-residential sex offender management programs to continue during pre-release custody (Public Law 109-248, 2006). The goal was to close any gaps in previous legislation pertaining to registration and notification of sex offenders and to provide the public with more information about all convicted sex offenders, not only those deemed extremely violent.

The act also expanded the kidnapping statute and mandatory minimum terms while authorizing random searches as part of sex offender probation and supervised release (Public Law 109-248, 2006). A federal civil commitment provision was established to civilly commit any person in custody deemed sexually dangerous in a

federal facility (Public Law 109-248, 2006). The civil commitment regulations were similar to previous legislation in the late 1930s and early 1940s. Individuals who engaged or attempted to engage in violent sexual behavior, suffer from a serious mental illness or disorder, and who were deemed as having difficulty refraining from violent sexual behavior if released may be civilly committed if they were in custody of the Federal Bureau of Prisons (Public Law 109-248, 2006).

Previous literature since 2000 has examined Sex Offender Registry and Notification laws (SORN) by using methods such as time-series analysis; interviews and surveys with convicted sex offenders, legislators, and communities; pre-and post-studies to assess recidivism rates; comparison analysis of sex offenders and other offenders; exploratory analysis; comparisons of sex offenders subjected to community notification requirements versus those not; spatial analysis; and a meta-analysis of sex offender recidivism research (Duwe & Donnay, 2008; Freeman, 2012; Grubestic, Mack, & Murray, 2007; Harris & Lobanov-Rostovsky, 2010; Letourneau, Levenson, Bandyopadhyay, Armstrong, & Sinha, 2010; Mercado, Alvarez, & Levenson 2008; Miethe, Olson, & Mitchell, 2006; Sample & Kadleck, 2008; Sandler, Freeman, & Socia, 2008; Vásquez, Maddan, & Walker, 2008; Veysey & Zgoba, 2010; Veysey, Zgoba, & Dalessandro, 2008; Zgoba et al., 2010). Overall, the majority of these studies have found sex offender policies to be ineffective. One of the main objectives of SORN legislation was to reduce recidivism of sex offenders; however, research has shown sex offenders have a lower recidivism rate than most crimes and this rate stays the same both pre-SORN and post-SORN (Hanson & Morton-Bourgon, 2005; Miethe et al., 2006; Sample & Bray, 2003; Tewksbury & Jennings, 2010). In addition, when sex offenders do recidivate they

typically commit non-sexual crimes (Bureau of Justice Statistics, 2000/2003/2012; Hanson & Morton-Bourgon, 2005; Sample & Bray, 2003; Velázquez, 2008). Sample and Bray (2006) found sex offenders whose crimes were against children were less likely to recidivate than sex offenders whose crimes were against adults. This finding is particularly significant because SORN legislation usually is directed to protect children.

In an examination of the Adam Walsh Act implemented in New York, Freeman and Sandler (2010) found Tier 1 sex offenders were rearrested faster for both sexual and nonsexual offenses than Tier 2 and Tier 3 sex offenders; therefore the argument of sex offender registry and notification acts (SORNA) may promote a false sense of safety within the community. Tier 1 sex offenders are less likely to be on the registration and notification list; however, these individuals are recidivating at a steady rate. When comparing sex offender re-arrest rates in New York for individuals required to use community notification versus those not, Freeman (2012) found re-arrests for a sexual offense was twice as quick for those subjected to community notification. In addition, those needed to oblige by SORNA were re-arrested 47% more for non-sexual crimes than sex offenders not required to use SORNA. In contrast to Freeman and Sandler's (2010) research, Freeman (2012) found Level 3 sex offenders were re-arrested at a faster rate than Level 1 and Level 2 sex offenders.

Assessing the effectiveness of Megan's Law, Clevenger (2012) found an increase in reported suburban and rural rape and other sex offenses, reported urban sex offenses, as well as the reported rape of individuals both under the age of eighteen and over the age of eighteen after Megan's Law was implemented. The use of a time-series analysis comparing non-equivalent dependent variables indicated reported sexual offenses in

Pennsylvania to be increasing, which lead Clevenger to suggest that Megan's Law appears ineffective, at least in the state of Pennsylvania as a means of reducing sexual offending.

Although Clevenger's findings mirror those of previous research, these findings continue to be ignored by legislators, the public, and policy makers. The fear that convicted sex offenders may be living next door or lurking in the bushes continues to cause a moral panic and the demand for an increase in punitive sex offender policies. As shown by their names, sex offender policies memorialize children who were violently assaulted and/or murdered by strangers. The constant media attention exacerbated the inaccuracies pertaining to sex offenders and their victims, which in turn created policy based on emotion, not fact (Carpenter, 2010; Duwe & Donney, 2008; Jones, 1999; Sample, 2011; Terry, 2011).

The stranger-danger notion became commonplace and public ideology continues to manifest from sensationalized news stories. Since the 1930s, research has shown the majority of sex offenders knew their victims and sex offender recidivism rates often are lower than those for other crimes (Cohen & Jeglic, 2007; Hudson, Jr., 2009; Jenkins, 1998; LaFond & Winick, 1998; Lave, 2009; Sutherland, 1950a; 1950b; Tappan, 1950; Terry, 2006; Terry & Ackerman, 2009; Williams-Taylor, 2012); however, stringent sex offender policies continue to grow. Residency restrictions are the latest attempt, according to public interest, to protect children from sexual psychopaths lurking in the darkness.

Residency Restrictions: The Latest Policy Prevention Against Sex Offenders

Beginning with Florida in 1995, states began to enact sex offender residency restrictions. Requirements were specified for convicted sex offenders to live in accordance with radiuses (buffer zones) and away from areas children tend to congregate (schools, daycare centers, playgrounds, bus stops). Although the new legislation lacked assessment about effectiveness, it began to expand throughout the United States.

By 2005, Alabama and Oklahoma, along with twelve other states had followed Florida's lead by enacting residency restriction requirements (Levenson, 2009). A public outcry, fueled by the media, led to legislation that increased the targeting of convicted sex offenders (Meloy et al., 2008). Even though reported sex crimes were in decline since the 1980s (Federal Bureau of Investigation, 2007), public ideology toward sex offenders has remained the same: get tough on crime and continue to target convicted sex offenders released in the community (Jenkins, 1998; Mears, Mancini, Gertz, & Bratton, 2008).

Quinn, Forsyth, and Mullen-Quinn (2004) found the American public is highly uneducated in terms of the realities of sex offenders and their crimes. The authors identified media as a main component of this misperception and lack of understanding. Shows like *America's Most Wanted* created by John Walsh (father of Adam) and *To Catch a Predator* continuously displayed images of sexual predators, individuals important to be informed about; however, these television productions (designed to generate revenue and not necessarily just a public service announcement) were geared toward capturing the viewing audience's attention through detailing these extreme, yet rarely occurring sex offending cases. Media accounts of sensationalized stories of "stranger-danger" continued to further reiterate the public's perception of the "true sex

offender.” In addition, public pressure and demand forced politicians and policy makers to quickly enact legislation, even though the facts were not matching the public’s emotions and opinions (Jenkins, 1998; Sample & Kadleck, 2008; Vess, 2009). In turn, residency restrictions began to expand throughout the United States.

Arguments for and against residency restrictions have made their way to the courts. In the case of *Doe v. Miller* (2005), plaintiffs argued residency restrictions in Iowa infringed on their Fourteenth Amendment rights to due process by taking away fundamental rights to live where one wants to along with the ability to travel (Hudson, Jr., 2009; Nieto & Jung, 2006). The plaintiffs further argued no scientific study supports residency restrictions. The Eighth Circuit Court found distance marker residency restrictions do not infringe upon the right to travel and simply restrict a convicted sex offender from residing near a school, not to enter the area near a school if needed. The court argued residency restrictions were not a form of banishment because of the grandfather provision; which allowed convicted sex offenders to stay in their residence, even if within the required buffer zones, if the offender lived there prior to July 1, 2002 (*Doe v. Miller*, 2005). Constitutional challenges against residency restrictions in Ohio, Illinois, and Iowa all have proven to be ineffective as the restrictions were constitutionally upheld.

Previous Research on Residency Restrictions

The research about residency restrictions is abundant, including studies focusing on spatial analysis, analysis of laws, qualitative analysis, geographic information systems, and geocoding (Barnes, 2011; Berenson & Appelbaum, 2011; Bonner-Kidd, 2010; Burchfield, 2011; Durling, 2006; Geraghty, 2007; Grubestic & Murray, 2008; Hughes &

Burchfield, 2008; Levenson & Hern, 2007; Logan, 2006; Mancini et al., 2013; Meloy et al., 2008; Merriam & Salkin, 2008; Red Bird, 2009; Socia, 2011a; Socia 2011b; Socia, 2012; White, 2008; Youstin & Nobles, 2009; Yung, 2007; Zandbergen & Hart, 2006; Zandbergen & Hart, 2009; Zgoba et al., 2009; Zlatkovich, 2009). These studies have included such states as Minnesota, Florida, Georgia, Illinois, South Carolina, New York, Ohio, and various others; however, none have examined Alabama or Oklahoma. Additionally, none of these studies have used an interrupted time-series analysis design comparing two states over the same time periods to examine the legal impact of residency restrictions.

Current Study

The current study utilized an interrupted time-series design which best suits research on legal impact studies. This method has been used in several studies about the impact of various laws and policies. Figlio (1995), Hilton (1984), Hingson, Heeran, Kovenock, Mangione, Myers, Morelock, Lederman, & Scotch (1987), Lewis (2009), and Ross, McCleary, & Epperlein (1981) all employed an interrupted time-series analysis to examine various drinking-driving laws, while Campbell & Ross (1968) evaluated the issue of speeding in Connecticut. These studies showed either a slight impact from legislation with a temporary change or no impact suggesting the policies were not working as intended. Gun control legislation also has been examined successfully using an interrupted time-series designs (Britt, Kleck, & Bordua, 1996; Carrington & Moyer, 1994; Loftin, McDowall, Wiersema & Cottey, 1991; Webster, Vernick, & Hepburn, 2002; Zimring, 1975) as well as three strikes laws (Ramirez & Crano, 2003) and juvenile curfew laws (Reynolds, Seydlitz, & Jenkins, 2000). Most important to this particular

study, the use of interrupted time-series design has been successfully implemented in the evaluation of registration and notification laws (Sandler et al., 2008) as well as a legal impact study on Megan's Law in Pennsylvania (Clevenger, 2012). Past research employing this statistical design in a productive manner has provided detailed information about the effectiveness of legislation.

To date, there has not been an examination and comparison of two states in terms of residency restrictions and their legal impact. Alabama and Oklahoma both incorporate a more stringent buffer zone (2,000 feet) and neither state has been compared to each other or thoroughly examined on their own. According to Yung (2007), Alabama enacted residency restriction policies after Bill O'Reilly stated in an episode (July 2005) Alabama was a state that "did not care about sex offenders" (p. 21). One week later, Alabama Governor Bob Riley summoned a special session to debate Alabama's sex offender laws. This meeting concluded in additional changes in residency restriction legislation for convicted sex offenders. As stated previously, this is an example of how media shapes both politics and ideology. Research and legislation have not specifically identified reasons as to why Oklahoma incorporated residency restriction policies. After an extensive search of various Oklahoma Department of Corrections websites, it was shown the state takes sex offender registration quite seriously. Nieto and Jung (2006) discussed Oklahoma as one of the few states enacting the death penalty to repeat child molesters for individuals committing acts of more than one rape against children fourteen and under. This act also includes other sex crimes. The more punitive methods used in Oklahoma could be a reason as to why this state enacted such legislature; however, the reasons remain unknown.

Alabama and Oklahoma residency restrictions laws are similar to each other in more ways than one. Typically there are two categories of residency restriction laws: child safety zones and distance markers. Child safety zones involve areas where children tend to congregate and convicted sex offenders may not loiter in these areas which include schools, childcare centers, amusement parks, school bus stops, video arcades, and playgrounds (Nieto & Jung, 2006). Distance markers are more common and restrict convicted sex offenders from residing within a certain proximity to designated places where children are more likely to congregate. Alabama and Oklahoma follow the distance marker legislation.

It would appear sex offender legislation is not grounded in empirical validity. Research indicates sex offenders have a lower recidivism rate than assumed. In addition, previous sex offender legislation, although having a feel good effect for the public, was ineffective in reducing sexual offending primarily in that the legislation targets strangers, instead of those with closer ties to the victim. Spatial analysis and review of the laws have shown the inadequacies associated with residence restrictions; however, there is a need for the examination of this legislation with two states, similar in demographics, to assess whether effectiveness of the policy exists. This current study examined the legal impact of residency restrictions in Alabama and Oklahoma and further contributes to the debate about the effectiveness of sex offender residency restrictions. By examining two states with stringent buffer zones, similar in demographics and policy, data offered an insight as to whether residency restrictions in these two states continue to protect or further provide a false sense of security and hope with regard to sex offender crimes.

CHAPTER III

METHODOLOGY

The goal of this research was to assess the impact of residency restriction laws in Alabama and Oklahoma. Implementation of residency restrictions in both states was tested to determine whether a reduction of sexual offenses (reported rapes) had occurred. In order to test efficacy of residency restrictions in both states, an interrupted time-series (ITS) design was employed. ITS designs have been utilized by multiple disciplines (e.g., psychology, political science, and other social sciences) to assess the impact of various policies and laws (McDowall, McCleary, Meidinger, & Hay, Jr., 1980; Shadish et al., 2002). Examinations of speeding laws (Campbell & Ross, 1968), gun control policies and laws (Britt et al., 1996; Carrington & Moyer, 1994; Loftin et al., 1991; Webster et al., 2002; Zimring, 1975), three strikes laws (Ramirez & Crano, 2006) spousal abuse policies (Tilden & Shepherd, 1987), juvenile curfew laws (Reynolds et al., 2000), drunk-driving laws (Figlio, 1995; Hilton, 1984; Hingson et al., 1987; Ross et al., 1981), Pennsylvania's and Ohio's zero-tolerance juvenile drunk driving laws (Lewis, 2009) and the effectiveness of Pennsylvania's Megan's Law (Clevenger, 2012) are examples of research which successfully incorporated ITS designs.

The current study employed two ITS designs encompassing eight models to study the impact of residency restriction laws and their impact on reported rapes in Alabama and Oklahoma. Monthly data were gathered from 1984-2012 for analysis. An additional, more elaborate ITS design (nonequivalent no treatment control group) was modeled using a dependent variable (robbery), which should not be impacted by the residency restriction implementation. Utilizing multiple ITS designs and models enhances the

research by controlling for various threats to validity which will be discussed later in this chapter.

With the research goal identified (impact of Alabama and Oklahoma residency restriction requirements as related to reported rape reduction) this chapter will describe the methods selected. First, the study's independent and dependent variables are identified. Conceptual and operational definitions of each variable are offered to provide a better understanding of how each variable was defined and measured. Next, the data utilized for this study are discussed along with the data sources and justification for selected states. This chapter continues with a description of the ITS designs and models selected to assess the impact of various laws, along with a discussion about the impacts that could be anticipated from implementation of new laws and policies, ranging from no impact to an abrupt, permanent, and immediate impact on either the slope or the level of offending (see Appendix A). The two ITS designs used in this study (simple and nonequivalent no-treatment control group) are diagrammed, discussed in relation to specific interruption dates for each model, and validity threats are addressed for each design in relation to statistical conclusion, internal, construct, and external validity (Shadish et al., 2002). The final areas addressed prior to summation are the strengths and limitations of the study.

Study Design

Independent Variable

According to Shadish et al. (2002), an interrupted time-series design assesses the impact from treatment which in this case is the legislation of sex offender residency restrictions in both Alabama and Oklahoma. An important criteria for an ITS design is utilizing an independent variable which will change suddenly at a specific time (Ross,

1982). For this study the four independent variables were the two dates Megan's Law was enforceable in Alabama and Oklahoma and the two dates the residency restriction laws were enforceable in Alabama and Oklahoma. If these laws had a statistically significant impact causing either a change in the slope or level from monthly pre-treatment observations to monthly post-treatment observations, the impact should be observed visually and quantified through statistical analysis (McDowall et al., 1980; Shadish et al., 2002).

The original date of enactment for Alabama's Community Notification Act (May 1, 1996) served as the first independent variable and the original date of enactment for Oklahoma's Sex Offender Registration Act (November 1, 1997) served as a second independent variable. The revised legislation of Alabama's Community Notification Act (October 1, 2005) served as a third independent variable and the revised and superseded legislation of Oklahoma's Sex Offender Registration Act (November 1, 2003) served as a fourth independent variable. By examining the original enactment dates for both states, a legal impact assessment can be made for these laws.

Dependent Variable

Ross (1982) identified the second criterion for using ITS designs was a set of dependent variables that need to be measured reliably over time and should react to the enactment of the law or policy. Based on available data, the dependent variable for the current study was monthly rape arrest rates for both Alabama and Oklahoma. This offense was selected for several reasons. First, both Alabama and Oklahoma define rape in a similar manner and include rape in the first and second degree. Second, the crime of rape cannot be disputed in terms of falling under a sexual offense category. In both states, the legislation presents a list of what is considered applicable in terms of a sexual offense.

Rape is listed as applicable in accordance with both acts. Murder/homicide as a category does not necessarily constitute a sexual offense and would therefore not contribute to specifically looking at a sexual act. The focus would be on murder of an individual, which is not necessarily the case in rape crimes. This holds true for aggravated assault as well. Aggravated assaults may not include any sexual crime. Therefore, rape seemed to fit appropriately for this research.

One nonequivalent dependent variable was utilized for this research; monthly robbery arrest rates for Alabama and Oklahoma. A nonequivalent dependent variable is a variable selected for the research that is predicted not to be effected by the assigned treatment, in this case, enforcement of Megan's Law and the enforcement of residency restriction laws (Shadish et. al, 2002). In selecting a nonequivalent dependent variable an offense should be equivalent in nature to the primary dependent variable used in the study, but one also that should not react to changes involving sexual offending laws. The nonequivalent dependent variable, monthly robbery arrest rates, should react to changes in enforcement for UCR I offense categories as would monthly rape arrest rates, but it should not react to laws implemented related only to sexual offenses, which enhances internal validity. A situation where a statistically significant decrease in monthly rape arrest rates is indicated; however, there is no statistically significant change in monthly robbery arrest rates would permit a more valid assessment that the legislation had a treatment effect and was at least part of the cause in changing the level or slope of the dependent variable.

It was anticipated the dependent variable monthly rape arrest rates would react significantly to changes in the law related to Megan's Law and residency restriction

requirements, where the offense of monthly robbery arrest rates would not be impacted by these laws. Both these variables would be impacted by aggressive enforcement of all laws related to violations of UCR Part I offending against individuals (e.g. Homicide, Rape, Robbery, and Aggravated Assault).

Conceptual Definitions

Effectiveness, for the current study, was defined as a statistically significant decline in monthly rape arrest rates in both Alabama and Oklahoma after the original legislation and revised legislation were enacted. A *sex offender* was defined in this study as an adult who has been arrested for the crime of rape. The dependent variable of rape was defined by both the Alabama and Oklahoma Uniform Crime Reports (UCR).

According to Alabama's UCR, *rape* is defined as "the carnal knowledge of a female through force or the threat of force, includes attempts" (Alabama Criminal Justice Information Center, 2012, p. 21). This definition has not changed from 1984-2012. In 2012, the Federal Bureau of Investigation's (FBI's) UCR expanded the definition of rape to include male and female victims as well as other forms of sexual assault; however the monthly data of 2012 was not affected by this change. The new implementation of the definition will mostly likely begin in Alabama's 2013 UCR; therefore, the data examined for this study only included rape of a female.

Oklahoma's UCR defines *rape* as "the carnal knowledge of a female forcibly and against her will, regardless of age. Statutory rape is not included in this category" (Oklahoma State Bureau of Investigation, 2012, p. 3-9). This definition has remained the same from 1984-2012 and was utilized for this study in terms of Oklahoma data. As in the case of Alabama, only rape of a female was included in this study.

The nonequivalent dependent variable included in this study is robbery. The goal was to see whether residency restrictions in Alabama and Oklahoma are effective in reducing rape. Therefore, if the law is effective the statistics will indicate a reduction in rape and no change in the nonequivalent dependent variable. Robbery was selected because it does not involve the act of rape or any type of sexual offense in both state definitions. Robbery is designated as a Part I Index violent crime according to the FBI, thus categorized in the same index as rape, and considered a more serious crime than those listed in the Part II index. In addition, robbery was selected over other Part I Index crimes such as aggravated assault because the crime of aggravated assault combines both sexual and physical assaults. The UCR does not separate between these two types of crime under aggravated assault and therefore the data would include both, thus making this research unable to truly separate or tease out non-sexual crimes with sexual crimes. Most states, including Alabama and Oklahoma include arrests rates for rape of males as an aggravated assault, adding additional support why robbery makes for a better nonequivalent dependent variable. This specific variable needs to have no connection to sexual crimes and it would be impossible to tease out crimes of a sexual nature in the monthly arrest rate data of aggravated assault.

Alabama's UCR definition of *robbery* is the "stealing or taking anything of value from the care, custody, or control of a person, in his presence, by force or threat of force, includes attempts" (Alabama Criminal Justice Information Center, 2012, p. 24). Robbery is broken down into seven categories: highway--in which robbery occurs on streets, in alleys, or outside of a structure; commercial house--in which robbery occur in motels, lodging houses, hotels, etc.; gas or service stations--in which the robbery occurs in places

where gas or similar products are sold; convenience stores--where robbery occurs in stores located in neighborhoods selling items for consumption; residence—where the robbery would occur in a dwelling or on the premises of a dwelling; banking establishments--in which robbery occurs in credit unions, banks, and savings and loans, etc.; and miscellaneous--where the robbery occurs in schools, government buildings, temples, churches, union halls, public transit systems, etc.(Alabama Criminal Justice Information Center, 2012).

Oklahoma’s UCR defines *robbery* as “The felonious and forcible taking of property from the care, custody, or control of a person or persons by violence or putting the person in fear and against his/her will” (Oklahoma State Bureau of Investigation, 2012, p. 3-11). This definition also includes attempts. Unlike Alabama, Oklahoma does not define seven categories of robbery; however, Oklahoma does divide robbery as reported under four categories by weapon: “gun, knife or cutting instrument, other dangerous weapon, and strong-arm robbery” (Oklahoma State Bureau of Investigation, 2012, p. 3-11). In addition, the state of Oklahoma requires a victim present for the crime of robbery to take place (Oklahoma State Bureau of Investigation, 2012). For the purposes of this study, both state definitions were employed when examining the data.

Operational Definitions

Operationalizing definitions is the process of transforming an abstract or conceptual meaning to an empirical measurement (Maxfield & Babbie, 2008). For the purposes of this study, the operationalization of *effectiveness* was the change in the dependent variable (rape arrest rates) between the pre-and post-observations. The implementation of residency restrictions in both Alabama and Oklahoma were operationalized as the specific point in time when the original residency restrictions in

Alabama and Oklahoma were enforced as well as when the revised legislation was enacted. The dependent variable, *rape*, was operationalized as the arrest rates in monthly data from both Alabama and Oklahoma between 1984 and 2012. The nonequivalent dependent variable *robbery* was operationalized in the same manner as the dependent variable of *rape*.

Data Utilized in the Study

Both Alabama and Oklahoma served as units of analysis for this current study. To examine the effectiveness of residency restrictions in both Alabama and Oklahoma, data were collected from the Alabama Criminal Justice Information Center and the Oklahoma State Bureau of Investigation. These two sources provide all state crime data per Part 1 Index and Part 2 Index crime offenses as categorized by the Federal Bureau of Investigation (FBI). The data for this study were collected from the years of 1984-2012. For Alabama, all yearly and monthly reports can be found online through their website. Alabama's data dates back to 1977. Oklahoma's website only contains data for 2000-2012 online. Oklahoma was contacted to gain access to archival data through their freedom of information act. Oklahoma's data analysts were able to generate data from January 1984-December 1999; thus, January 1984 was selected as a starting point for this research. Starting in 1984 is not problematic for assessing monthly data as only 50 pre-treatment observations are required for the statistical analysis.

The number of offenses for both rape and robbery were obtained from the Oklahoma State Bureau of Investigation and the Alabama Criminal Justice Information Center in a monthly format. The data were in the form of cases reported, but did not account for increases or decreases in state population over the almost 30 year time frame covered by the data. To account for population fluctuation the data were divided by the

adult population for the specific state per year and then multiplied by 100,000 to obtain the rate of offense per 100,000 adult state residents. The use of 100,000 per adult offenses of rape and robbery did not eliminate the decimal needed for translating raw data, thus the divided adult population was multiplied by 1,000,000 to remove the decimal and have the rate of offense per 1,000,000 state adults.

Why Alabama and Oklahoma?

The examination of residency restrictions in more than one state will strengthen the assumptions of whether the legislation has an impact. There also was a need to compare two states to control for plausible threats to validity. Alabama and Oklahoma were selected for various reasons. First, both states incorporate the same distance for buffer zones in their residency restriction legislation. Each state has a 2,000 feet radius where sex offenders are not allowed to live within areas containing schools, parks, playgrounds, and daycare centers. In addition, both state laws follow distance markers, which designate a certain proximity in which convicted sex offenders may not reside in places where children are more likely to congregate.

Another reason was due to similarities in demographics. Alabama's population in 1984 was four million, with a steady increase to 4.8 million in 2012. Oklahoma's population was 3.3 million in 1984, with a steady increase to 3.8 million in 2012. Their population totals were not largely disparate. Comparing a state with 14 million to 4 million would not be as reliable and valid as two states with similar population numbers. In addition, percentages for persons in each state's population under five years of age, less than eighteen years of age, and sixty-five years old and over were almost identical in both states. The same can be said for the female population in both states. Alabama has maintained about a 51% female population, while Oklahoma has maintained about a

50.5% male population. This is relevant in terms of the dependent variable of rape where females are only included as victims in both states. The breakdown of ethnicity also is similar as 75.5% of the state population in Oklahoma is white and 70% of the state population in Alabama is white.

In addition, both states were selected because the literature did not indicate that residency restriction implementations in either state were assessed. Moreover, the literature has not discussed comparing two states at the same time to assess the effectiveness of residency restriction legislation using the implementation dates for each state as a validity check point for the other.

Interrupted Time-Series (ITS) Design

$O_1 \quad O_2 \dots O_{77} \quad O_{78} \quad O_{79} \quad X \quad O_{80} \quad O_{81} \quad O_{82} \quad O_{83} \quad O_{84} \dots O_{168}$

ITS Concept

To examine both the impact of Megan's Law and the impact of residency restrictions in Alabama and Oklahoma, simple ITS designs were utilized. A simple ITS design requires a single treatment group with various observations before treatment (pre) and after treatment (post) (Shadish et al., 2002). Examining the treatment (independent variable) throughout time provides the ability to test the impact the treatment may or may not have on the dependent variable (arrest rate). Throughout the time line, the treatment acts as an interruption at a specific point.

Knowledge of the exact date in which the law was enforceable is essential to this type of design. This specific date becomes the independent variable, known as the treatment and characterized by X (Shadish et al., 2002). The dependent variable is observations (O) throughout the time period assessed, which was spaced in this current

study by month. O_t represents the observations based on equally spaced periods of time (month), which occur both before and after the interruption or treatment (X) has occurred. The treatment for this current study was the exact dates Megan's Law and residency restrictions were enforceable in both Alabama and Oklahoma. The null hypothesis was the treatment will not have an impact on the trend established pre-treatment (e.g. $O_1...O_{79}$). A rejection of the null hypothesis would indicate any statistically significant changes in reported offense rates could be attributed to the treatments (Megan's Law or residency restrictions in Alabama and Oklahoma).

This research assessed the legal impact of both Megan's Law and residency restrictions in Alabama and Oklahoma through two ITS designs and eight models. In using ITS designs, pre-treatment observations are used to forecast a post-treatment trend. This forecasted trend modeled from the pre-treatment observations is termed the "counterfactual." Mohr (1988) stated "The counterfactual is a projection of the correctly modeled before series into the time periods occurring after the intervention point" (p. 147). Therefore, the counterfactual provides a forecast for the future based on past performance and the assumption of no external interruptions of the projected trends. A statistical analysis is conducted to determine if the counterfactual (what was predicted to occur) is statistically significant from what did occur once the law is enacted. These differences, if observed, could be the result of the enactment of legislation.

A visual inspection of the data around the interruption point can identify certain changes in the slope or intercept, but a statistical analysis should be used to determine the strength of the change over time. A regression analyses (either Ordinary Least Squares regression [OLS] or Autoregressive Integrated Moving Average [ARIMA]) can be used.

Although OLS would be the preferred (and easier) statistical procedure, the selection is determined by the presence of auto-correlation in the data.

Auto-correlation indicates a variable's current value is related to the variable's previous monthly value or for longitudinal data there could be a quarterly or annual relationship. Using OLS with auto-correlated data is a violation of the assumptions associated with the statistic, which could severely impact (usually inflate) the slope values generated. Auto-correlation can be detected using the Durbin-Watson score generated by SPSS. Similar to Variable Inflation Factor (VIF) scores, the Durbin Watson score highlights to the researcher that OLS may be inappropriate for the statistical analysis of the data being assessed. A Durbin-Watson score of 1.5 – 2.5 (ideally 2.0) is the range acceptable to use OLS regression. Data outside that range should be assessed using ARIMA as a model can be developed to control for the auto-correlation. The statistical analysis component employed for this study is addressed in Chapter IV.

The first ITS model assessed the impact of Megan's Law (enacted May 1996) on Alabama's reported monthly rape arrests per 1,000,000 adult residents from January 1984 through September 2005. Pre-treatment observations (January 1984 through April 1996) were used to forecast what would have occurred if Megan's Law had not been enacted. This forecast was then compared statistically to what did occur based on the enactment of the law.

The second model for Alabama assessed the impact of the residency restriction law (enacted October 2005) on Alabama's reported monthly rape arrests per 1,000,000 adult residents from May 1996 through December 2012. Pre-treatment observations (May 1996 through September 2005) were used to forecast what would have occurred if the

residency restriction law had not been enacted. This forecast was then compared statistically to what did occur based on the enactment of the law. The same time lines were used to assess the impact of these two laws on Alabama's monthly robbery arrest rates. Therefore, a total of four models were developed for the state of Alabama.

Four models also were developed for Oklahoma using similar ITS designs, but with different dates for enactment. The first ITS model for Oklahoma assessed the impact of Megan's Law (enacted November 1997) on Oklahoma's reported monthly rape arrests per 1,000,000 adult residents from January 1984 through October 2003. The second ITS model for Oklahoma assessed the impact of residency restriction laws (enacted November 2003) on Oklahoma's reported monthly rape arrests per 1,000,000 adult residents from November 1997 through December 2012. In addition, the same time lines were used for testing the nonequivalent dependent variable, monthly robbery arrest rates for Oklahoma.

The ITS design is most appropriate when developing legal impact studies. The pre-treatment period offers insight as to what has happened in the past with the variable of interest and permits a forecast to be generated (counterfactual) of what would be predicted to occur without the new law or policy going into effect. The counterfactual then can be used to determine if there is a statistically significant difference between what actually occurred and what would have been predicted to occur should the law or policy not have been enacted.

ITS Design Overview

As noted, eight separate ITS models were employed to assess the legal impact of Megan's Law and the residency restrictions in Alabama and Oklahoma. One independent variable (i.e., enactment of residency restrictions) with numerous pre-and post-treatment

observations define a simple ITS design. The pre-and post-treatment observations are evenly spaced, providing the ability to model the trends in the data. The importance of a simple ITS design is to have several pre-and post-treatment observations. A small number of pre-and post-treatment observations limit the researcher's ability to visually or statistically identify possible effects caused by seasonal or trend patterns. Shadish et al. (2002) recommend 50 pre-treatment and 50 post-treatment observations as a minimum. The time period covered in this study surpasses those recommendations.

ITS Model 1: Alabama's Megan's Law (Rape Arrest Rates)

O1 O2 ... O147 O148 X O149 O150 O151 O152 ... O260

Alabama's Megan's Law was enacted May 01, 1996 (X). Model 1 has pre-treatment observations from January 1984 through April 1996 (148 monthly observations) and post-treatment observations through September 2005 (112 monthly observations).

ITS Model 2: Alabama's Residency Restrictions (Rape Arrest Rates)

O1 O2 ... O111 O112 X O113 O114 O115 O116 ... O198

Alabama's residency restrictions were enacted October 01, 2005 (X). Model 2 has pre-treatment observations from May 1996 through September 2005 (112 monthly observations) and post-treatment observations through December 2012 (86 monthly observations).

ITS Model 3: Oklahoma's Megan's Law (Rape Arrest Rates)

O1 O2 ... O165 O166 X O167 O168 O169 O170 ... O237

Oklahoma's Megan's Law was enacted November 01, 1997 (X). Model 3 has pre-treatment observations from January 1984 through October 1997 (166 monthly

observations) and post-treatment observations through October 2003 (71 monthly observations).

ITS Model 4: Oklahoma's Residency Restrictions (Rape Arrest Rates)

O1 O2 ... O70 O71 X O72 O73 O74 O75 ... O180

Oklahoma's residency restrictions were enacted November 1, 2003 (X). Model 4 has pre-treatment observations from November 1997 through October 2003 (71 monthly observations) and post-treatment observations through December 2012 (109 monthly observations).

NOTE: Model 5 through model 8 were identical in time lines to models 1 through 4 respectively. The change in the models was replacing the dependent variable rape arrest rates with the dependent variable of robbery arrest rates.

ITS Model 5: Alabama's Megan's Law (Robbery Arrest Rates)

O1 O2 ... O147 O148 X O149 O150 O151 O152 ... O260

Alabama's Megan's Law was enacted May 01, 1996 (X). Model 1 has pre-treatment observations from January 1984 through April 1996 (148 monthly observations) and post-treatment observations through September 2005 (112 monthly observations).

ITS Model 6: Alabama's Residency Restrictions (Robbery Arrest Rates)

O1 O2 ... O111 O112 X O113 O114 O115 O116 ... O198

Alabama's residency restrictions were enacted October 01, 2005 (X). Model 2 has pre-treatment observations from May 1996 through September 2005 (112 monthly observations) and post-treatment observations through December 2012 (86 monthly observations).

ITS Model 7: Oklahoma's Megan's Law (Robbery Arrest Rates)

O1 O2 ... O165 O166 X O167 O168 O169 O170 ... O237

Oklahoma's Megan's Law was enacted November 01, 1997 (X). Model 3 has pre-treatment observations from January 1984 through October 1997 (166 monthly observations) and post-treatment observations through October 2003 (71 monthly observations).

ITS Model 8: Oklahoma's Residency Restrictions (Robbery Arrest Rates)

O1 O2 ... O70 O71 X O72 O73 O74 O75 ... O180

Oklahoma's residency restrictions were enacted November 1, 2003 (X). Model 4 has pre-treatment observations from November 1997 through October 2003 (71 monthly observations) and post-treatment observations through December 2012 (109 monthly observations).

Types of Effects

Plausibly the most important area to assess visually is the period surrounding the point of interruption; basically, the period when the new law was enforceable (Mohr, 1988, Shadish et al., 2002). This location in the time-series design is the point where there will most likely be a change in the slope or the intercept for the model as the new law or policy takes effect. The types of changes in the slope or level are described in three formats: abrupt or gradual at the onset of the treatment; permanent or temporary at the duration of the treatment; and immediate or delayed (immediacy of change) (McDowall et al., 1980; Shadish et al., 2002). An abrupt change of the slope or intercept shows a sharp, typically straight line at the onset of the intervention where the pattern is discontinuous, whereas a gradual change at the onset presents a slower increase or

decrease in the pattern or trend being established. A permanent change in slope or intercept shows whether the intervention had a long-lasting impact or a temporary change, meaning the intervention impact was only short-term, with a return to pre-intervention patterns. An immediate change in slope or intercept at the onset of treatment explains an immediate impact whereas a delayed intervention impact means the impact may occur at a later observation point and not at the onset of treatment (See Appendix A: Types of Effects).

While ITS designs are essential in examining trends throughout the model, it is possible these trends or changes are not always occurring due to treatment. Using ITS designs does not mean threats to validity can be dismissed; and such threats, if present, may cause changes to the dependent variable's slope or intercept, which could be incorrectly attributed to the impact or treatment. Additionally, changes in trends could start prior to the law's enactment, suggesting some other variable is impacting the data.

Threats to Statistical Conclusion Validity

Statistical conclusion validity addresses the main question of whether there is a relationship between two variables. According to Shadish et al. (2002) there are nine potential threats to statistical conclusion validity. After examining these plausible threats, only two appear to be uncontrolled for by the selected research design; unreliability of measures and unreliability of treatment implementation. Using secondary data and those crimes known only to the police cause measurement concerns. Many offenses go unreported and many agencies do not report UCR data; this noted, there is no change identified from 1984-2012 in how law enforcement agencies reported data to Alabama and Oklahoma, nor has the definitions for these crimes changed. Unreliability of

treatment implementation states a treatment may be only partially implemented for some respondents and fully implemented for others. This threat would encompass enforcement and prosecution issues. Although a validity threat, standardized enforcement of laws and prosecution of offenders, especially those related to sexual offending, would be assumed to be relatively uniform.

Threats to Internal Validity

Internal validity examines the causal relationship between two variables. Shadish et al. (2002) identify nine internal validity threats; however, history appears to be the primary internal validity threat to this study. Although unlikely, a major event could occur at the same time Megan's Law or the residency restrictions were implemented in either state. To assess this possibility, both the Alabama and Oklahoma data were assessed for impacts at the point where the laws were enacted in each state. Any federal mandates related to sexual offending should be visually detected in both states. A general increase to enforcement of all UCR I offenses would be detected in the nonequivalent dependent variable of robbery arrest rates.

Threats to Construct Validity

According to Shadish et al. (2002), construct validity involves the capability of making inferences from operationalizations of the constructs (concepts) used to explain those operations. The authors also note using an ITS design enhances construct validity in that the dependent variables often are measured similarly over time (arrest rates) and the interruption point (enactment date for the law) often is well defined. Additionally, visual observations of the data by months offer the researcher the ability to identify points where something other than the law or policy being assessed may have impacted the data.

Threats to External Validity

External validity relates to inferences made whether cause-and-effect relationships can stand throughout various settings, persons, and treatments (Shadish et al., 2002). In other words, external validity extends to a generalization of the results of the study. Five possible threats to external validity are explained by Shadish et al. (2002). After analysis of the five potential threats, the only salient threat would be the interaction of causal relationships with settings. Alabama and Oklahoma are similar in demographics; however, the findings may not be generalizable to other settings, especially larger states such as California. Since this appears to be the first study to date examining residency restrictions in two states using the ITS design, there is an inability to compare results with other studies, which is discussed in the limitations section.

To conclude, the current research utilized data from two states, Alabama and Oklahoma, similar in demographics and legislation. The goal was to assess the legal impact of Megan's Law and residency restriction laws in these two states by analyzing monthly arrest rates of rape while comparing monthly arrest rates of robbery as a nonequivalent dependent variable. An interrupted time-series design offers the ability to make inferences about the effectiveness of the legislation.

Strengths and Limitations

Strengths

Employing two outcome measures to assess the impact of sex offending in Alabama and Oklahoma was a major strength of this study. Previous literature did not indicate the use of two time periods to serve as outcome measures, which separated this current research from other examinations of residency restrictions. In addition, assessing constitutionality and fairness does not necessarily determine effectiveness of law.

A second strength involved the use of two simple ITS designs which helps to control potential threats of validity. Examining two states instead of one strengthened the ability to assess effectiveness of legislation and added to the literature. Standardized data also strengthened this design. Monthly arrest rates of rape and robbery were reported to both Alabama and Oklahoma's UCR in accordance with each state's definition. Although the data may be standardized, one limitation of using secondary data was not all Alabama and Oklahoma police departments may participate in distribution of data to the state's UCR. While this limitation is important to address, it is minimal in that the various departments which do provide official arrest rates and report monthly, were consistent with UCR standards.

A third strength was the measurement of each law individually. Previous research appeared to assess the new law discounting any previous law which would have impacted the statistical outcome of the study. In this study, assessing both Megan's Law and residency restrictions instead of focusing solely on residency restrictions (the new law) allowed the researcher to separate the impact of two sexual offending laws. This assessment offered a more accurate measure of each law.

Limitations

The main limitation in this study was the reliance upon secondary data; however, unavoidable in such a case. Even though many departments may participate in reporting, there still are departments which do not participate; therefore, this data was impacted by the dark figures of crime. Most important in this study, rape tends to be underreported and the need for accuracy in arrests in this category was relevant to determine the impact of these laws.

Another limitation involving secondary data was variation in reporting with police departments. While protocol is utilized, subjectivity most certainly may play a role. Even though formal definitions were used by each state for rape and robbery, it is possible for over-and underreporting of data. Addressing this limitation was the use of longitudinal data, whereas establishing crime trends over time minimizes this limitation.

The last limitation was lack of research on assessing the legal impact of residency restrictions. Through extensive research of the literature, no study to date has been found testing the legal impact of residency restrictions including two states to compare crime trends. While this study added to the literature, there was not previous literature to guide the current study.

CHAPTER IV

ANALYSIS AND FINDINGS

In assessing the effectiveness of residency restrictions in both Alabama and Oklahoma, quantitative methods were utilized. Monthly arrest rates for rape and robbery were analyzed to examine the legislation. To evaluate the impact of Megan's Law and residency restrictions for both states, an ordinary least squares regression (OLS) and an Autoregressive Integrated Moving Average Model (ARIMA) were used. This chapter will explain both statistical methods and provide an analysis of the findings. First, an examination of the analysis methods will be addressed. Second, a detailed step-by-step example of the ARIMA process will be explained, followed by a discussion of all models used in the study. The chapter will conclude with an overall statistical summary of the findings.

Interrupted Time-Series Design and Analysis Method

Three methods are utilized when analyzing changes in an ITS design: visual inspection, regression analysis, and ARIMA. Each method includes strengths and weaknesses (Mohr, 1988). For this study, ARIMA modeling was utilized based on the presence of auto-correlation in the data.

One major assumption in OLS is no auto-correlation [residuals are not correlated] (Lewis-Beck, 1980; Mohr, 1988; Shadish et al., 2002). In time-series analysis, this assumption cannot always be maintained as observations have a higher likelihood of being correlated and these correlations may extend into the larger series of the data as many observations are being examined over time (McDowell et al., 1980). The failure to control for auto-correlation can cause the *t-statistic* to increase by 300-400 percent, which in turn creates faulty statistical significance of the data (McDowell et al., 1980; Ostrom,

1990). Therefore, the first step was to assess the data for auto-correlation using the Durbin-Watson statistic in SPSS. If auto-correlation exists, the Durbin-Watson statistic would fall below 1.5 or above 2.5. When examined, the data for each time frame indicated auto-correlation. Table 1 provides a list of the Durbin-Watson statistics for each regression analysis using both the dependent variable of monthly rape arrest rates and the nonequivalent dependent variable of monthly robbery arrest rates.

Table 1

Durbin-Watson Statistics for All Time Frames With Dependent and Nonequivalent Dependent Variables

<u>Time Frame</u>	<u>Variable</u>	<u>Durbin-Watson Statistic</u>
AL (Jan. 1984-Sept. 2005)	Rape (DV)	.853
AL (May 1996-Dec. 2012)	Rape (DV)	1.070
OK (Jan 1984-Oct. 2003)	Rape (DV)	.835
OK (Nov. 1997-Dec. 2012)	Rape (DV)	1.137
AL (Jan. 1984-Sept. 2005)	Robbery (NEQDV)	.477
AL (May 1996-Dec. 2012)	Robbery (NEQDV)	.467
OK (Jan 1984-Oct. 2003)	Robbery (NEQDV)	.869
OK (Nov. 1997-Dec. 2012)	Robbery (NEQDV)	1.210

ARIMA modeling creates trends with the goal of eliminating systematic error (Mohr, 1988). In an ARIMA model the error term itself is used as an independent variable, whereas in regression analysis additional independent variables are relied on to account for error within the data (McDowell et al., 1980). The formula for ARIMA modeling is $Y_t = N_t + I_t$, where a time-series observation (Y_t) equals a noise component

(N_t) plus an intervention component (I_t). The noise component could consist of seasonality, trends, random error, or a combination of the three, which must be controlled for as each might impact the statistical analysis of the data (McDowell et al., 1980).

Seasonality refers to the value of one observation being related to the value of another observation, usually identified as annually. Crime rates often are higher in the summer than in the winter, so arrest rates for August 2001 may be correlated with the value of August 2000 and arrest rates for December 2001 may be correlated with arrest rates for December 2000. This seasonal correlation violates the assumption that the value of any observation is independent of any other observations.

Trends establish some type of pattern in the time-series design such as drifting upward or downward throughout most of the observations. Trends often cause the value of an observation to be correlated with the previous observation, e.g., the value of the observation for May 2001 is partially based on (correlated with) the value of the observation for April 2001. The assumption of regression is a stochastic linear model for the data. Stochastic data refers to observations randomly moving above and below a mean score. Stochastic data are required for regression analysis. Non-stochastic data refers to observations that are not randomly moving from a mean score, instead the data are trending, making the error term extreme when a mean score is established.

Random error can occur even without the presence of seasonality or trends, although the assumption is that if random error occurs in stochastic data, the error term will equal zero as these error terms would vary randomly around a mean score (McDowell et al., 1980). In non-stochastic data, the error term is not random, and the assumption that the error term will equal zero cannot be maintained.

ARIMA modeling is a process based on the idea that a random shock (a_t) or “white noise” is managed through a system of filters or “black boxes” (p, d, q), which control for autoregression (p), differencing (d), and moving average (q) (McDowell et al., 1980, p. 17). The random shock (a_t) then exits the filters and produces a time-series observation (Y_t) using the formula $Y_t = a_t$ (McDowell et al., 1980). Seasonality in the data also can be controlled using ARIMA (p, d, q) (P, D, Q) models, which is when the random shock (a_t) runs through additional filters controlling for seasonal auto-regression (P), seasonal differencing (D), and seasonal moving average (Q) (McDowell et al., 1980).

Auto-correlation functions (ACF) and partial auto-correlation functions (PACF) were visually analyzed to identify the appropriate ARIMA model required to control for the source or sources of auto-correlation. This assessment of the ACFs and PACFs is the most effective means of determining which model is required to best control for seasonality, differencing, and auto-regression.

Model Construction

Three phases make up the ARIMA model process: identification, estimation, and diagnosis (SPSS Trends 10.0, 1999). All three are necessary to use the ARIMA model correctly and must be followed in succession of one another. If one phase does not meet the criteria required, the researcher must return to the previous step, examine and fix the issue, and then move forward.

Identification. The first phase in ARIMA modeling is the identification process. This phase requires an identification of the three filters in the ARIMA (p, d, q , with AR being associated with p , I being associated with d , and MA being associated with q). Using the ACF and PACF graphs developed from the error term or residuals, first a determination was made as to whether the data are stochastic (randomly moving around a

mean score) or non-stochastic (trending up or down). If the series is not stochastic, the data must be transformed using differencing (d). As all the data for this study were stochastic, except for model 7, an examination of the ACF and PACF graphs developed from the residuals indicated whether AR or MA processes were required and whether these processes were related to the previous observation or seasonality. The process for differencing data will be discussed in greater detail when reviewing model 7.

The addition of an AR component is indicated by a decline in value of the spikes on the ACF graph with specific spikes outside the confidence interval on the PACF graph. These spikes on the PACF graph indicate a starting point to identify the AR model value. If the first spike is outside the PACF confidence interval with no other spikes, this would suggest an AR (1) process for the series. When two spikes are outside the confidence interval on the PACF graph, this indicates an AR (2) process and so forth; thus, dependent upon how many spikes fall outside the confidence interval on the PACF graph would then determine the AR process value. AR seasonality is identified by PACF spikes at the 12 month and 24 month period that are outside the confidence interval.

The MA component is the opposite of what is examined for the AR component in that they account for the number of spikes outside of ACF confidence interval and the decline in the values of the PACF graph. If one spike is outside the confidence interval of the ACF graph, it is suggested to use a MA (1) process. When the first two spikes are outside the confidence interval on the ACF graph, an MA (2) process is recommended, and so forth. MA seasonality is identified by ACF spikes at the 12 month and 24 month period that are outside the confidence interval.

In summary, both ACF and PACF graphs are used to determine differencing, auto-regression, and moving average of the series. Once an MA or AR component is added to the model, an assessment of the new ACF and PACF generated by this model needs to be assessed to continue in the identification process. The determination of whether the process is an AR or MA is important for the remainder of the phases in ARIMA modeling as an AR or MA model can influence both the phases of estimation and diagnosis.

Estimation. Once the model is identified, the second phase of ARIMA modeling is estimation. This phase requires the use of software to calculate and evaluate maximum-likelihood coefficients to examine the quality of the model. A standard ARIMA model (p, d, q) has nonlinear parameters, which are required for the use of OLS. SPSS Trends 10.0 is a more efficient software package to provide what is needed for ARIMA modeling procedures. A regression model is generated to provide new variables such as the fit or predicted value, the slope, the error term (residual), and confidence limits (upper and lower) for the fit or predicted value. This step requires the researcher also to examine two estimation criteria: Parameter estimates need to be within the boundaries of stationarity and/or invertibility for both the AR and MA parameters; and the parameter estimates need to be statistically significant (McDowell et al., 1980). ACF and PACF residuals should be examined by the researcher to reveal whether statistical significance has been met through the model being the most parsimonious and whether the model fits the time-series (McDowell et al., 1980). If either criterion is not met, the researcher must return to the identification phase where a new model must be developed and estimated (McDowell

et al., 1980). This second phase is a crucial process as it reveals whether the researcher has identified and estimated the model correctly.

Diagnosis. The diagnosis phase is the final process in ARIMA modeling. This phase involves finding the most adequate ARIMA model for the research. Graphing the ACF and PACF error (residuals) should indicate non-significant difference from zero, meaning the error term falls within the limits of the upper and lower levels of the confidence intervals. One or two spikes may be present which exist outside of the confidence interval. This is not an issue; however, various spikes protruding outside of the first few observations indicate the model is incorrect for the variable used. Another factor to observe in this phase is the errors or residuals. ARIMA automatically adds all residuals to the file as a new series. There should not be a pattern for the residuals and these errors should act as white noise. The Box-Ljung Q statistic test was used to ensure the Q statistic was not significant.

Other statistical tools may be used to find whether the model is correct such as Akaike Information Criterion or AIC, Log likelihood, Schwarz Bayesian or SBC, and t-values for each AR and MA parameter entered into the model all of which are found in SPSS Trends 10.0 (SPSS Trends 10.0). The t-value also will provide information on over-specification of the model with an insignificant value. Underspecified models can be found by examination of ACF and PACF graphs by looking at the residuals (errors) on both graphs. These will protrude outside of the confidence intervals indicating an underspecified model (SPSS Trends 10.0). The last part of the diagnosis phase is to make sure the AR process (ϕ) and the MA process (θ) are within the bounds of stationarity and invertibility respectively (McDowell et al., 1980). ARIMA models outside of the $-1 < \phi_1$

< 1 and $-1 < \theta_1 < 1$ bounds and have unstandardized coefficients for AR_1 and MA_1 processes result in models that are improperly specified (McDowell et al., 1980).

Data Analysis

OLS and ARIMA statistical methods were used in this study. Two data sets per each state were analyzed, which included monthly arrest rates for rape and monthly arrest rates for robbery for the state of Alabama and the state of Oklahoma for the years 1984-2012. Model 1 provides a detailed explanation of the step by step process used for ARIMA modeling. Evaluations of Models 2-8 will focus primarily on the statistical outcomes of the models, omitting how each model was developed, as the process is identical to model 1. Please refer to Appendix B for ACF/PACF graphs for Models 2-8.

Model 1: Alabama Pre-Megan to Residency Restriction Enactment Rape Arrest Rates

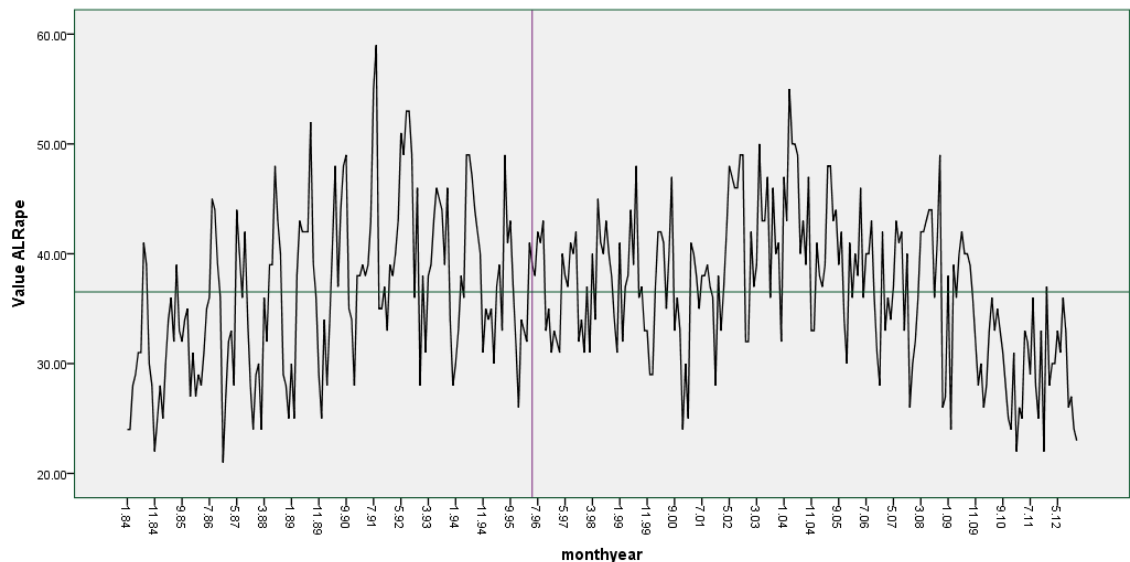


Figure 1. Sequence plot of Alabama monthly arrest rates of rape (Model 1).

Figure 1 displays a sequence plot of monthly arrest rates of rape per 1,000,000 adults. The vertical line indicates the enactment of Megan's Law on May 1, 1996 and the

horizontal line is the mean of the series for Model 1 which is 36.614. A visual examination shows a stochastic process indicating random shocks are occurring around a common mean--thus a linear model. An examination of the ACF and PACF (Figures 2 and 3) aid in identifying what type of ARIMA model is required.

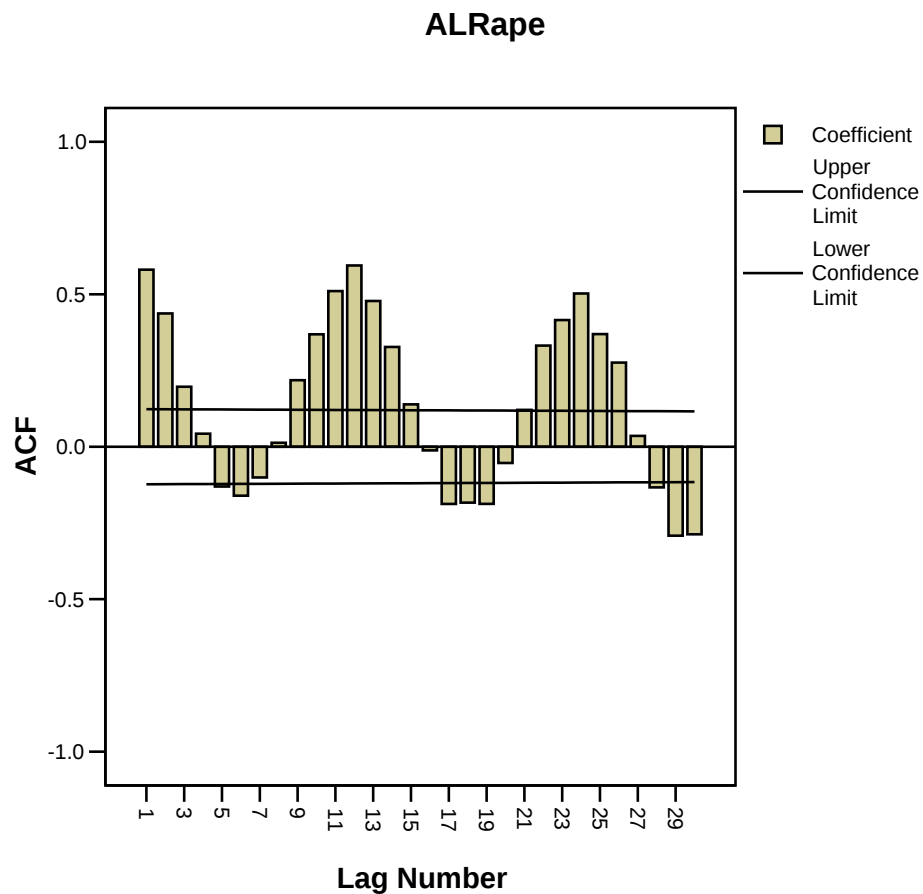


Figure 2. ACF for model 1 AL monthly arrest rates for rape ARIMA (0,0,0) (0,0,0)₁₂.

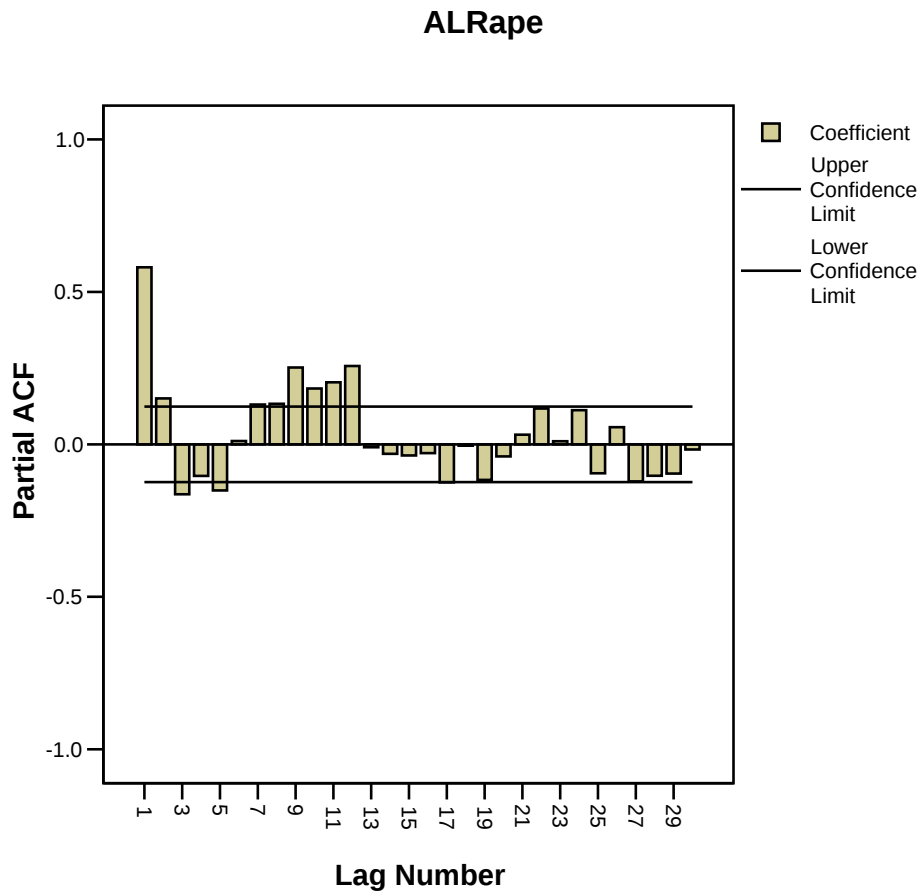


Figure 3. PACF for model 1 AL monthly arrest rates for rape ARIMA (0,0,0) (0,0,0)₁₂.

Figure 2 and Figure 3 represent the ACFs and PACFs for Model 1. These two figures indicate a decline in value of the spikes on the ACF graph with specific spikes outside the confidence interval on the PACF graph. This observation holds true for the first few points and around the area of month 12 suggesting an AR and an AR for seasonality (AR)₁₂ are required. Additionally, the spike outside the confidence interval of the ACF graph, suggests a MA process along with a seasonal MA process (MA)₁₂ for the ACF spike outside the confidence interval.

After examining the ACF and PACF, the ARIMA series starting point to identify the most appropriate ARIMA model for Model 1 is ARIMA (1,0,1) (1,0,1)₁₂. Figures 4 and 5 display the ACF and PACF for the ARIMA (1,0,1) (1,0,1)₁₂ model. Although the ACFs and PACFs in Figure 4 and Figure 5 have spikes outside the confidence intervals at observation 6 and 26, and 6 and 20 respectively, these spikes are of minimal concern as they are not in the first few observations nor are they at a point that would suggest seasonality. Additionally, a Box-Ljung Q statistic test indicated that there was no significant auto-correlation detected in the first 50 observations.

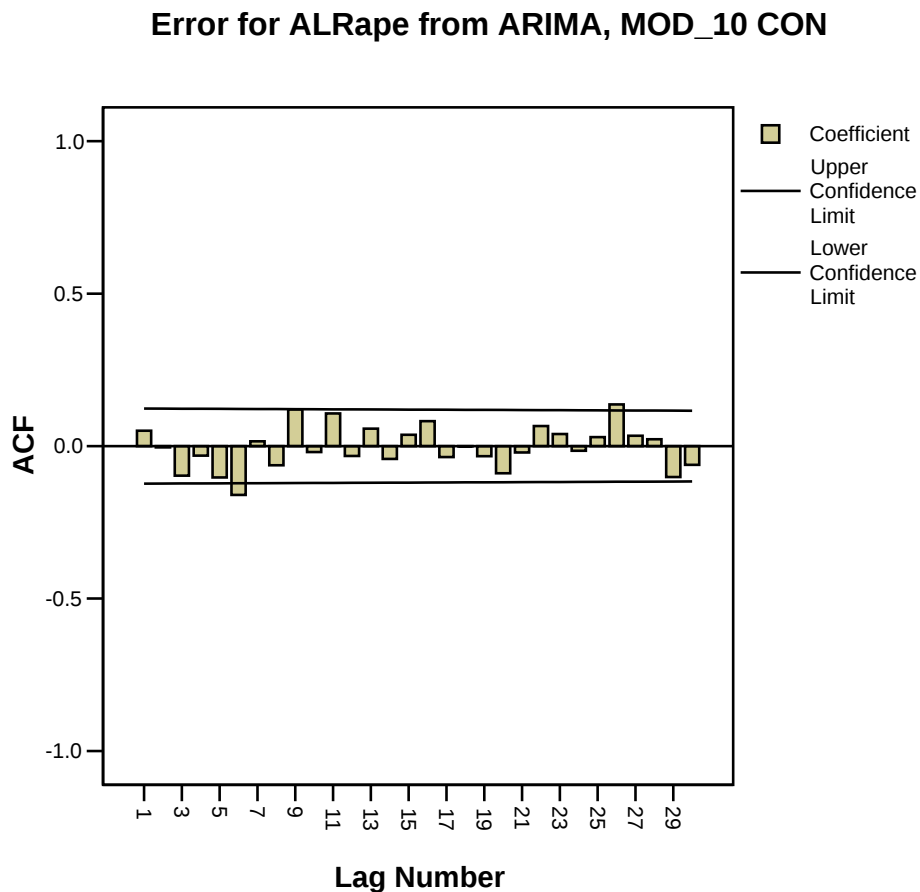


Figure 4. ACF for model 1 AL monthly arrest rates for rape ARIMA (1,0,1) (1,0,1)₁₂.

Error for ALRape from ARIMA, MOD_10 CON

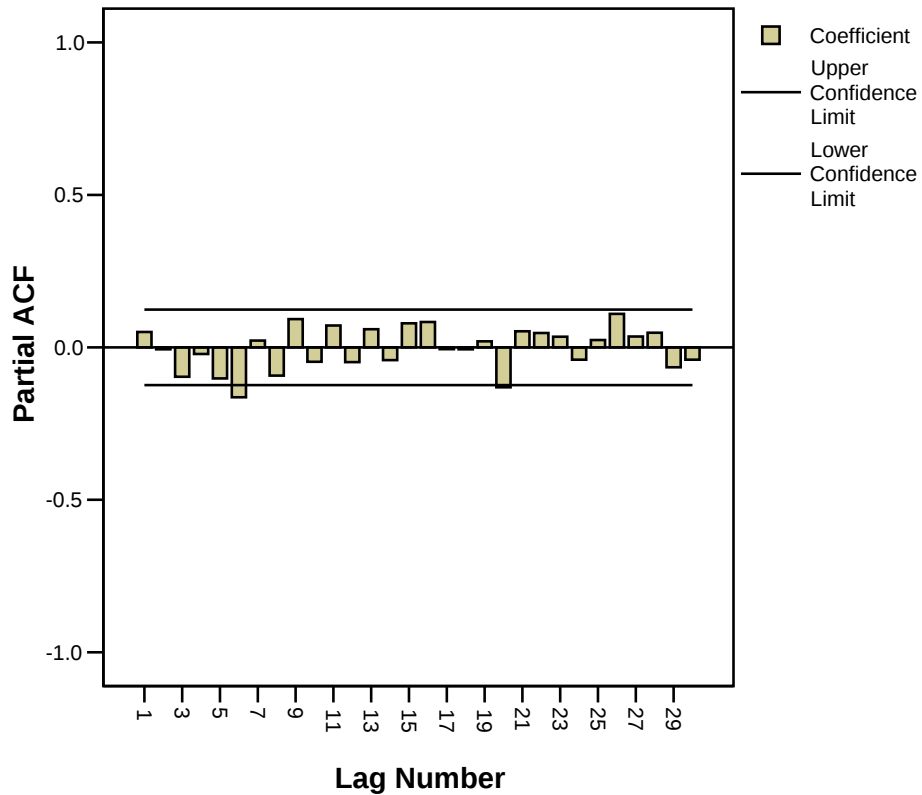


Figure 5. PACF for model 1 AL monthly arrest rates for rape ARIMA (1,0,1) (1,0,1)₁₂.

Table 2 is the regression output for Model 1 examining the variable of monthly rape arrest rates for Alabama with the interruption point as Megan's Law (May 1, 1996). The value of the AR and MA additions are significant and their unstandardized slope weights fall between 1 and -1; thus, indicating they all fall within the limits of stationarity ($-1 < \phi_1 < 1$) and invertibility ($-1 < \theta_1 < 1$). Model 1 indicates the passage of Megan's Law in Alabama attributed to a monthly decrease in reported rapes of approximately .29 reported rapes per 1,000,000 adults, or a decrease of one reported rape per month for every 3.45 million adults. The p value for this variable is .896, suggesting that the

reduction in reported rapes was more of a chance event than an impact from the passage of Megan's Law in Alabama.

Table 2

SPSS Time Series Regression Output for Model 1 Alabama Monthly Arrest Rates for Rape ARIMA Model (1,0,1) (1,0,1)₁₂

MODEL: (1, 0, 1) (1, 0, 1)₁₂
Variable: ALRape
Regressors: ALLAW

FINAL PARAMETERS:

Number of residuals 261
Standard error 4.5783536
Log likelihood -772.65773
AIC 1557.3155
SBC 1578.7026

Analysis of Variance:

	DF	Adj. Sum of Squares	Residual Variance
Residuals	255	5690.7969	20.961321

Variables in the Model:

	B	SEB	T-RATIO	APPROX.PROB.
AR1	.935485	.0298393	31.350738	.00000000
MA1	.724970	.0653266	11.097615	.00000000
SAR1	.983798	.0111946	87.881427	.00000000
SMA1	.814257	.0574727	14.167720	.00000000
ALLAW	-.296655	2.2762554	-.130326	.89641118
CONSTANT	37.065095	6.4635082	5.734517	.00000003

Model 2: Alabama Megan's Law to December 2012 Rape Arrest Rates

Figure 6 provides the sequence plot to Model 2 which examines monthly rape arrest rates for Alabama using Megan's Law enactment date of May 1, 1996 as the starting point with December 2012 as the end point. The interruption point for this model was Alabama's residency restrictions enactment date of October 1, 2005. The process appears stochastic so differencing was not required.

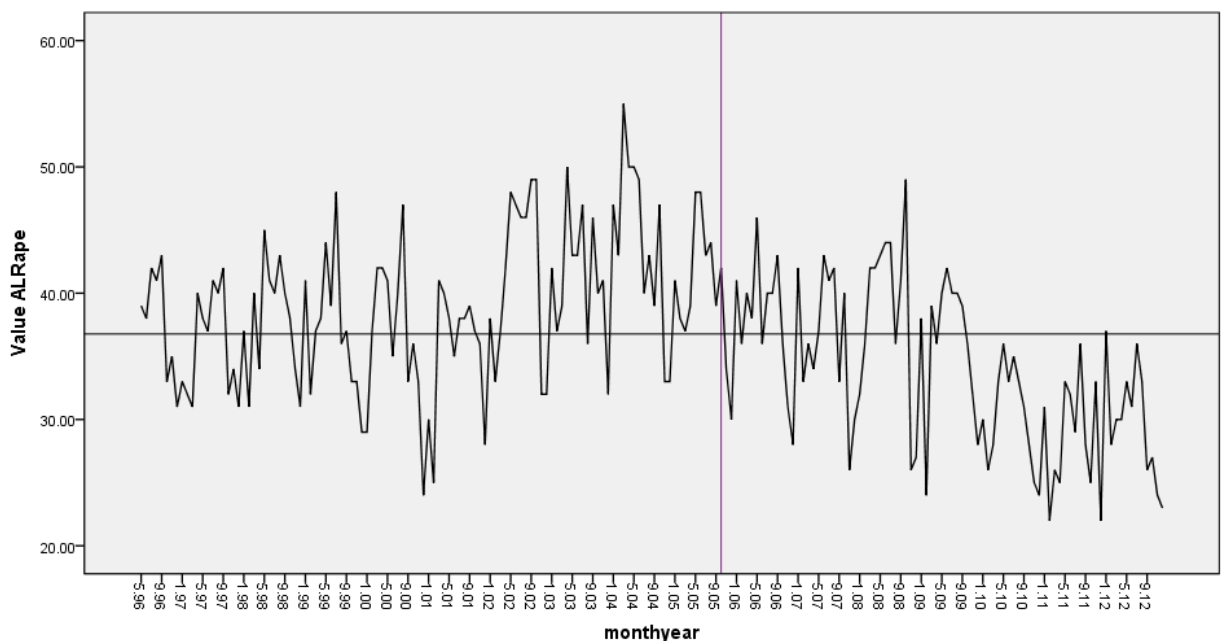


Figure 6. Sequence plot of Alabama monthly arrest rates of rape (Model 2).

The ACFs and PACFs for Model 2 (see Appendix B: Figures B15 through B18 respectively) indicated the appropriate ARIMA model would be similar to the model used to model the data for Model 1 [ARIMA (1,0,1) (1,0,1)₁₂]. Table 3 displays the regression output for Model 2 using ARIMA (1,0,1) (1,0,1)₁₂. The value of the AR and MA additions are significant and their unstandardized slope weights fall between 1 and -1;

thus, indicating they all fall within the limits of stationarity ($-1 < \phi_1 < 1$) and invertibility ($-1 < \theta_1 < 1$). Model 2 indicates the passage of residency restriction laws in Alabama attributed to a monthly decrease in reported rapes of approximately 2.3 reported rapes per 1,000,000 adults. The p value for this variable is .317, suggesting that the reduction in reported rapes per month was not statistically significant and the reduction was more of a chance event than an impact from the passage of residency restrictions in Alabama.

Table 3

SPSS Time Series Regression Output for Model 2 Alabama Monthly Arrest Rates for Rape ARIMA Model (1,0,1) (1,0,1)₁₂

	B	SEB	T-RATIO	APPROX. PROB.
AR1	.958947	.0281735	34.037148	.00000000
MA1	.749356	.0655559	11.430800	.00000000
SAR1	.988375	.0150193	65.806911	.00000000
SMA1	.861679	.0822626	10.474728	.00000000
ALLAW	-2.301615	2.2968361	-1.002081	.31755282
CONSTANT	40.959267	8.7605511	4.675421	.00000548

Model 3: Oklahoma Pre-Megan to Residency Restriction Enactment Rape Arrest Rates

Model 3 addresses the Oklahoma monthly reported rape arrest rates based on the enactment of Megan's Law. Figure 7 provides a sequence plot starting from January 1, 1984 and continuing to the month prior to Oklahoma's residency restriction enactment date (October 1, 2003). The interruption point for this model was Oklahoma's Megan's Law enactment date of November 1, 1997. The process appears stochastic so differencing was not required.

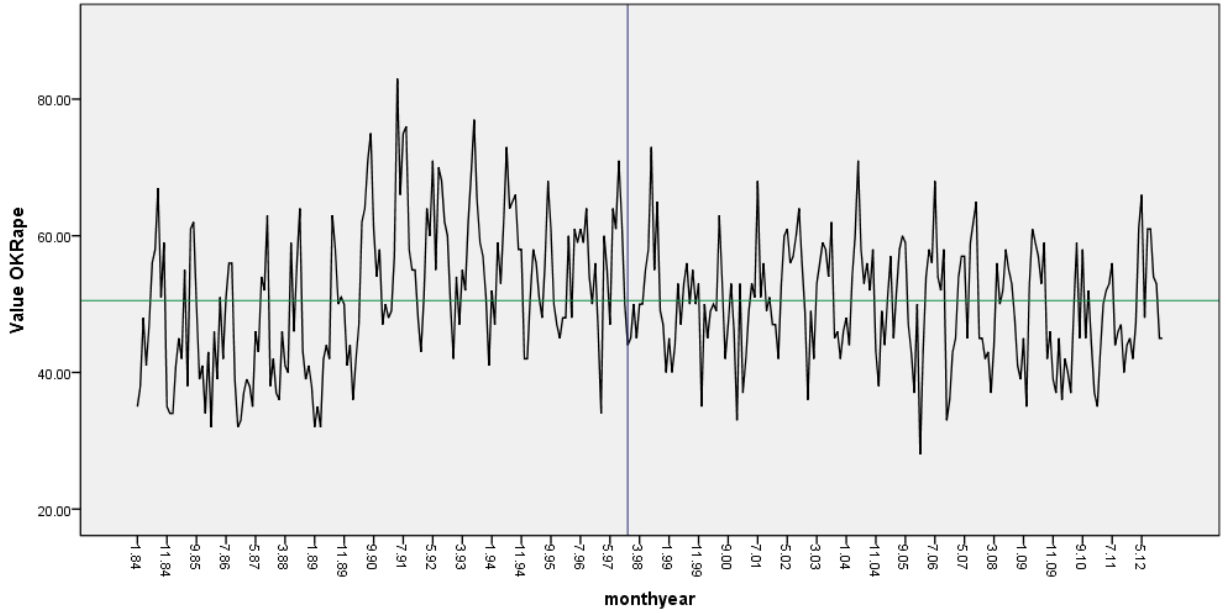


Figure 7. Sequence plot of Oklahoma monthly arrest rates of rape (Model 3).

The ACFs and PACFs for Model 3 (see Appendix B: Figures B19 through B22 respectively) indicated the appropriate ARIMA model would be similar to the model used to model the data for Models 1 and 2 [ARIMA (1,0,1) (1,0,1)₁₂]. Table 4 displays the regression output for Model 3 using ARIMA (1,0,1) (1,0,1)₁₂. The value of the AR and MA additions are significant and their unstandardized slope weights fall between 1 and -1; thus, indicating they all fall within the limits of stationarity ($-1 < \phi_1 < 1$) and invertibility ($-1 < \theta_1 < 1$). Model 3 indicates the passage of Oklahoma's Megan law attributed to a monthly decrease in reported rapes of approximately 2.6 reported rapes per 1,000,000 adults. The p value for this variable is .416, suggesting the reduction in reported rapes per month was not statistically significant and the reduction was more of a chance event than an impact from the passage of Megan's Law in Oklahoma.

Table 4

SPSS Time Series Regression Output for Model 3 Oklahoma Monthly Arrest Rates for Rape ARIMA Model (1,0,1) (1,0,1)₁₂

Variables in the Model:				
	B	SEB	T-RATIO	APPROX. PROB.
AR1	.957387	.024321	39.365072	.00000000
MA1	.791983	.058508	13.536239	.00000000
SAR1	.977798	.012227	79.971960	.00000000
SMA1	.760751	.058278	13.053797	.00000000
OKLAW	-2.603717	3.192024	-.815695	.41551141
CONSTANT	53.030175	10.467434	5.066206	.00000083

Model 4: Oklahoma Megan's Law to December 2012 Rape Arrest Rates

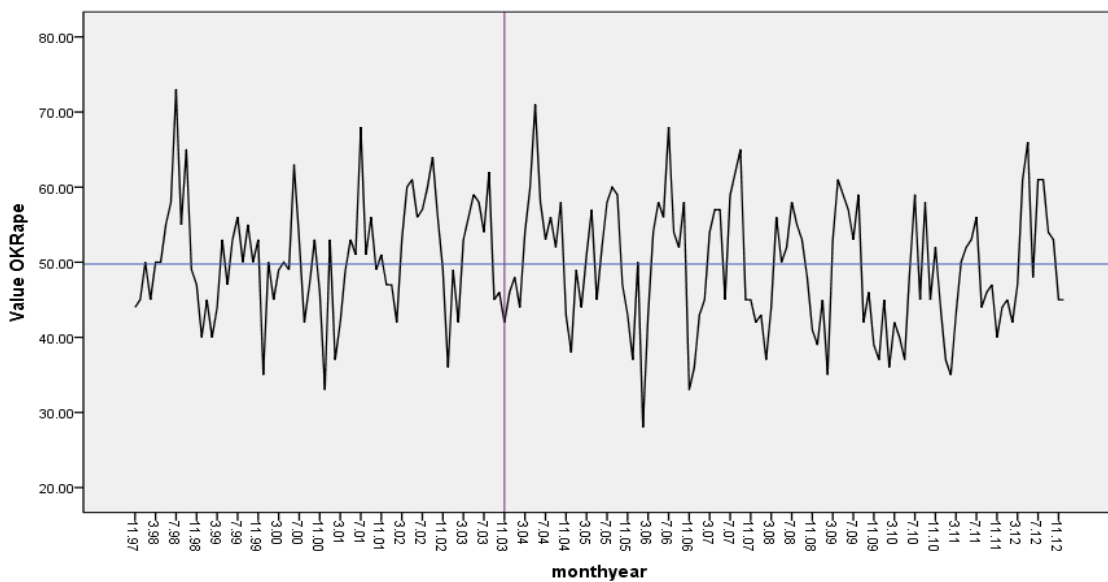


Figure 8. Sequence plot of Oklahoma monthly arrest rates of rape (Model 4).

Model 4 addresses the Oklahoma monthly reported rape arrest rates based on residency restrictions. Figure 8 provides a sequence plot starting from November 1997 and continuing through December 2012. The interruption point is the date of legislation enactment for residency restrictions in Oklahoma (November 1, 2003). The process appears stochastic so differencing was not required.

The ACFs and PACFs for Model 4 (see Appendix B: Figures B23 through B26 respectively) indicated the appropriate ARIMA model would be [ARIMA (1,0,0) (1,0,1)₁₂]. Table 5 displays the regression output for Model 4 using ARIMA (1,0,0) (1,0,1)₁₂. The value of the AR and MA additions are significant and their unstandardized slope weights fall between 1 and -1; thus, indicating they all fall within the limits of stationarity ($-1 < \phi_1 < 1$) and invertibility ($-1 < \theta_1 < 1$). Model 4 indicates the passage of residency restriction laws in Oklahoma attributed to a monthly decrease in reported rapes of approximately 1.3 reported rapes per 1,000,000 adults. The p value for this variable is .247, suggesting the reduction in reported rapes per month was not statistically significant and the reduction was more of a chance event than an impact from the passage of residency restrictions.

Table 5

SPSS Time Series Regression Output for Model 4 Oklahoma Monthly Arrest Rates for Rape ARIMA Model (1,0,1) (1,0,1)₁₂

Variables in the Model:				
	B	SEB	T-RATIO	APPROX. PROB.
AR1	.230586	.0697242	3.307117	.00114155
SAR1	.998205	.0129191	77.266109	.00000000
SMA1	.949081	.1772781	5.353627	.00000026
OKLAW	-1.312190	1.1298058	-1.161429	.24703115
CONSTANT	53.390066	3.5056109	15.229890	.00000000

Model 5: Alabama Pre-Megan to Residency Restriction Enactment Robbery Arrest Rates

Model 5 examines the time period of January 1984 through October 2005, using the Alabama Megan's Law enactment date of May 1, 1996 as the interruption point. This model is using the nonequivalent dependent variable of robbery to compare to Model 1. The process appears stochastic so differencing was not required.

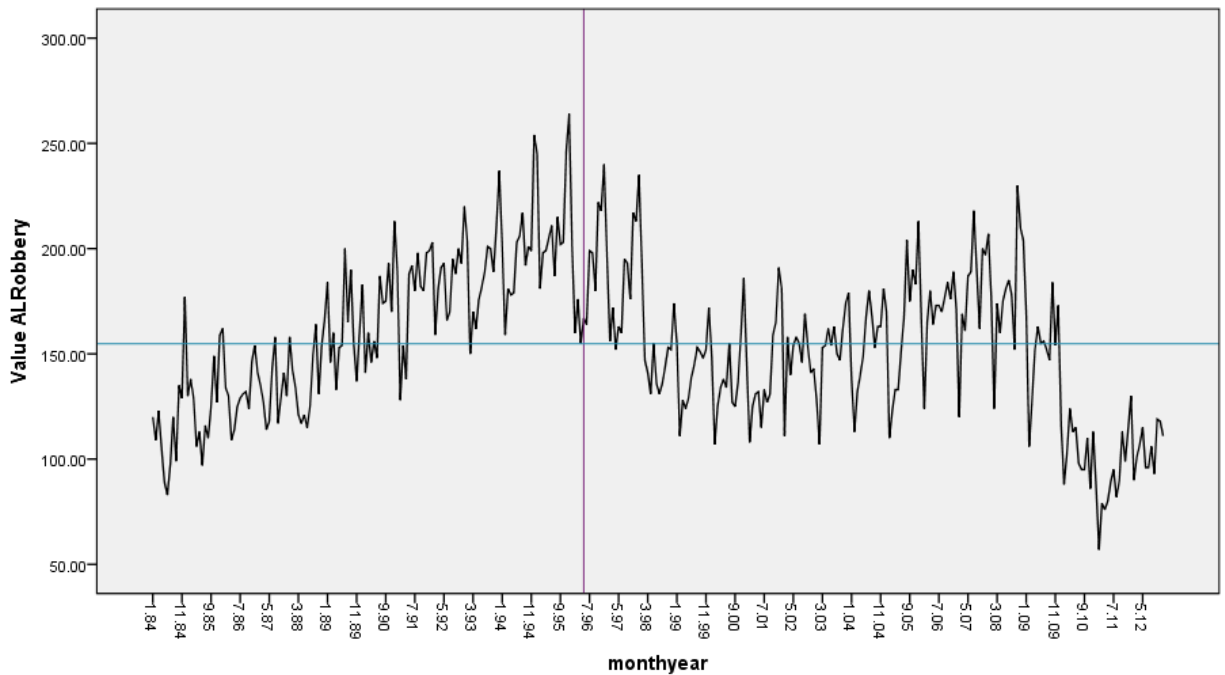


Figure 9. Sequence plot of Alabama monthly arrest rates of robbery (Model 5).

The ACFs and PACFs for Model 5 (see Appendix B: Figures B27 through B30 respectively) indicated the appropriate ARIMA model would be [ARIMA (1,0,1) (1,0,1)₁₂]. Table 6 displays the regression output for Model 5 using ARIMA (1,0,1) (1,0,1)₁₂. The value of the AR and MA additions are significant and their unstandardized slope weights fall between 1 and -1; thus, indicating they all fall within the limits of stationarity ($-1 < \phi_1 < 1$) and invertibility ($-1 < \theta_1 < 1$). Model 5 indicates the passage of Megan law in Alabama attributed to a monthly decrease in reported robbery arrest rates

in Alabama of approximately 6.94 reported robbery arrests per 1,000,000 adults. The p value for this variable is .555, suggesting the reduction in reported robberies per month was not statistically significant and the reduction was more of a chance event than an impact from the passage of Megan's Law in Alabama. It is important to note although the 6.94 reported robbery arrest rate is higher than any of the previous reductions in monthly reported rape arrest rates, the average monthly reported rape arrest rates in Alabama are approximately 37 – 40, where the average monthly reported robbery arrest rates range from 159 – 161.

Table 6

SPSS Time Series Regression Output for Model 5 Alabama Monthly Arrest Rates for Robbery ARIMA Model (1,0,1) (1,0,1)₁₂

Variables in the Model:				
	B	SEB	T-RATIO	APPROX. PROB.
AR1	.89901	.034993	25.691176	.00000000
MA1	.39785	.072818	5.463566	.00000011
SAR1	.93553	.029499	31.714251	.00000000
SMA1	.62348	.074345	8.386264	.00000000
ALLAW	-6.93942	11.754131	-.590381	.55545793
CONSTANT	159.27385	28.746719	5.540592	.00000008

Model 6: Alabama Megan's Law to December 2012 Robbery Arrest Rates

Model 6 examines the nonequivalent dependent variable of monthly robbery arrest rates from the enactment date of Megan's Law in Alabama (May 1, 1996) through December 2012, with Alabama's residency restrictions (October 1, 2005) as the interruption point. The sequence plot (see Figure 10 below) indicates a stochastic process.

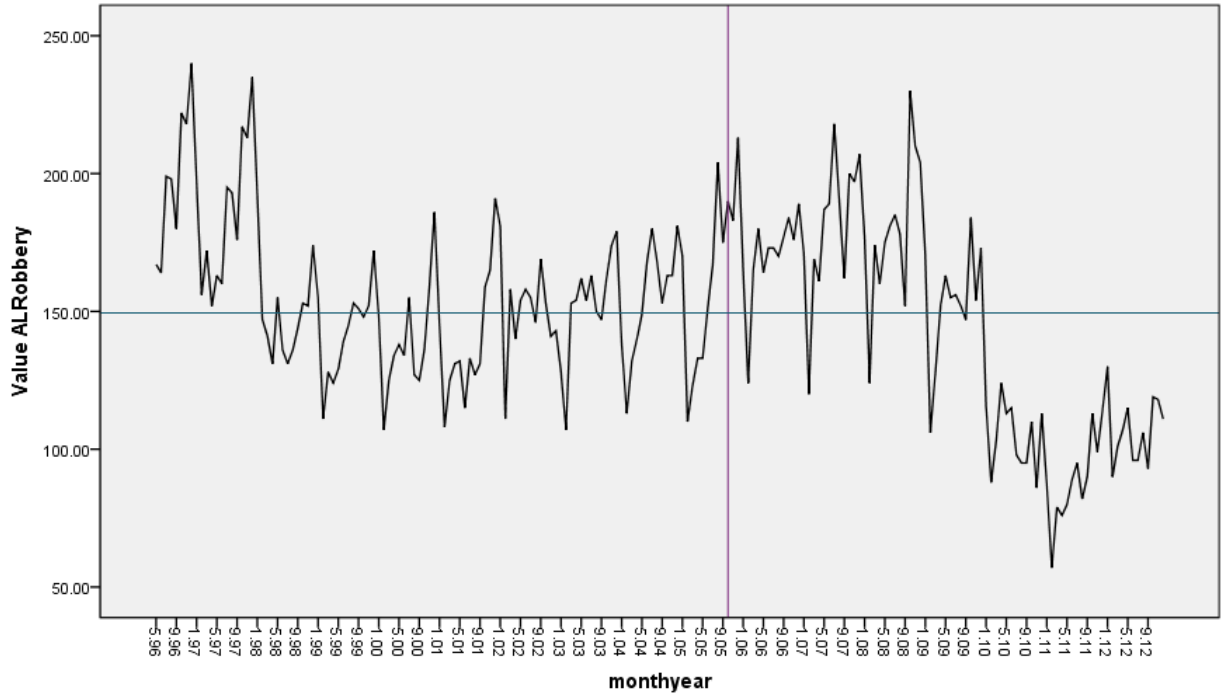


Figure 10. Sequence plot of Alabama monthly arrest rates of robbery (Model 6).

The ACFs and PACFs for Model 6 (see Appendix B: Figures B31 through B34 respectively) indicated the appropriate ARIMA model would be [ARIMA (1,0,1) (1,0,1)₁₂]. Table 7 displays the regression output for Model 6 using ARIMA (1,0,1) (1,0,1)₁₂. The value of the AR and MA additions are significant and their unstandardized slope weights fall between 1 and -1; thus, indicating they all fall within the limits of stationarity ($-1 < \phi_1 < 1$) and invertibility ($-1 < \theta_1 < 1$). Model 6 indicates the passage of residency restrictions in Alabama attributed to a monthly decrease in reported robbery arrest rates in Alabama of approximately 7.13 reported robbery arrests per 1,000,000 adults. The p value for this variable is .576, suggesting the reduction in reported robberies per month was not statistically significant and the reduction was more of a chance event than an impact from the passage of residency restriction laws in Alabama.

Table 7

SPSS Time Series Regression Output for Model 6 Alabama Monthly Arrest Rates for Robbery ARIMA Model (1,0,1) (1,0,1)₁₂

Variables in the Model:				
	B	SEB	T-RATIO	APPROX. PROB.
AR1	.92940	.030090	30.887362	.00000000
MA1	.27527	.075847	3.629265	.00036350
SAR1	.97526	.015918	61.267251	.00000000
SMA1	.73070	.075966	9.618838	.00000000
ALLAW	-7.13251	12.738629	-.559912	.57618538
CONSTANT	160.82421	59.387212	2.708061	.00737244

Model 7: Oklahoma Pre-Megan to Residency Restriction Enactment Robbery Arrest Rates

Model 7 assesses monthly robbery arrest rates in Oklahoma starting from January 1984 through October 2003 with the enactment of Megan's Law in Oklahoma (November 1, 1997) as the interruption point. An examination of the sequence plot (see Figure 11 below) indicates a non-stochastic process, different from the previous models. The random shocks are not based around a common mean. With a non-stochastic process, differencing is required in order to make the series stationary. A non-stationary series, such as indicated in Figure 11 means the average level either varies in the short term or the short-term variation shows a nonlinear pattern, greater in certain areas and not others (SPSS Trends 10.0). The series needs to be differenced where each value is replaced by the difference between the value and the proceeding value (SPSS Trends 10.0). Once the series is stationary, the value of d indicates the number of times the series had to be differenced to make the overall model stationary. In the identification phase, the decision

to difference the model to 1 was made as a starting point. SPSS Trends 10.0 describes differencing should be typically a 0 or 1; therefore with differencing required for this model, a d value of 1 seemed most appropriate.

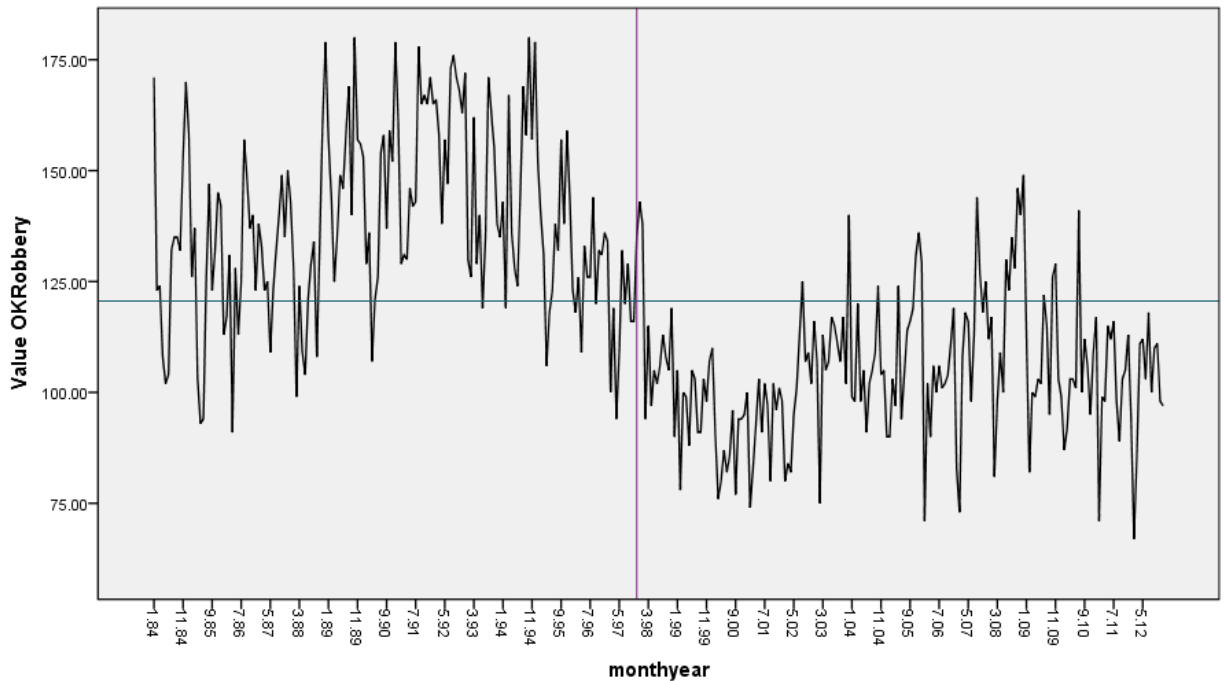


Figure 11. Sequence plot of Oklahoma monthly arrest rates of robbery (Model 7).

The ACFs and PACFs for Model 7 (see Appendix B: Figures B35 through B38 respectively) indicated the appropriate ARIMA model would be [ARIMA (1,0,1) (0,1,1)₁₂]. Table 8 displays the regression output for Model 7 using ARIMA (1,0,1) (0,1,1)₁₂. The value of the AR and MA additions are significant and their unstandardized slope weights fall between 1 and -1; thus, indicating they all fall within the limits of stationarity ($-1 < \phi_1 < 1$) and invertibility ($-1 < \theta_1 < 1$). Model 7 indicates the passage of Megan law in Oklahoma attributed to a monthly increase in reported robbery arrest rates in Oklahoma of approximately 7.69 reported robbery arrests per 1,000,000 adults. The p value for this variable is .427, suggesting the increase in reported robberies per month

was not statistically significant and the reduction was more of a chance event than an impact from the passage of Megan's Law in Oklahoma. It is important to note that of the four models addressing monthly rape arrest rates covering both Alabama and Oklahoma, and the two Alabama models addressing monthly robbery arrest rates; all models indicated a reduction in monthly arrests. The final two models addressing monthly robbery arrest rates in Oklahoma indicate an increase in arrest rates.

Table 8

SPSS Time Series Regression Output for Model 7 Oklahoma Monthly Arrest Rates for Robbery ARIMA Model (1,0,1) (0,1,1)₁₂

Variables in the Model:				
	B	SEB	T-RATIO	APPROX. PROB.
AR1	.9645184	.0215304	44.797922	.00000000
MA1	.6226201	.0586224	10.620861	.00000000
SMA1	.8179285	.0549690	14.879808	.00000000
OKLAW	7.6871770	9.6684366	.795080	.42742024
CONSTANT	-2.2786729	2.0359230	-1.119233	.26425558

Model 8: Oklahoma Megan's Law to December 2012 Robbery Arrest Rates

Model 8 examines monthly arrest rates of the nonequivalent dependent variable of robbery from November 1, 1997 to December 2012 using the enactment date of residency restrictions in Oklahoma (November 1, 2003) as an interruption point. The process appears stochastic so differencing was not required.

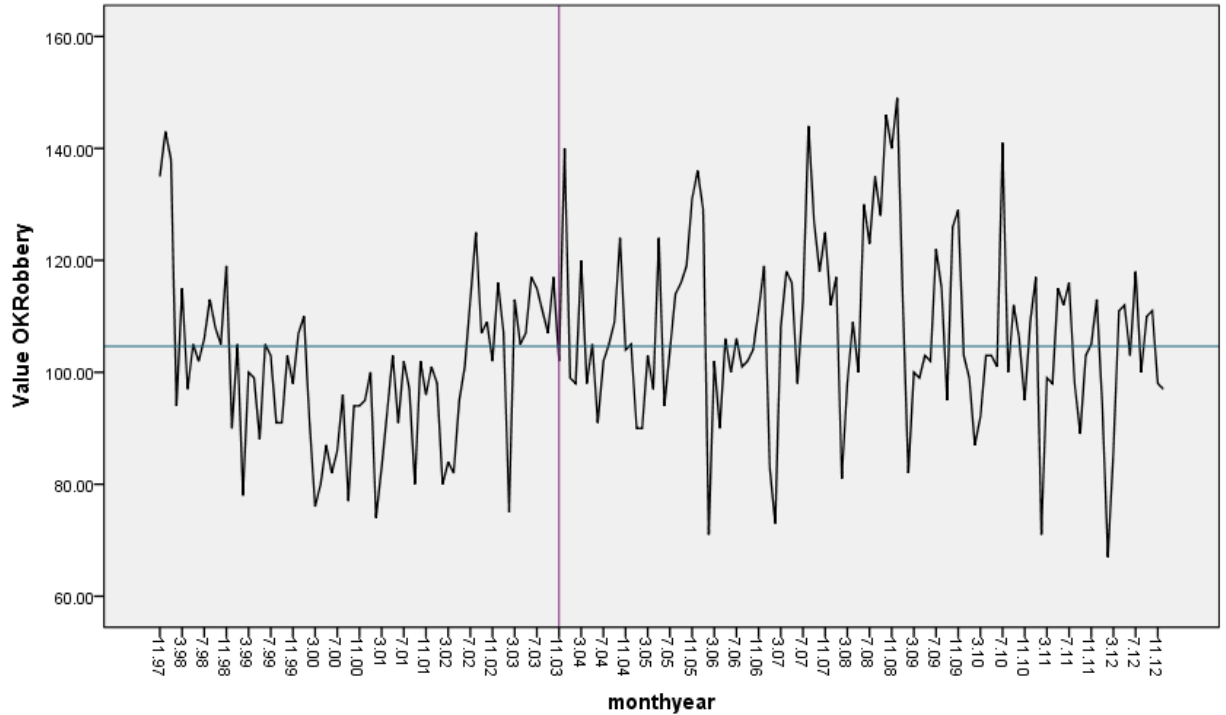


Figure 12. Sequence plot of Oklahoma monthly arrest rates of robbery (Model 8).

The ACFs and PACFs for Model 8 (see Appendix B: Figures B39 through B42 respectively) indicated the appropriate ARIMA model would be [ARIMA (1,0,1) (1,0,1)₁₂]. Table 9 displays the regression output for Model 8 using ARIMA (1,0,1) (1,0,1)₁₂. The value of the AR and MA additions are significant and their unstandardized slope weights fall between 1 and -1; thus, indicating they all fall within the limits of stationarity ($-1 < \phi_1 < 1$) and invertibility ($-1 < \theta_1 < 1$). Model 8 indicates the passage of residency restrictions in Oklahoma attributed to a monthly increase in reported robbery arrest rates in Oklahoma of approximately 4.49 reported robbery arrests per 1,000,000 adults. The p value for this variable is .359, suggesting the reduction in reported robberies per month was not statistically significant and the reduction was more of a chance event than an impact from the passage of residency restriction in Oklahoma.

Table 9

SPSS Time Series Regression Output for Model 8 Oklahoma Monthly Arrest Rates for Robbery ARIMA Model (1,0,1) (1,0,1)₁₂

Variables in the Model:				
	B	SEB	T-RATIO	APPROX. PROB.
AR1	.814175	.074243	10.966353	.00000000
MA1	.477241	.114967	4.151099	.00005147
SAR1	.986969	.024827	39.753213	.00000000
SMA1	.877412	.111070	7.899658	.00000000
OKLAW	4.493642	4.881236	.920595	.35852199
CONSTANT	93.082213	14.669047	6.345485	.00000000

Statistical Summary

After analyzing the data, the implementation of Megan's Law in Alabama and Oklahoma were not identified as attributing to a statistically significant decline in reported monthly arrest rates for rape. Similarly, the passage of residency restrictions in these two states did not indicate a statistically significant decline in reported monthly arrest rates for rape. As observed in the models, both states had a slight decrease in reported rapes immediately following the implementation of the legislation, but this decrease was temporary.

Figure 13 (below) is a sequence plot of both states with the implementation of Megan's Law. The blue line represents monthly arrest rates for rape in Alabama and the green line represents Oklahoma's monthly arrest rates for rape. The beige line indicates the monthly arrest rates for robbery in Alabama and the purple line shows the monthly arrest rates for robbery in Oklahoma. Looking at both Alabama and Oklahoma's monthly arrest rates for rape around the time shortly after enactment, the arrest rates for rape

continue to slightly increase before declining slightly, but this decline is not permanent indicating a temporary change with a delayed and gradual decrease at the onset. Both states also show a slight decline in robbery at the onset; however, as the months go by, the monthly arrest rates for robbery begin to increase again.

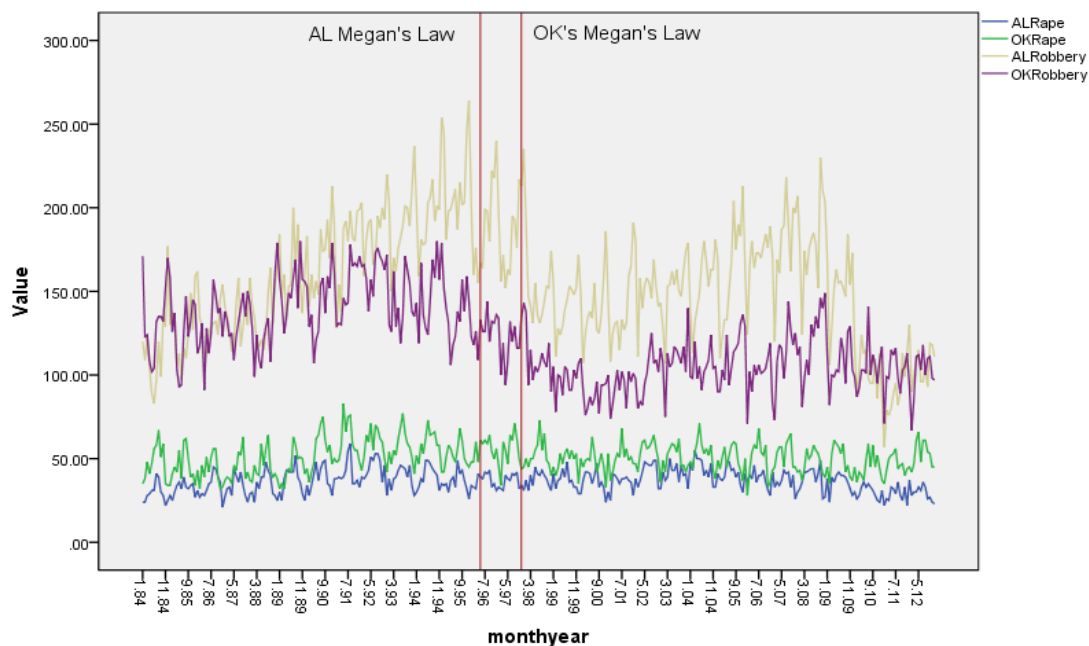


Figure 13. Sequence plot of Alabama and Oklahoma monthly arrest rates of rape and robbery with emphasis on Megan's Law enactment dates.

Figure 14 (below) is a sequence plot indicating the enactment dates of residency restrictions in Alabama and Oklahoma. Similar to Megan's Law, monthly arrest rates for rape declined at the onset of residency restriction legislation. This decline is short-lived as the increase in monthly arrest rates for rape occurs after a few months of the residency restriction legislation enactment. Therefore, the overall impact is temporary, with an abrupt and immediate effect at the onset. The nonequivalent dependent variable of robbery used to enhance the validity of this research also was not statistically significant in any increase or decrease of monthly arrest rates for robbery in each state.

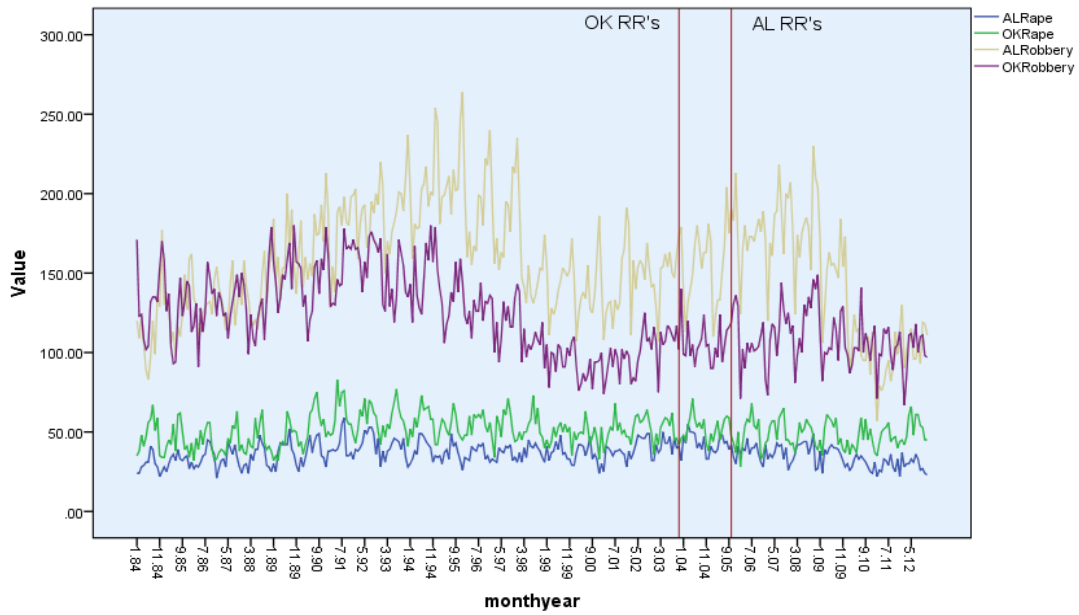


Figure 14. Sequence plot of Alabama and Oklahoma monthly arrest rates of rape and robbery with emphasis on residency restriction enactment dates.

CHAPTER V

DISCUSSION AND CONCLUSIONS

This was the first study to statistically assess the legal impact of residency restrictions comparing two states, Alabama and Oklahoma, similar in demographics and legislation. This legislation is the most current of a string of sex offender policies which have been implemented throughout time. The media impact and moral panics that increase the need for stringent legislation has created this constant cycle of developing sex offender policies. The goal of this study was to empirically evaluate sex offender residency restrictions, legislation that appears to increase throughout the U.S. to deter convicted sex offenders once released from incarceration. This chapter will provide a brief discussion of the findings (for a more detailed analysis see Chapter IV). In addition, what is working, what is not working, as well as what is promising in terms of sex offender residency restrictions will be addressed. Finally, policy implications, the importance of evidence-based legislation, recommendations, and future research will be discussed.

Summary of Key Findings

The data has autocorrelation as observed through OLS analysis. Since OLS is not the appropriate statistical model to use in this situation, SPSS Trends was the most sufficient way to test the legal impact of the both Megan's Law and residency restrictions in Alabama and Oklahoma. The use of an ARIMA model can control for other effects such as history, which provides the researcher the ability to negate other legislation that may have been in effect or came into effect during the time of the legislation tested. In addition, any changes in local areas within each state were controlled through the use of this statistical tool.

Through the use of interrupted time-series research designs and ARIMA modeling as a statistical tool, the data assessed for both states indicated there were no statistically significant reductions in monthly rape arrest rates after the implementation of Megan's Law or sex offender residency restrictions. A slight decline in arrest rates appeared to occur after enforcement of legislation; however, this decline was not permanent. The data for this study suggests Megan's Law and the sex offender residency restrictions enacted in Alabama and Oklahoma did not appear to have the desired impact planned for by legislators. This finding was not discrepant with previous research on Megan's Law and residency restrictions. The research examined to this point all conclude both laws are statistically insignificant in reducing sex offenses; thus the need to reinforce Sherman et al. (2006) and Welsh and Harris's (2008) extensive examination of legislation is important to reinforce to all researchers as well as the public.

“One-Size-Fits-All” Model: What Is Working, What Is Not Working, and What Is Promising

Sherman et al. (2006) addressed policy for various areas using the Maryland Scientific Method Scale (SMS). This specific scale evaluated empirical studies using a rating of one through five, one and two being ineffective ways of assessing policy programs, with three, four, and five ranging from some type of control group to a complete randomized study. The authors indicated the importance of effectively testing programs and the need to address what is actually working, what is promising, and what is not working. Welsh and Harris (2008) follow a similar pattern in their work, which emphasized the need for using seven steps for planned change with regard to policy implementation. The authors stated policy reassessment and review (final step) was the

area most neglected. The point here is sex offender residency restrictions relate to Sherman et al. (2006) and Welsh and Harris (2008) in terms of the need for extensive evaluation. This research attempted to contribute to a much needed movement in the criminological field of re-evaluation of legal impact with regard to policy legislation.

Researchers have continued to publish work assessing the effectiveness of sex offender policies (Barnes, 2011; Burchfield, 2011; Clevenger, 2012; Duwe et al. 2008; Jenkins, 1998; Levenson, 2009; Sample, 2011; Wright, 2009). The saturation on this work suggests what currently is in place may not be working in the way the policy makers intended. Politicians and the public need to understand the vast amount of research indicates sex offender legislation is not necessarily working; however, this does not mean elements of the legislation are not promising. In his research on correctional education, Lewis (2006) makes a valid point about misinterpretation between what is working, what is promising, and what is not working. The author argued Martinson's (1974) work on treatment programs in prison was misunderstood. The public, politicians, and even criminologists took Martinson's famous quote of "what works" as simply stating the programs in the correctional system—education, vocation, treatment—are not reducing recidivism. The issue here was Martinson was not necessarily saying what we have in place cannot work, but more so what is currently in place needs some revising. Martinson questioned the research used to assess the programs and found the lack of empirical evidence needed to justify whether these programs could work, not work, or were promising. Most individuals do not take into consideration this element of what Martinson was trying to address. This issue applies to criminal justice policy because there is a need for advanced empirical research to accurately assess legislation. Simply

applying criminal justice policy without thorough evaluations over time as Sherman et al. (2006) emphasized sets an unwanted precedent in our system for deterring crime. The use of legal impact studies to assess legislation provides more advanced empirical research to truly understand whether legislation is working, not working, or is promising.

When examining current and previous sex offender legislation, there are a few reasons as to why this legislation may not be working as efficiently as it should. One factor could be due to the moral panic and need for policy based on “stranger-danger.” The problem with sex offender policy based on this notion is that research has shown time and again that approximately 70% of all sex offense cases are committed by someone the victim knows, not a stranger (Barnes, 2011; Fortney, Levenson, Brannon, & Baker, 2007; Jenkins, 1998; LaFond & Winick, 1998; Merriam & Salkin, 2008; Terry, 2006; Terry & Ackerman, 2009; Williams-Taylor, 2012). What appears to be implemented in sex offender policy is the “one-size-fits-all” model. The assumption by the public is sex offenders are strangers who commit extreme cases; therefore, the need for politicians to implement legislation based on “stranger-danger” is vital to the safety of the public. If research demonstrates most sex offenses are committed by someone known to the victim, then the policymakers are not creating policy based on what actually is occurring in this type of crime. Instead, policymakers are pushing all types of sex offenses together to fit one type of legislation. Adherence to this model may be one reason why sex offender policies tend to be problematic or appear ineffective.

Another issue is the framework of the “one-size-fits-all” sex offender policy model. An examination of sex offender policies such as Megan’s Law and residency restrictions indicate legislation combining all types of offenders committing various sex

offenses. Policy should be reconstructed to accommodate the 70% of sex offenders who are known to their victims versus legislation solely focused on preventing “stranger-danger.” This may be a difficult task to implement separate sex offender legislation policies; thus, it is important to look at what may be promising in terms of sex offender programs and see whether these approaches could be implemented as policy.

The Containment Approach: Can We Manage Convicted Sex Offenders in the Community?

Sex offender researchers have discussed the containment approach for the past few decades. The containment approach involves five components: a victim-centered philosophy, multidisciplinary partnerships, individualized case management, multiagency policies and protocols which emphasize consistency, and quality control involving monitoring and evaluations of programs (English, 1998; English 2009). The idea behind the containment approach is sexual offending spans over one’s lifetime; however, there has been the argument by some researchers that this is not the case (Federoff & Moran, 1997; Griffin & West, 2006).

What is unique about the containment approach is the emphasis on utilizing various agencies to take part in the individualized treatment of the convicted sex offender. Most policies focus on the victim-centered philosophy where disclosure of information about the sex offender is made public or their residency must fall within a specific parameter away from places where children congregate. The collaboration component relies on teamwork by the probation/parole officer, a treatment provider, and a polygraph examiner, all of which are part of a case management team (English, 1998). This team involves three individuals who are stakeholders in the convicted sex offender’s

recovery. A team also may include a prison treatment provider, a therapist, and other individuals involved in the case. The individualized treatment involves a case management plan to analyze all surveillance of the convicted sex offender on a day-to-day basis (English, 1998). Information about the individual is gathered and a plan is tailored to meet the specific needs of the convicted sex offender. This information can range from sexual arousal patterns to psychological behaviors and childhood trauma. Sex offender specific therapy is then developed to help the individual throughout their reentry process as well as their continued living in the community. Individualized treatment options appear to be lacking in current legislation. Research focused on the small amount of containment approach programs in existence show a promising effort (English, Pullen, & Jones, 1996); however, issues with this method according to some researchers involve a misinterpretation of sex offending—that the sex offender may never be cured and the convicted sex offender once released should have all privacy rights removed by the government (Federoff & Moran, 1997; Griffin & West, 2006).

Behavior Modification: A Psychological Approach

Behavior modification is a widely used sex offender treatment approach (Griffin & West, 2006). Variations of this treatment include identifying the problematic behavior, recognizing possible cognitive dysfunction in an attempt to restructure cognitive ability, and modify one's behavior to exclude any unusual sexual appetites. In a meta-analysis conducted on sex offender treatment, Hanson, Gordon, Harris, Marques, Murphy, Quinsey, & Seto (2002) found a lower recidivism rate overall for convicted sex offenders who participated in some type of current psychological treatment such as cognitive-behavior therapy. Jennings & Deming (2013) argued, however, that “behavior” needs to

focus on sensibility rather than therapy which would improve sex offender treatment. The clinician or therapist needs to be sensitive to the physical space of where therapy takes place, while establishing a basic foundation of rules supporting and reinforcing pro-social behavior. The therapist also must engage in roving eye contact, covering all individuals in the group while using non-intrusive, non-verbal, and selective reinforcement to facilitate meaningful social interactions among the convicted sex offenders. The authors argued these techniques may enhance the treatment as cognitive behavioral group therapy is moving into more of a multi-model with the need to emphasize behavior.

The Good Lives Model

Ward & Stewart (2003) discussed the good lives model of sex offender treatment. This model focuses on internal and external conditions of the individual to promote meaningful action through what are considered “primary and secondary human goods” (p. 356). Primary human goods evolve out of basic needs whereas secondary goods are secure ways in maintaining these basic needs. Relationships, work, and communication can be displayed as basic needs individuals should have to live a good life. When examining criminal behavior, the good lives model suggests good behavior would be interrupted if the individual lacks a scope/plan, which is intensified when a conflict in achieving the goal of obtaining primary and/or secondary goods occur. A sex offender may try to seek intimacy (their primary human good) through rape (secondary human good) which in turn causes a rift in one’s ability to become a good human being. The goal of sex offender therapy through this approach would emphasize identifying what relationships the convicted sex offender finds appealing in terms of what is socially acceptable, and to provide the internal and external skills and conditions to establish

healthy relationships. The secondary goods would then be secure ways in achieving healthy relationships. While this method is one way to expand relationships, purpose of one's life, and personal meaning, there is not much literature on this type of approach to determine effectiveness.

How Do We Fix Somewhat Broken Legislation?

Even though each approach listed above may have garnered support, the problem would be how to incorporate these methods in policy legislation. The policies currently in place have proven to be more crime-control based with the need to protect the community and keep sex offenders banished from society (Barnes, 2011; Burchfield, 2011). In addition, the legislation currently imposed often has been assessed empirically to be ineffective, yet still in existence. Part of this could be due to the public's perception of the sex offender as a whole. One of the myths Fedoroff & Moran (1997) argue is the widespread belief that sex offenders are all the same. In fact, the authors made a vital point in stating "placing all sex offenders in one category is as unwise as it is to classify all viruses" (p.16). Viruses may share some common characteristics, but not all viruses are deadly. Sex offenders are similar in that their need or desire to commit a sex offense may be similar, but there are a variety of sex offenses which fall under a more minor category such as statutory rape between two teenage lovers aged sixteen and eighteen with parents not approving or an exhibitionist.

Not every sex offender is a rapist or child rapist and murderer. Merriam & Salkin (2008) also addressed myths of sex offenders in their research on residency restrictions. In the myth about sex offenders being equally dangerous, the authors cite the case of John Evander Couey who raped and murdered nine-year-old Jessica Lunsford. In contrast,

Wendy Whitaker, a seventeen-year-old teen, had oral sex with a fifteen-year-old sophomore. Whitaker plead guilty, received five years' probation; however, she was on Florida's sex offender registry. At the time this article was published, Whitaker, married and twenty-eight, had been forced to move three times due to Florida's residency restriction legislation. Besides the common myth of "stranger-danger," the "one-size-fits-all" approach implies the reflection of the public's perception; therefore, the need to increase awareness about true sex offender statistics is imperative.

The three methods of sex offender treatment as listed above have been suggested to be implemented in sex offender policy, with the focus on the individual offender versus the "one-size-fits-all" approach. These forms of treatment may help long-term progress in deterrence of future sex crimes; however, the public would need to be on board to incorporate treatment of offenders within policy. The only way to make such a transition would be to inform the public of the true statistical information about sex offenders and sex offender policy. In addition, the media outlets would need to change the way in which they report sex offense crimes. The need to provide current and factual statistics on the nature of sex offenders, as well as providing disclaimers on any crime drama show addressing a sex offense is essential to educating the public. There has been a recent trend of shows such as Law and Order: SVU incorporating more true-to-form sex offense storylines regarding the victim-offender relationship, but much more needs to be done in all aspects of media.

Policy Implications of Sex Offender Residency Restrictions

Several criminologists have published work on the consequences of residency restrictions (Barnes, 2011; Burchfield, 2011; Levenson, 2009; Socia 2011b; Yung, 2007;

Zgoba et al., 2009). Some of the consequences include displacement of these convicted sex offenders to areas away from community and informal social control. One of the arguments stemming from this issue is the inability for convicted sex offenders, once released, to become productive citizens in society. Living away from the city, where therapists and other resources may be, without a car or other forms of transportation, away from work, may cause these individuals to be unsuccessful in reentry. As seen with the case of Wendy Whitaker, an individual convicted of a sex offense which may not be as serious as others has residential mobility issues because of the legislation.

In addition to isolation from resources, cost of incarceration could be seen as another issue stemming from statistically insignificant legislation. Individuals such as Wendy Whitaker could violate the legislation, return to an already overcrowded prison system, which would increase the cost to taxpayers. Then there is the need to address the reentry process as a whole. How can an individual in Wendy Whitaker's shoes successfully reenter society if he/she has to consistently move due to legislation? For the many individuals convicted of less threatening sexual offenses, how are they supposed to maintain a job as well as other requirements of parole if they consistently have to worry about housing?

Another consequence of this policy is the focus on "stranger-danger." The idea behind this policy is to remove the motivated offender away from the suitable targets; however, residential proximity is not the issue in terms of sexual recidivism. According to the Minnesota Department of Corrections report in 2007, social and relationship proximity is more appropriate to understand in relation to convicted sex offenders and recidivism. Seventy nine percent of sex offenders knew their victims in some capacity,

either through a friend, wife, coworker, or other relation and approximately 85% of sex offense crimes took place in the offender's home or somewhere outside of the residency restriction boundaries. This data suggest the focus on "stranger-danger" may be misguided.

Policymaking: The Welsh & Harris (2008) Way: Recommendations for New Sex Offender Legislation

The issue here is clear: in order to develop and implement policy with the goal of efficacy, the first step is to clearly define the problem for all involved—the stakeholders. The public needs to understand the facts of sexual offenses, what is common and uncommon, and not rely so heavily on sensationalized media stories. Welsh & Harris (2008) lay out a clear format of policy development. Stage one involves analysis of the problem. Addressing the need for change such as preventing sex crimes would be the first step, followed by a thorough analysis of the history of the problem while examining the potential causes of sex offenses. In addition, an examination of previous interventions is relevant. Throughout the research, legislation has been developed based on the "one-size-fits-all" sex offender. Steps need to be taken by policymakers to address this issue. Identifying stakeholders is crucial to this first stage. Besides policymakers, the need for community involvement as well as department of corrections, law enforcement agencies, sex offender therapists and psychologists, offenders, victims, and any other members of society who may benefit from the prevention of sex crimes is important. By conducting a discourse among these individuals, one can then see the barriers to change involved as well as those who support the change for policy. This step involves the need for the public to understand the true nature of sex offenses and statistics.

The second stage involves goals and objectives. What are we trying to accomplish in this new legislation? What are the objectives? We want to make sure there is a prevention of sex crimes; however, we also should take into consideration the individuals who have served their time, are out in the community, and may want to change their behavior. How do we increase informal social control among citizens who view all sex offenders in the same vein? What can be done to change the misperception of the majority of convicted sex offenders? The third stage is policy development. The need for legislation to cater to all types of offenders in this category is important because this element has been lacking in other sex offender legislation. How do we develop legislation that incorporates the extreme cases as well as the more common situations? How do we address the offender-known-to-the-victim relationship which research shows is more common? Policy needs to be developed with a theoretical component that addresses the issue of sexual abuse in the home and by acquaintances.

Action planning as stage four requires identifying what resources are needed to implement the new legislation as well as specifying dates as to when the policy would come into effect. To develop this new legislation, the costs of implementation, both monetarily and socially, need to be considered. Another essential factor is the start date of implementation and how long the policy should be in effect. Should the policy be a federal one, mandating all states such as Megan's Law or the Adam Walsh Act, or should the policy be separated by state such as the Jessica Lunsford Act? These are questions that need to be decided. With stage five, the actual policy would be implemented with the designation of data collection to analyze. In this stage, using a more advanced statistical tool such as an ARIMA model may benefit the overall process. Martinson (1974) did

question the validity of research design and tools—the ARIMA model has proven to be quite successful in assessing legal impact of legislation.

Stage six would take a look at the legislation impact. Is the legislation meeting the current goals and objectives? Are sex offenses decreasing? Are convicted sex offenders entering into society trying to be productive members while still following whatever probation or parole regulations? With the last stage, a reassessment and review of the policy would be implemented over time. After years of implementation, are we continuing to reduce all sex crimes, certain sex crimes, no sex crimes? Utilizing a more thought-enhancing approach to policy, involving all stakeholders, and incorporating the element of reassessment and review provides a more balanced way of addressing sex offender crimes.

Future Research: What is the Next Step?

Legal impact studies are essential to understanding criminal justice legislation effectiveness. This study is one of many needed to be conducted to continue to question the effectiveness of the current sex offender legislation, specifically residency restrictions. Legal impact studies on all states with sex offender residency restrictions should be implemented. Examining states by county are of relevant interest to see whether each county has an impact on convicted sex offenders. In addition, states that implemented sex offender residency restrictions early on should be assessed as they have enforced this legislation for longer periods of time.

Florida and Delaware, two states which implemented this legislation earlier than others, would be of high priority interest to assess whether sex offender residency restrictions appear to decrease sex offense crimes. Other states such as California that

appear to have different legislation per county also would be of interest to assess whether changes are occurring in counties with more aggressive buffer zones. The need for more comprehensive data also is relevant to continue research on sex offender residency restrictions. This current study provided monthly arrest rates, comparing two states similar in demographics and residency restriction legislation, while also utilizing a nonequivalent dependent variable. Having access to offender and victim demographics such as age, gender, race/ethnicity, and urban/rural/suburban residency could only further enhance the validity of legal impact studies on sex offender legislation research.

Availability to such data would be dependent upon the states' department of corrections or UCR reports, where additional information would need to be collected. The need for more research is important to our overall understanding of the legislation because individuals are being released every single day. Convicted sex offenders are entering communities, some may be trying to live a crime-free lifestyle. If we continue to base our legislation off of 20-30% of all sex offense cases, we are missing 70-80% of offenders--sex offense crimes where the victim-offender relationship is known. There is a need to address legislation that takes the victim-offender relationship into consideration.

The myth that all sex offenders are strangers and dangerous to society needs to be dissected. Now certainly the implication here is not to say all sex offenders are not dangerous or strangers. We know there are some violent individuals who commit sexual acts on victims unknown to the offender and have seen these cases in the media. However, research over time has indicated sex offenders are not all the same, are not always strangers, and not always dangerous. The goal of this study is to provide

awareness to citizens, politicians, and members of the community about the true facts of sex offenders and their crimes.

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Appendix A

(Extracted from Lewis (2009) used with permission)

Types of Effects

In examining legal impacts and using ITS designs, researchers should provide examples of diagrams showing whether the treatment caused a change in slope and/or intercept; if a change was abrupt or gradual (onset), permanent or temporary (duration), and whether the change was immediate or delayed (immediacy) (McDowall et al., 1980; Shadish et al., 2002). The following figures will demonstrate various outcomes when testing the impact of legislation using ITS.

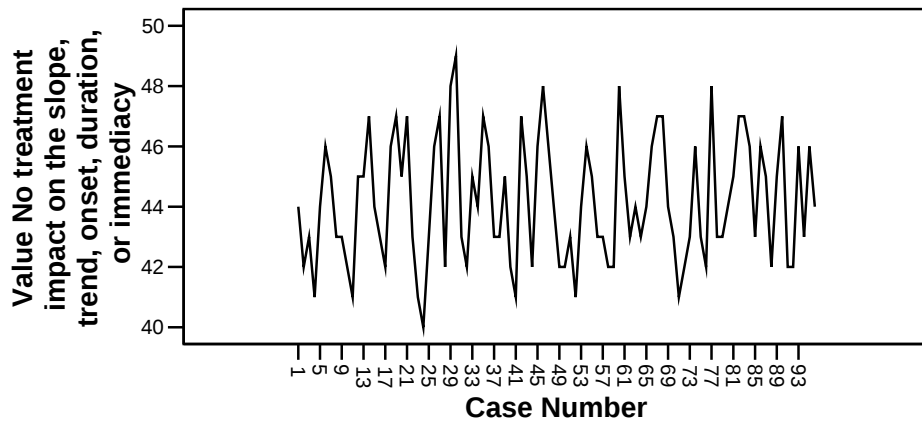


Figure A1. No treatment impact

In figure A1, observation #49 shows a treatment; however, even with the treatment, one can see the trend and slope remain the same with no changes in onset, duration, or immediacy.

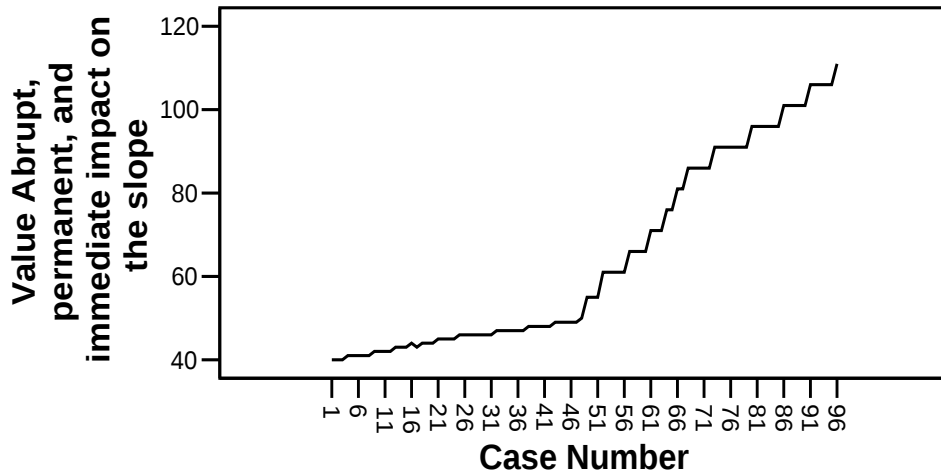


Figure A2. Abrupt, permanent, and immediate impact on the slope

Using observation #49 as the treatment point, one can see the onset was abrupt, meaning change occurred quickly, while the change was also continuous (permanent) and immediate with a climb upward.

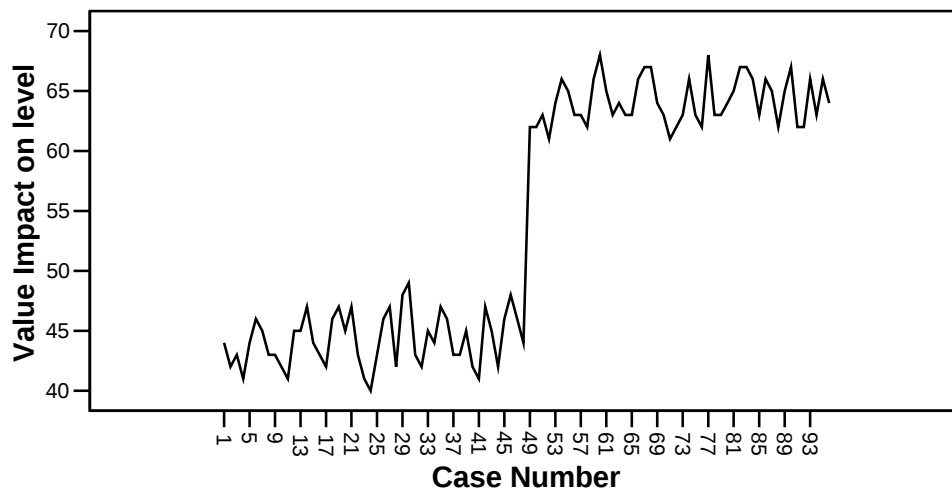


Figure A3. Abrupt, permanent, and immediate impact on the level (intercept)

Figure A3 also shows an abrupt, permanent, and immediate change; however the difference between Figure A3 and A2 is the change occurs in the level (intercept). Looking at observation #49, the change in the level (intercept) causes the post-treatment slope to have a different y-intercept than the pre-treatment slope. Both slopes are identical for the most part, yet the change in y-intercept is the key. This is why the abrupt change is more giant-looking (longer line) than what is shown in Figure A2.

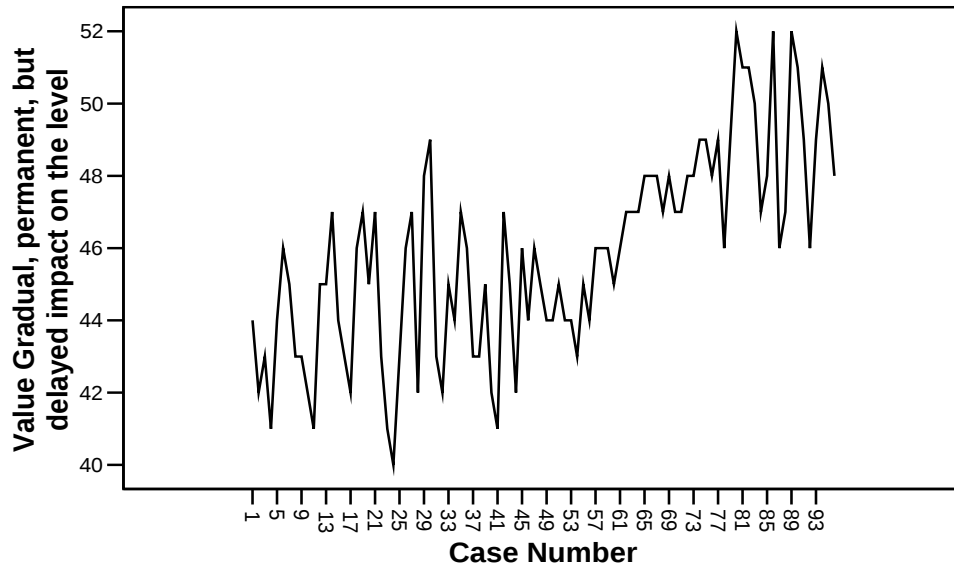


Figure A4. Gradual, permanent, but delayed impact on the level (intercept)

Figure A4 shows a gradual, permanent, and delayed impact of the level (intercept). The treatment was introduced at observation #49, yet has a delayed effect almost until observation #56, which then displays a gradual increase to a new level after an eight-month period of treatment introduced. This means the law may be on the books, but it takes time to see an impact. Once the gradual increase appears at the new level, the observations appear to stabilize showing a permanent effect of the crime trend.

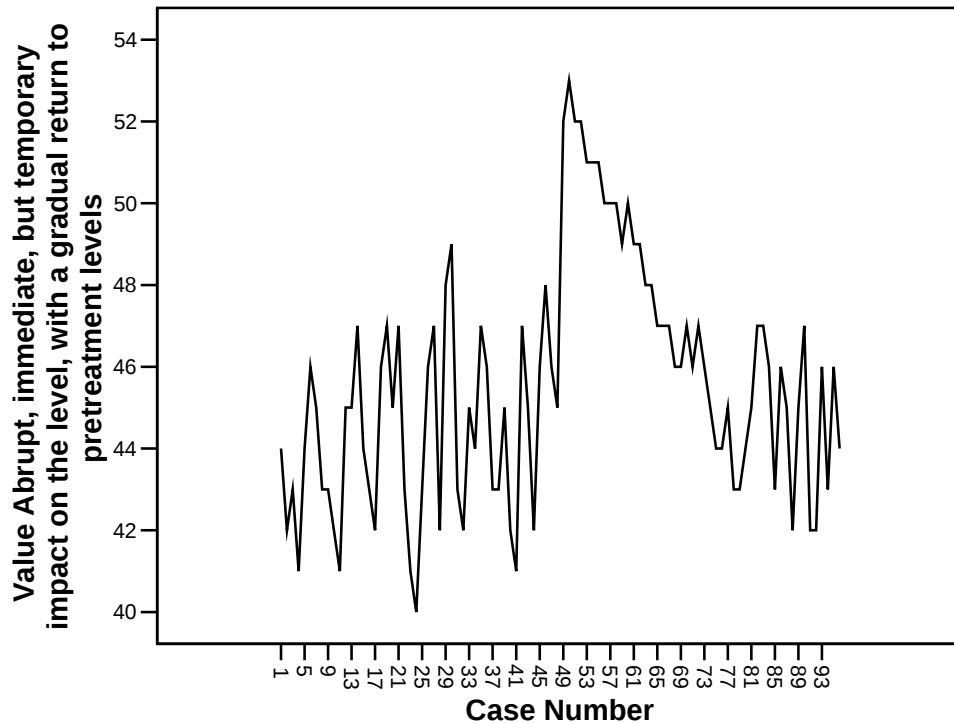


Figure A5. Abrupt, immediate, but temporary impact on the level (intercept) with a gradual return to pre-treatment levels

This pattern is typically common when examining legislation. Arrest rates may peak once new legislation has been enforced, usually between four and six months of the enactment of law, then a gradual decline begins to occur with a return to pre-treatment levels at approximately a year to two years after legislation was enacted. There was an abrupt and immediate impact after the legislation was enacted; however, this impact was not continuous (permanent). Therefore the impact did not continue over time and the levels returned to where they originated pre-treatment.

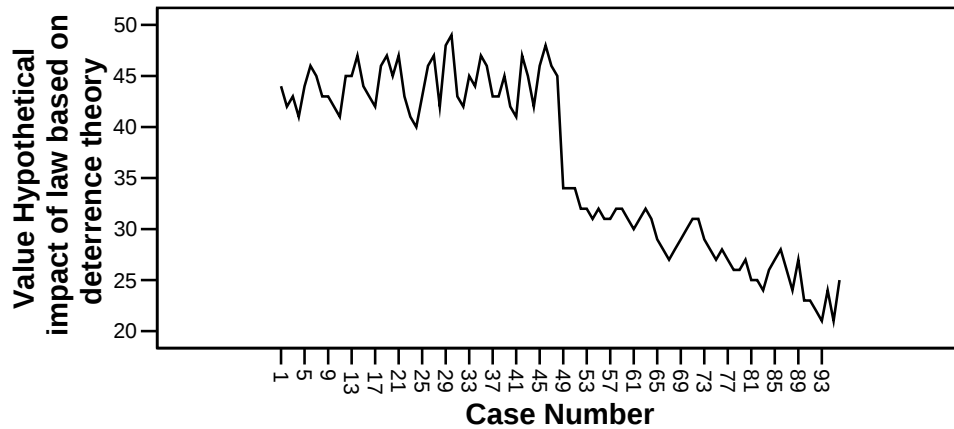


Figure A6. Hypothetical impact of law based on deterrence and modified deterrence theories

Figure A6 is an ideal result for legal impact studies. This model indicates the law had an impact through a deterrent effect. A model like this would require the legislation to be publicized by state and local media as well as law enforcement agencies prior to implementation. The figure shows an abrupt, immediate, and permanent effect on both the slope and level (intercept) causing post-treatment arrest rates of rape to significantly decline. Removing the motivated offender from the equation using residency restrictions would decrease victimization of rape.

Appendix B

ACFs and PACFs for Models 2-8

ALRape

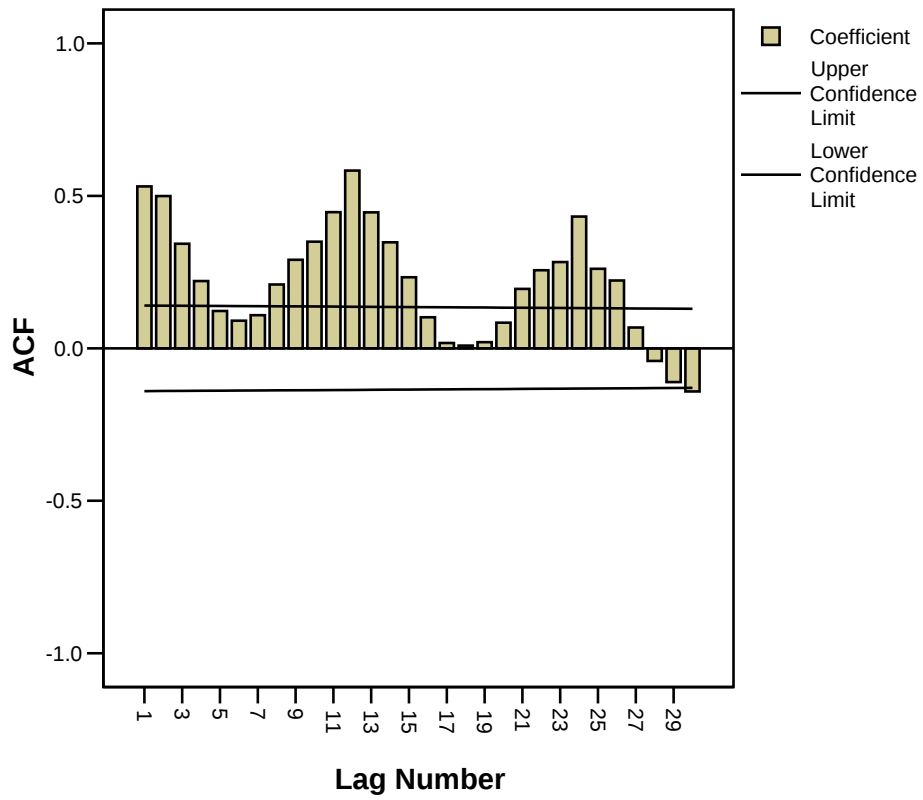


Figure B15. ACF for model 2 AL monthly arrest rates for rape ARIMA (0,0,0) (0,0,0)₁₂.

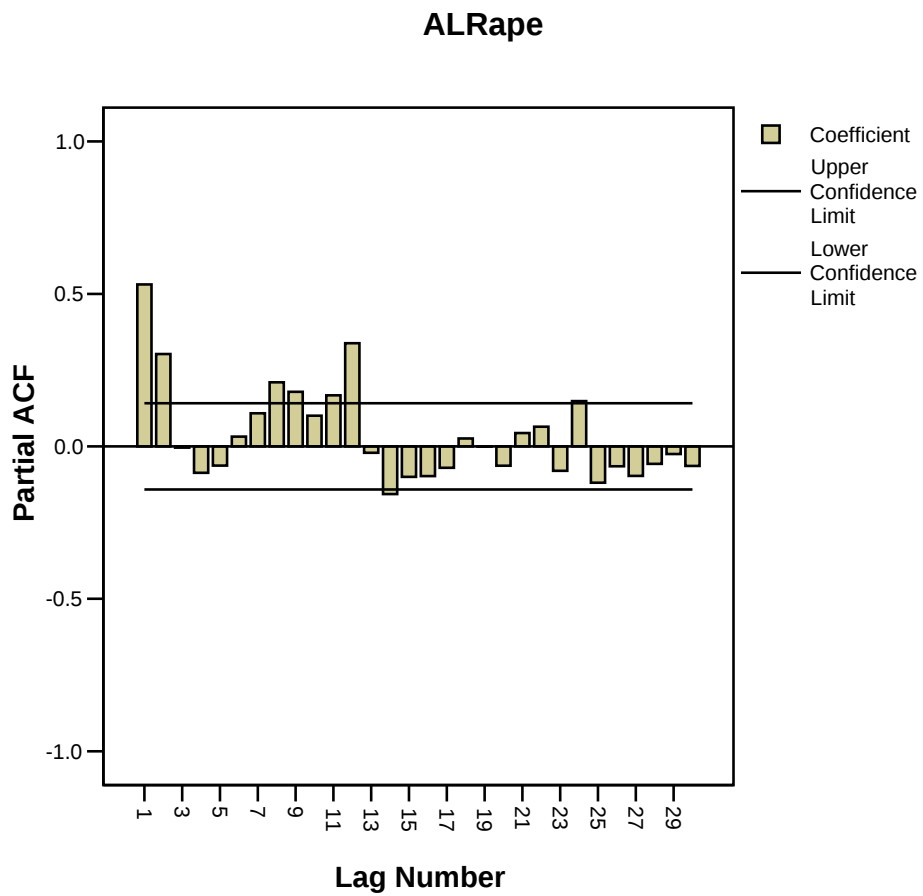


Figure B16. ACF for model 2 AL monthly arrest rates for rape ARIMA (0,0,0) (0,0,0)₁₂.

Error for ALRape from ARIMA, MOD_1 CON

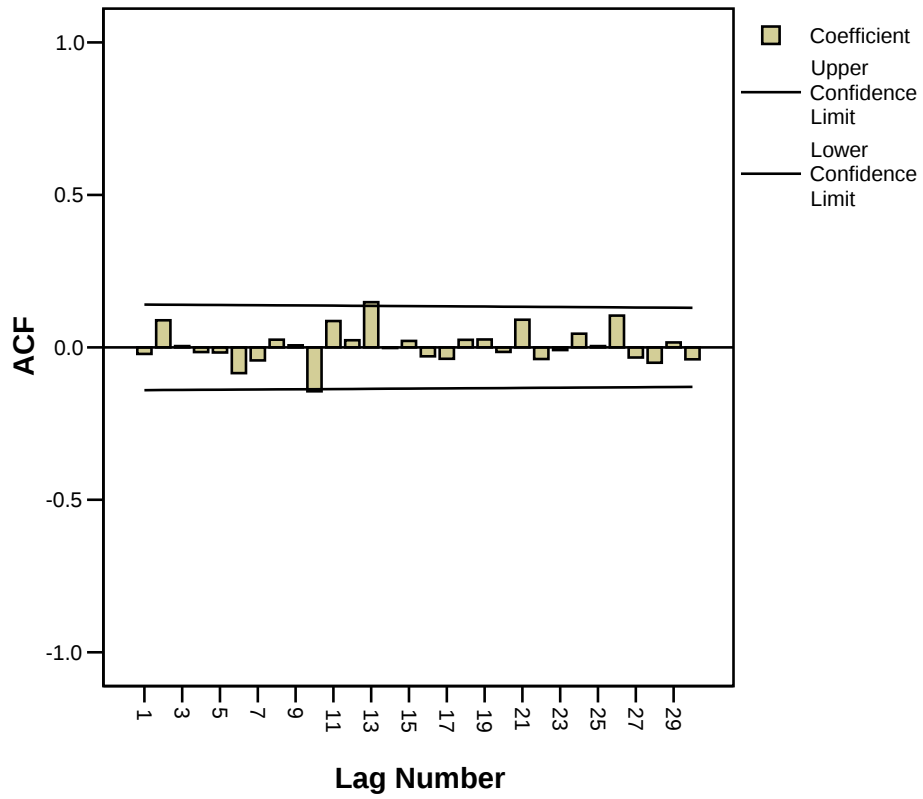


Figure B17. ACF for model 2 AL monthly arrest rates for rape ARIMA (1,0,1) (1,0,1)₁₂.

Error for ALRape from ARIMA, MOD_1 CON

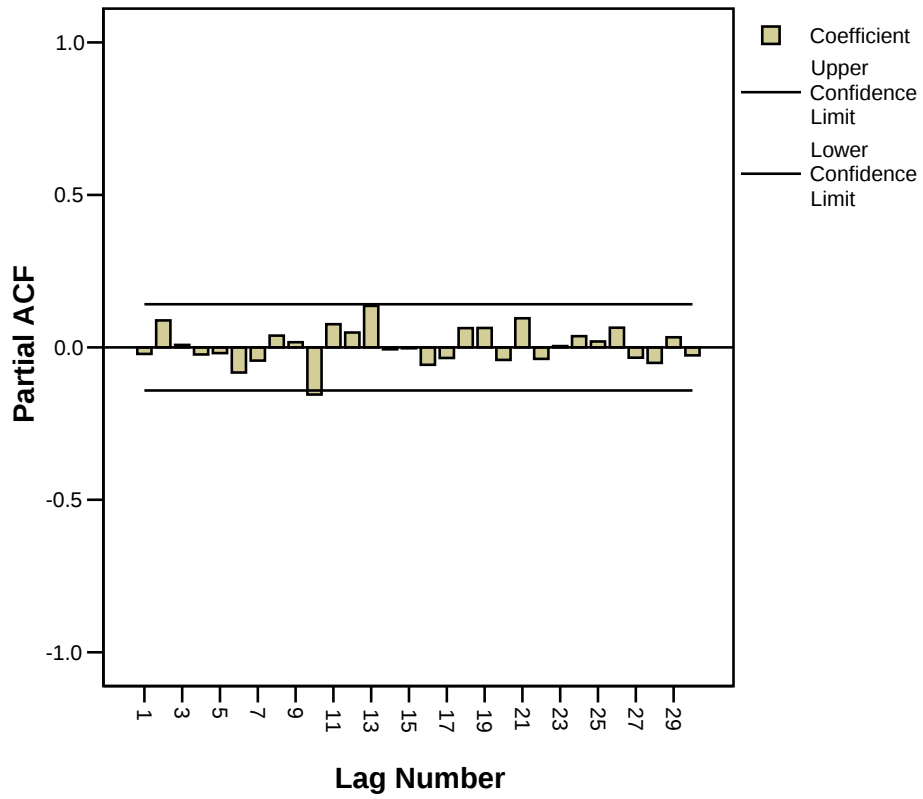


Figure B18. PACF for model 2 AL monthly arrest rates for rape ARIMA (1,0,1) (1,0,1)₁₂.

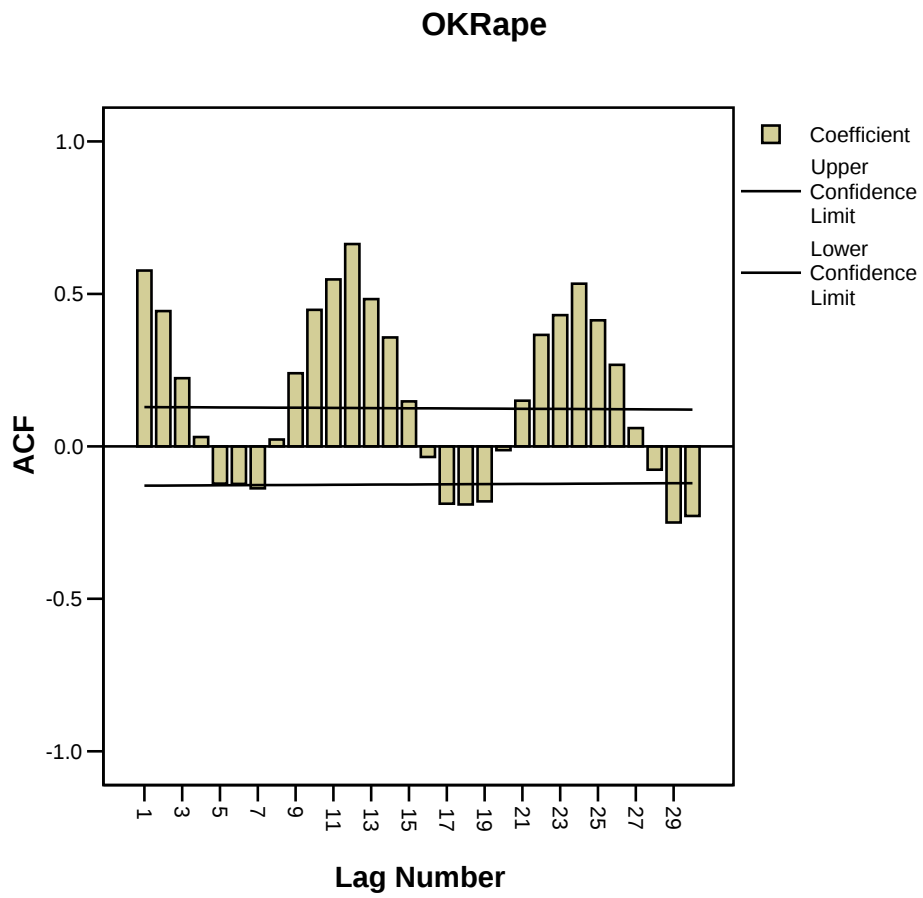


Figure B19. ACF for model 3 OK monthly arrest rates for rape ARIMA (0,0,0) (0,0,0)₁₂.

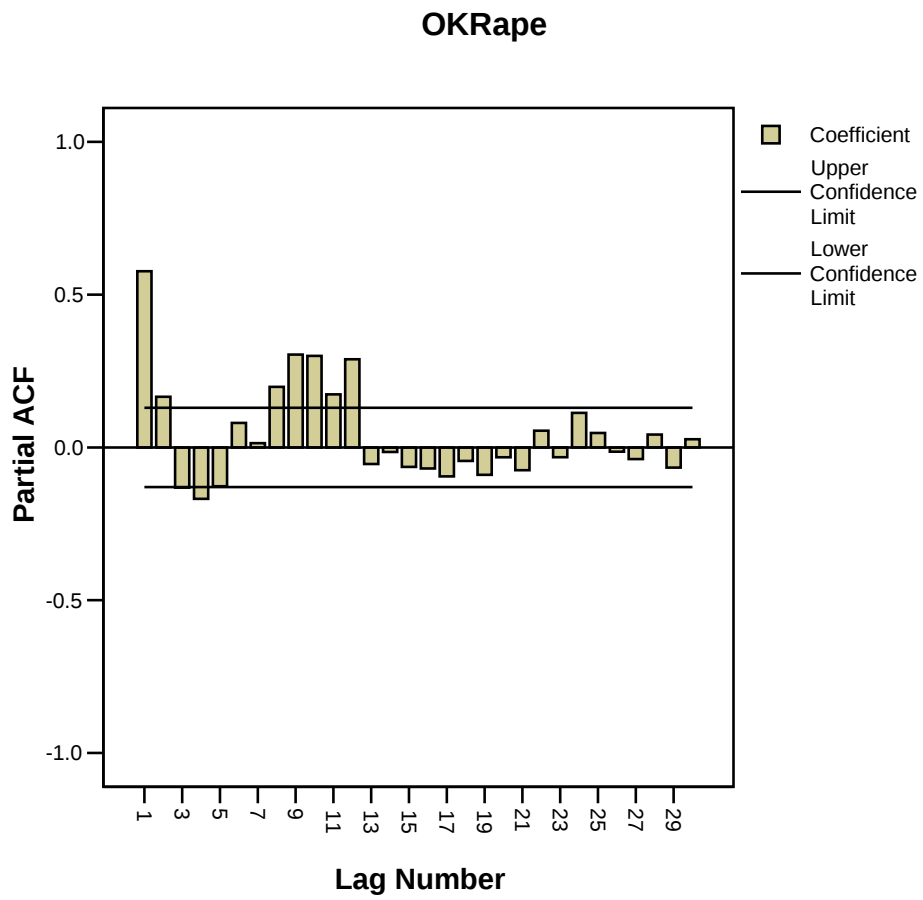


Figure B20. PACF for model 3 OK monthly arrest rates for rape ARIMA (0,0,0) (0,0,0)₁₂.

Error for OKRape from ARIMA, MOD_5 CON

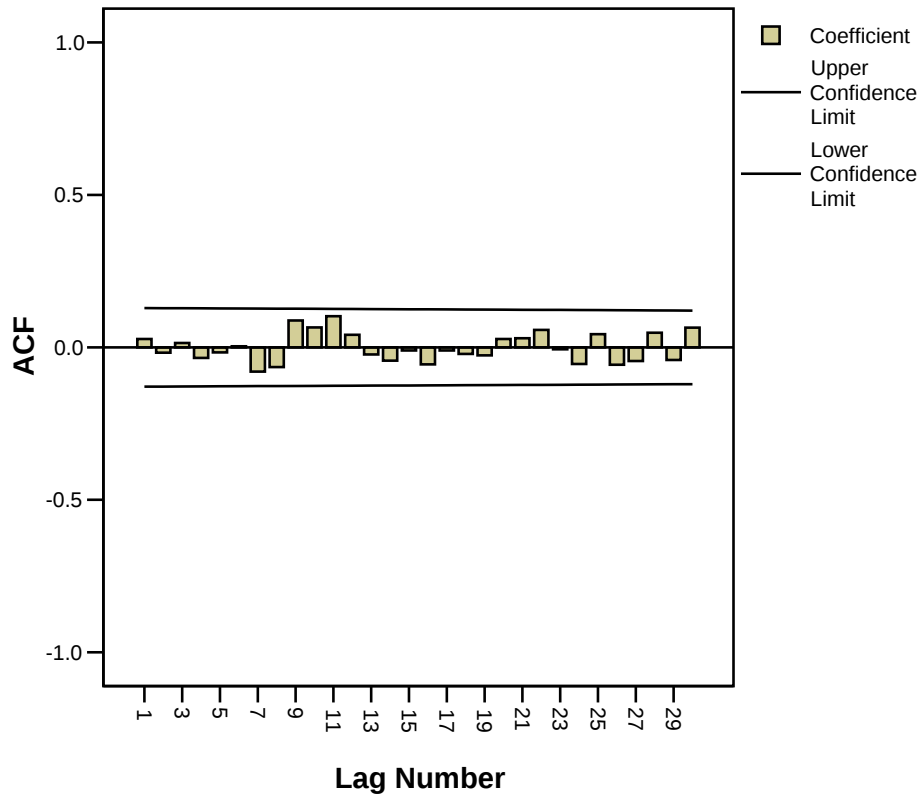


Figure B21. ACF for model 3 OK monthly arrest rates for rape ARIMA (1,0,1) (1,0,1)₁₂.

Error for OKRape from ARIMA, MOD_5 CON

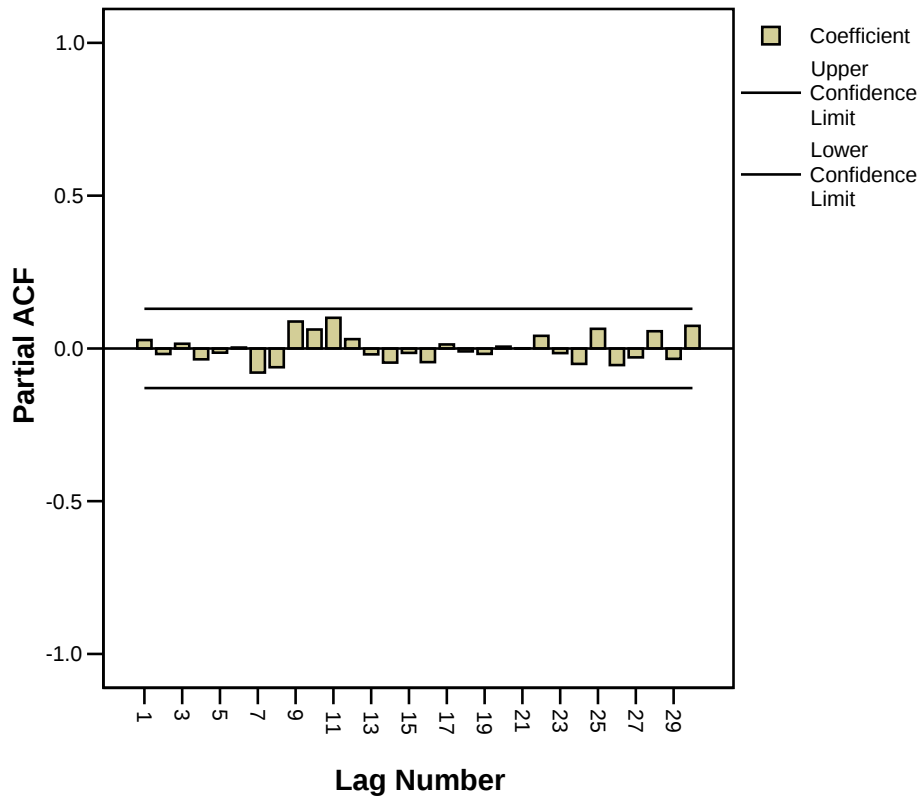


Figure B22. PACF for model 3 OK monthly arrest rates for rape ARIMA (1,0,1) (1,0,1)₁₂.

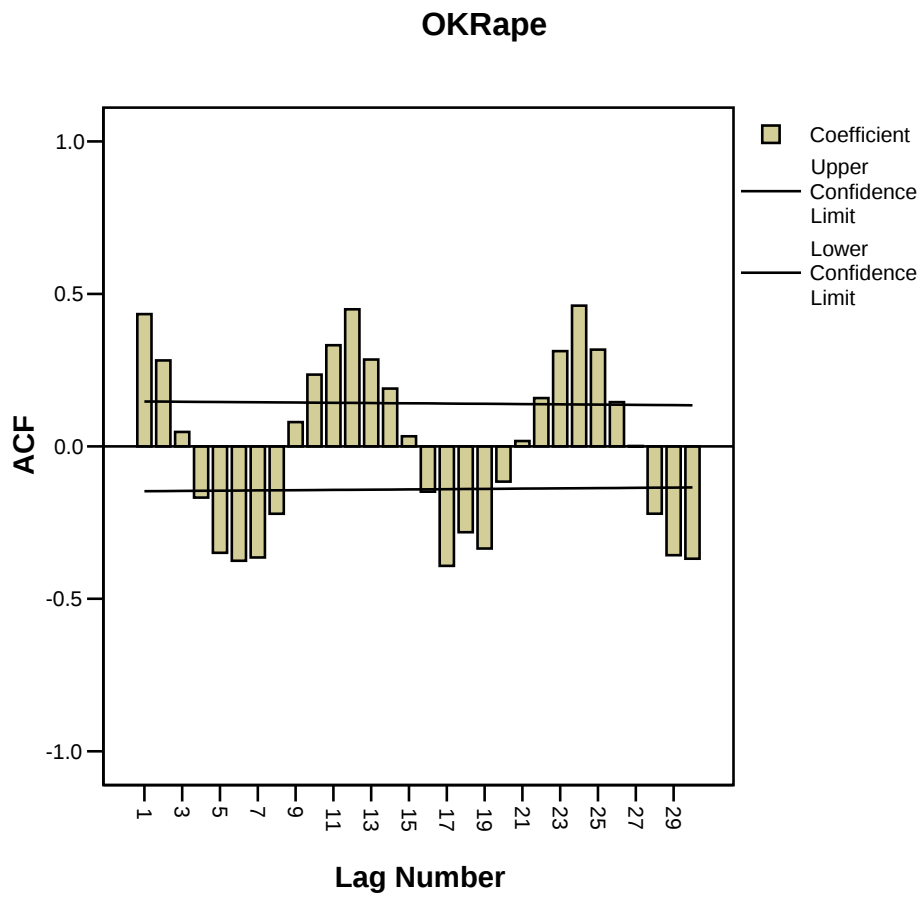


Figure B23. ACF for model 4 OK monthly arrest rates for rape ARIMA (0,0,0) (0,0,0)₁₂.

OKRape

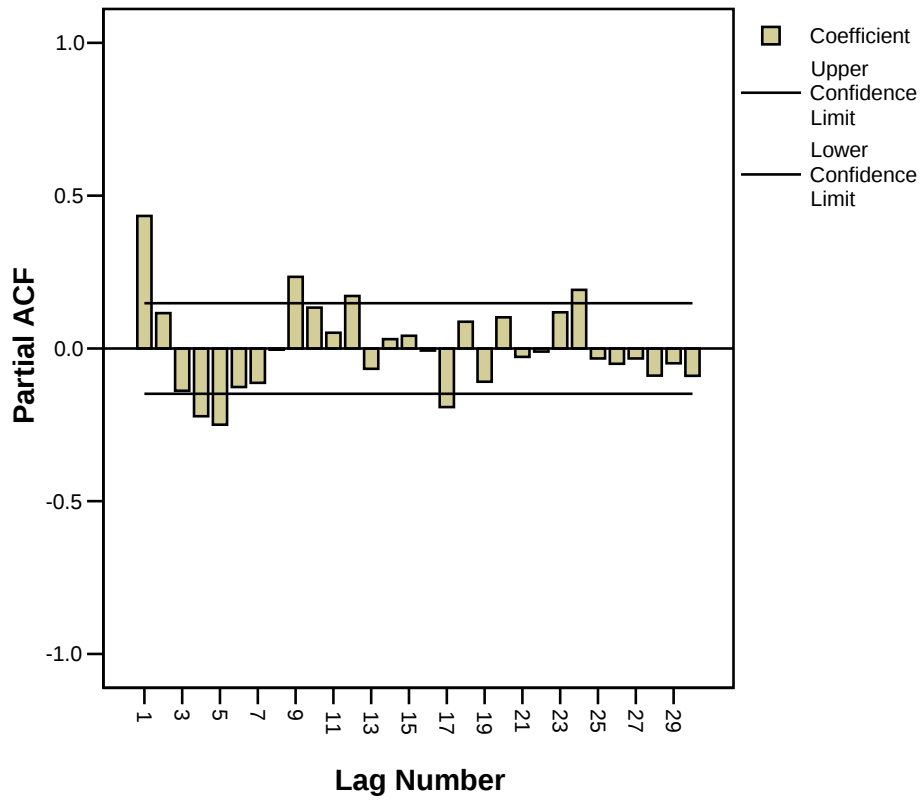


Figure B24. PACF for model 4 OK monthly arrest rates for rape ARIMA (0,0,0) (0,0,0)₁₂.

Error for OKRape from ARIMA, MOD_7 CON

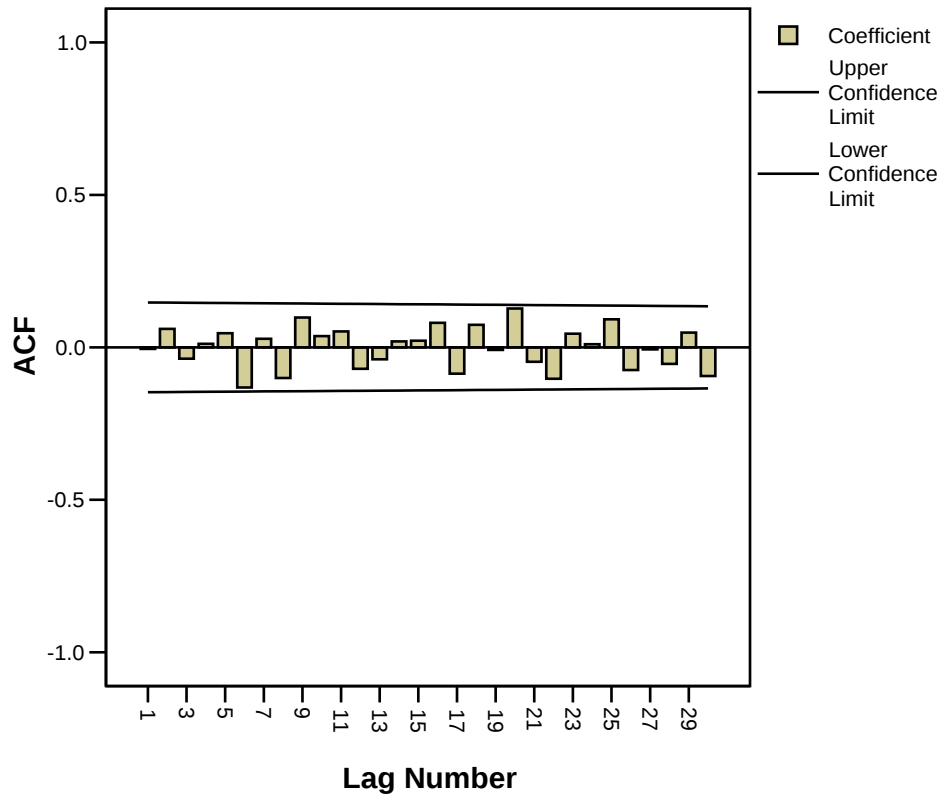


Figure B25. ACF for model 4 OK monthly arrest rates for rape ARIMA (1,0,1) (1,0,1)₁₂.

Error for OKRape from ARIMA, MOD_7 CON

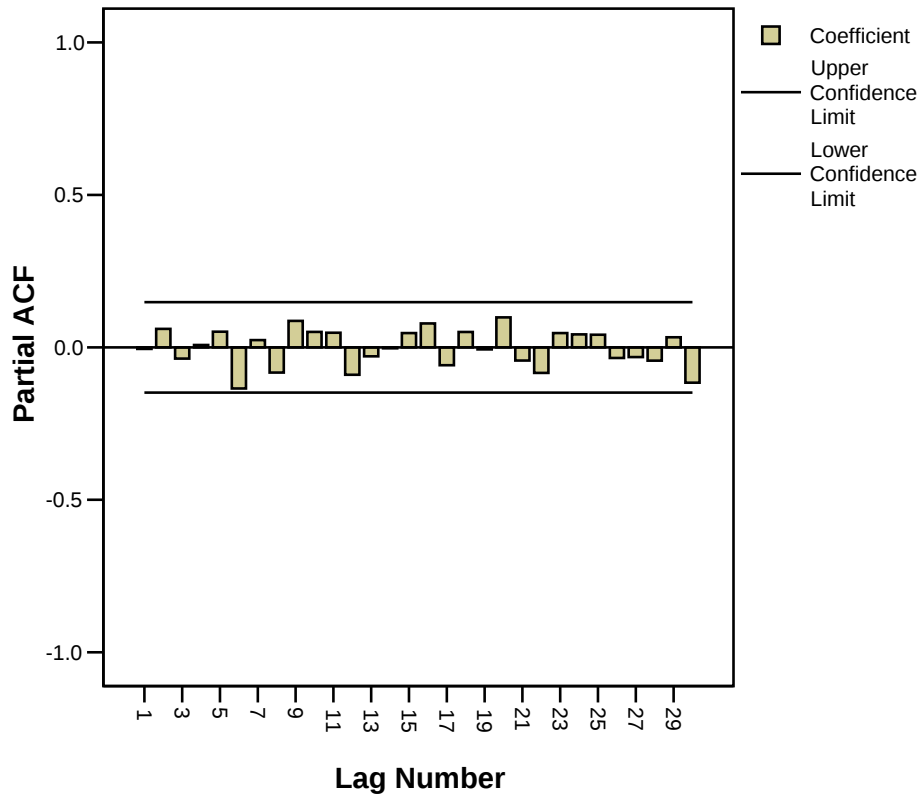


Figure B26. PACF for model 4 OK monthly arrest rates for rape ARIMA (1,0,1) (1,0,1)₁₂.

ALRobbery

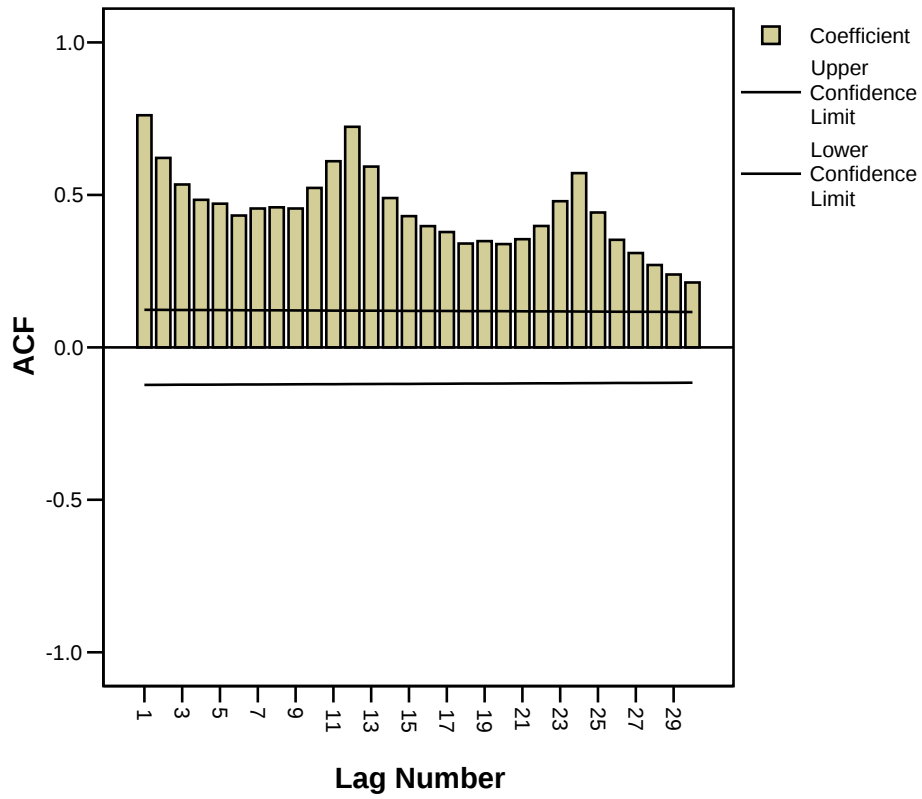


Figure B27. ACF for model 5 AL monthly arrest rates for robbery ARIMA (0,0,0) (0,0,0)₁₂.

ALRobbery

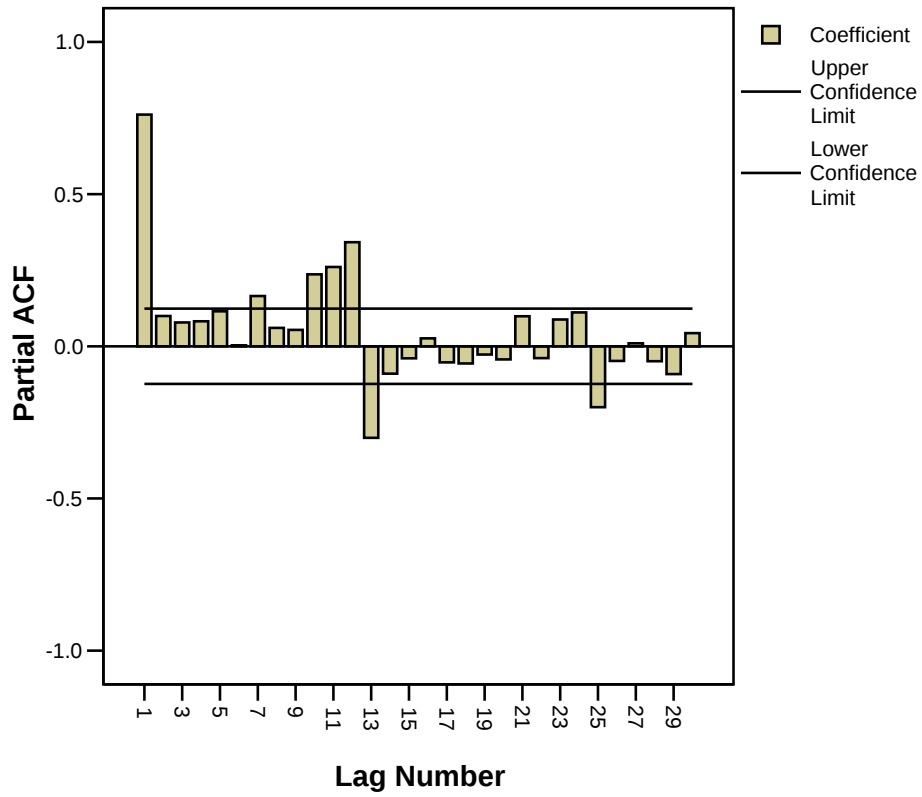


Figure B28. PACF for model 5 AL monthly arrest rates for robbery ARIMA (0,0,0) (0,0,0)₁₂.

Error for ALRobbery from ARIMA, MOD_19 CON

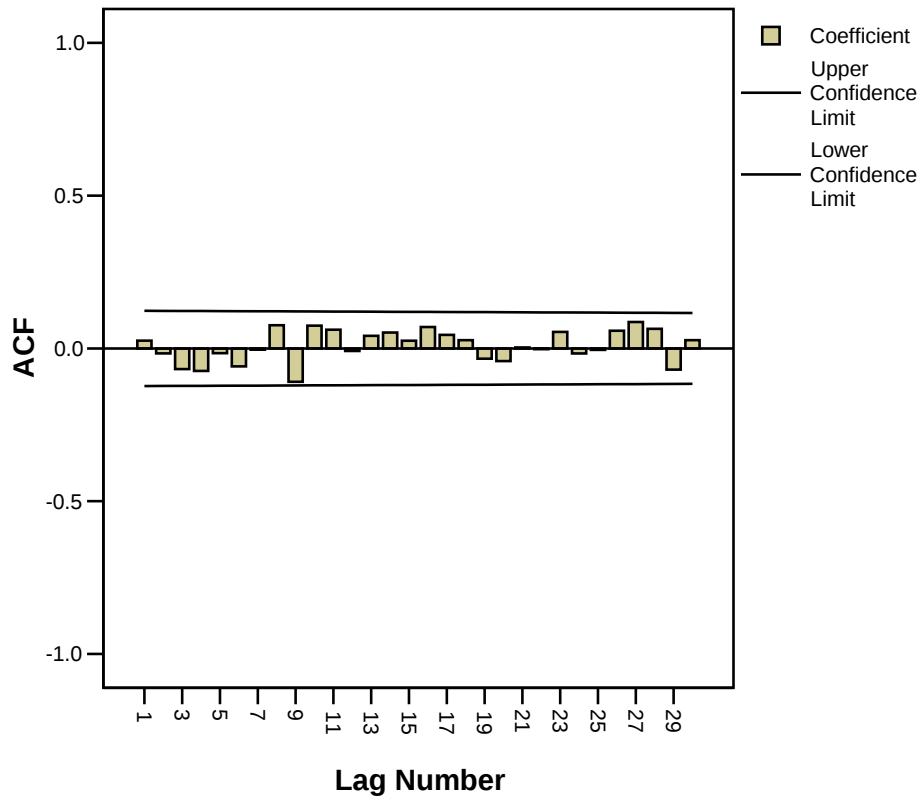


Figure B29. ACF for model 5 AL monthly arrest rates for robbery ARIMA (1,0,1)(1,0,1)₁₂.

Error for ALRobbery from ARIMA, MOD_19 CON

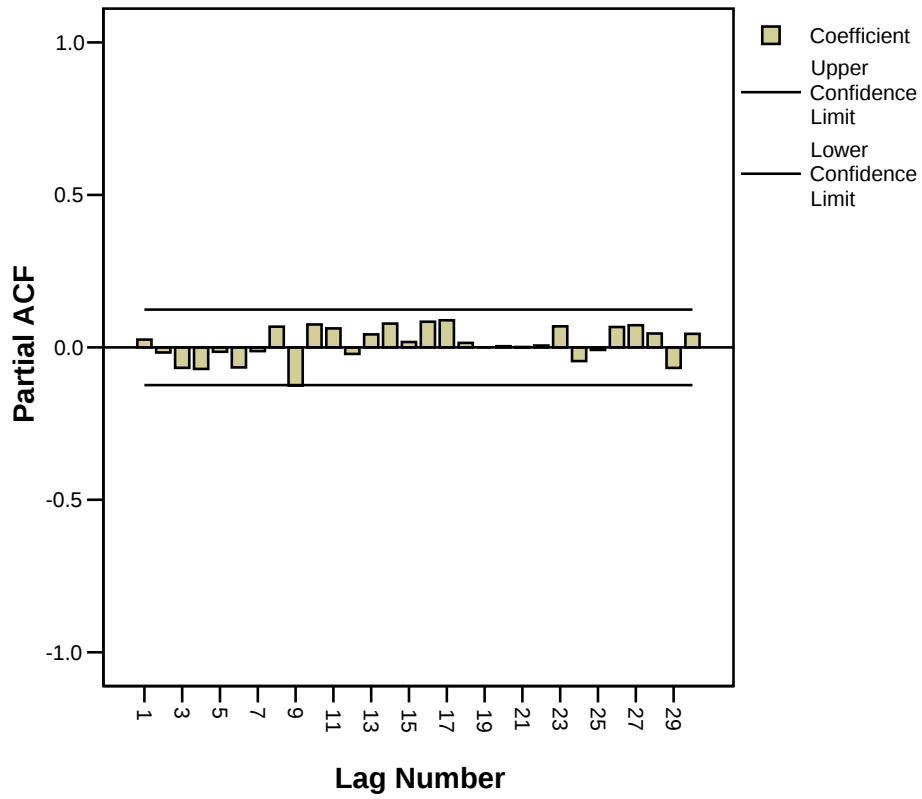


Figure B30. PACF for model 5 AL monthly arrest rates for robbery ARIMA (1,0,1) (1,0,1)₁₂.

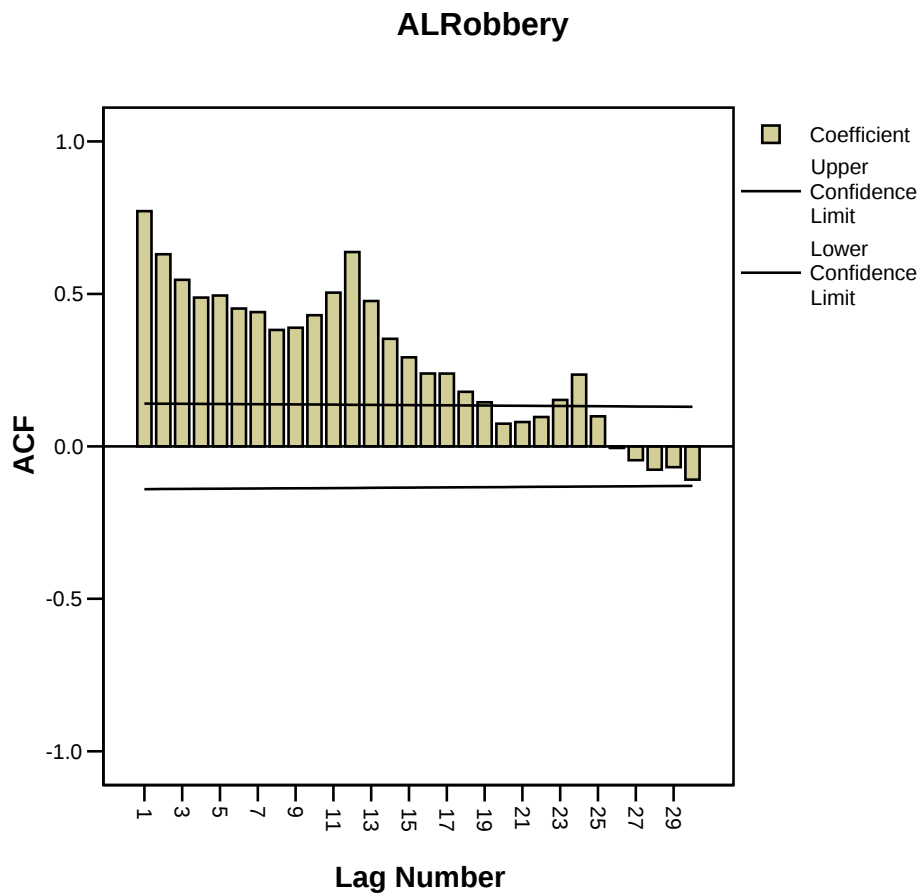


Figure B31. ACF for model 6 AL monthly arrest rates for robbery ARIMA (0,0,0) (0,0,0)₁₂.

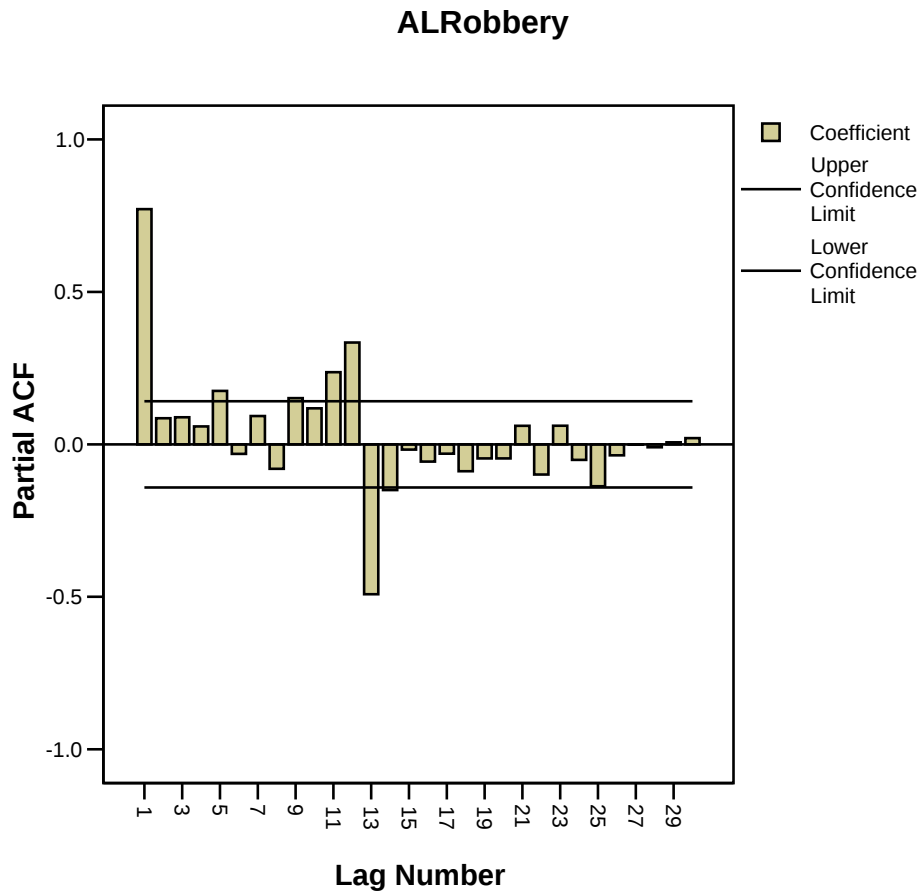


Figure B32. PACF for model 6 AL monthly arrest rates for robbery ARIMA (0,0,0) (0,0,0)₁₂.

Error for ALRobbery from ARIMA, MOD_25 CON

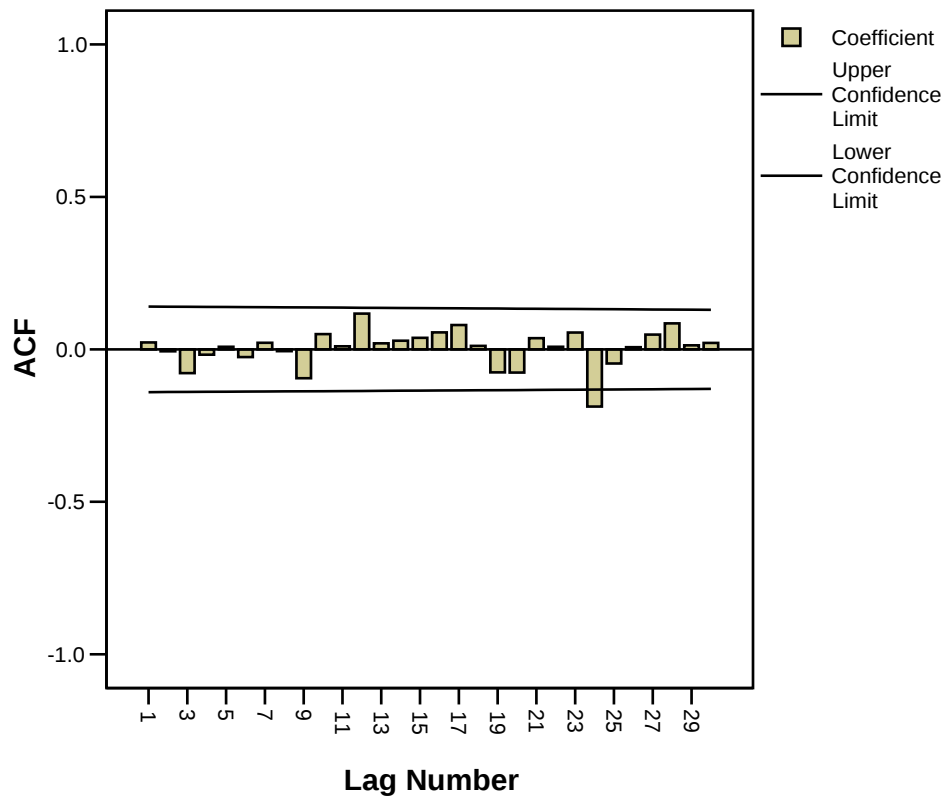


Figure B33. ACF for model 6 AL monthly arrest rates for robbery ARIMA (1,0,1) (1,0,1)₁₂.

Error for ALRobbery from ARIMA, MOD_25 CON

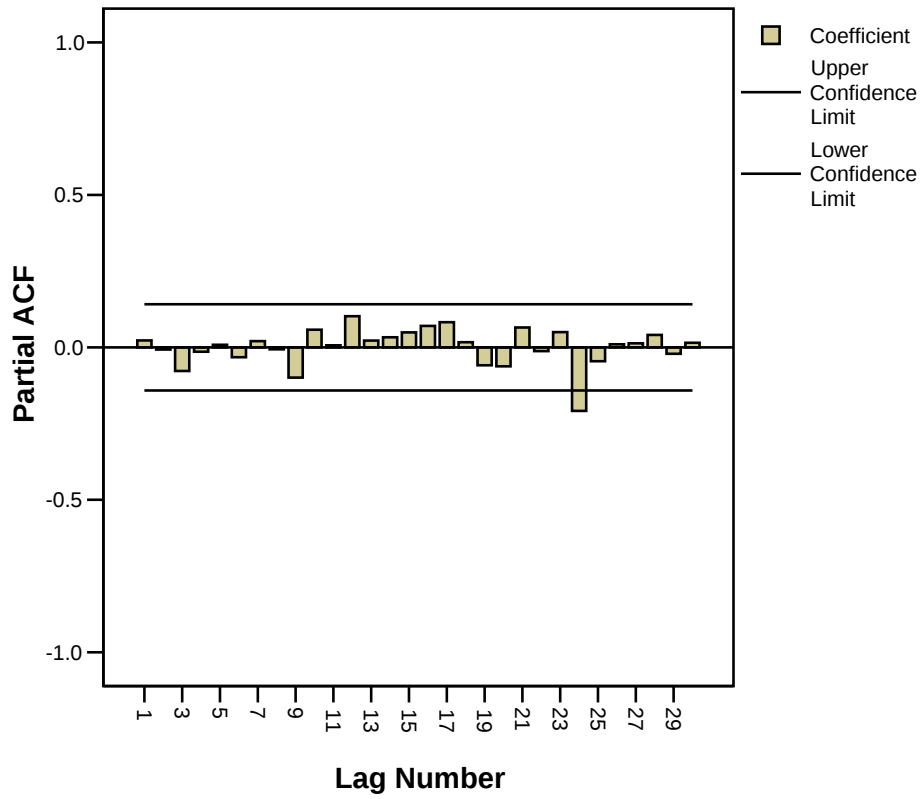


Figure B34. PACF for model 6 AL monthly arrest rates for robbery ARIMA (1,0,1)
(1,0,1)₁₂.

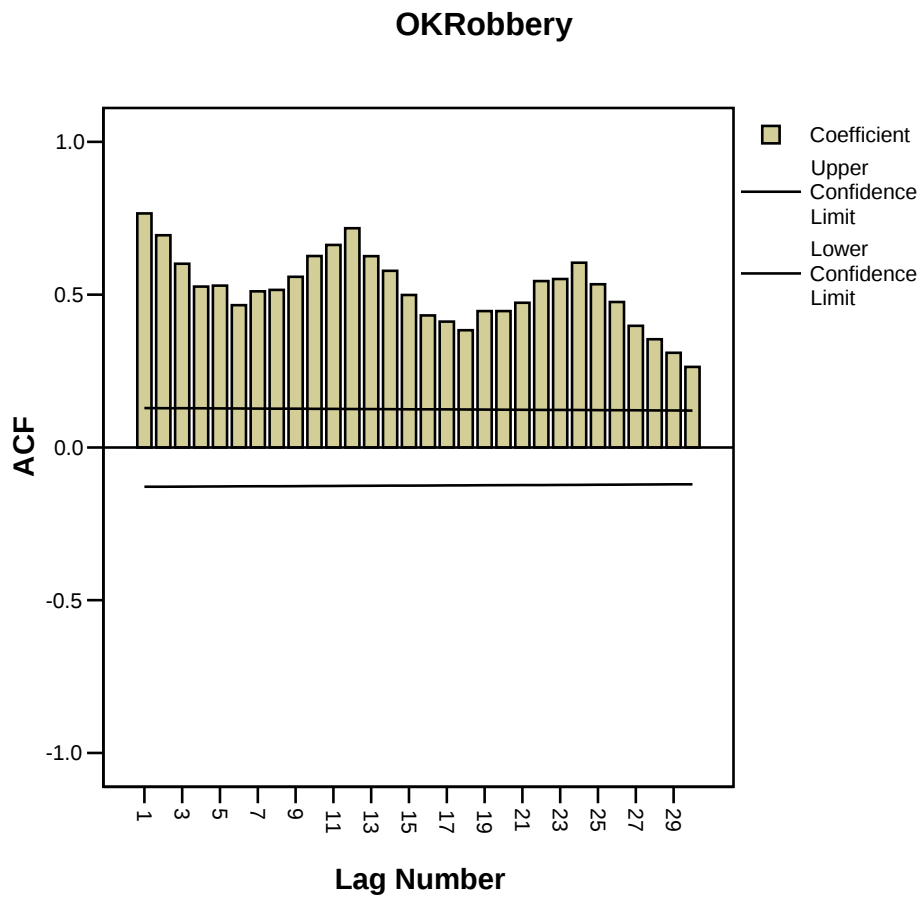


Figure B35. ACF for model 7 OK monthly arrest rates for robbery ARIMA (0,0,0) (0,0,0)₁₂.

OKRobbery

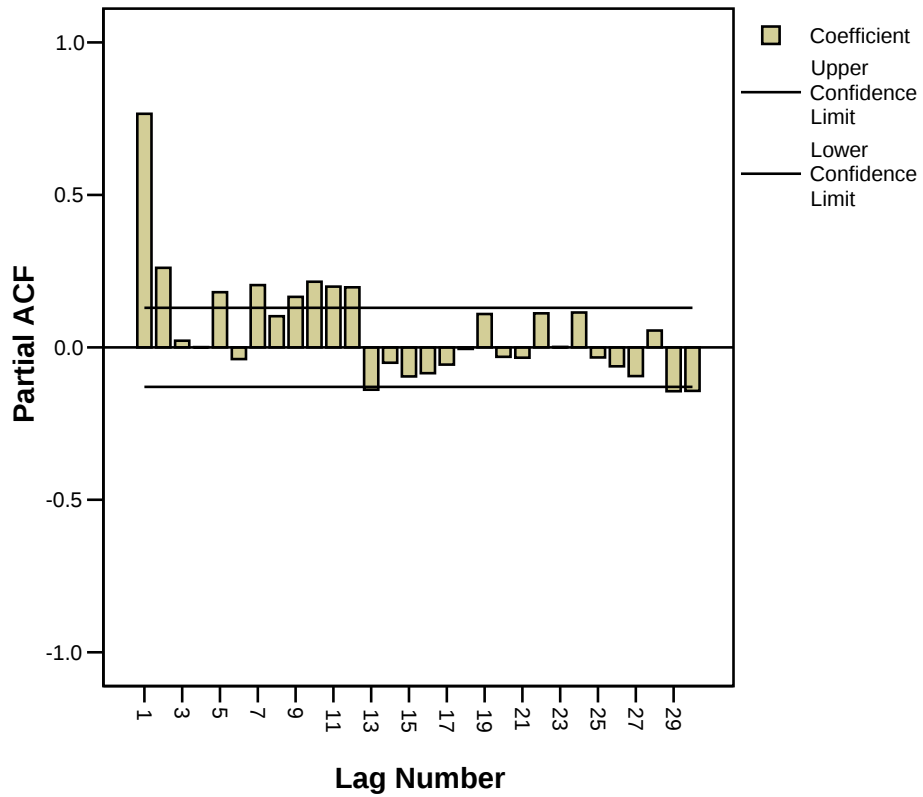


Figure B36. PACF for model 7 OK monthly arrest rates for robbery ARIMA (0,0,0) (0,0,0)₁₂.

Error for OKRobbery from ARIMA, MOD_47 CON

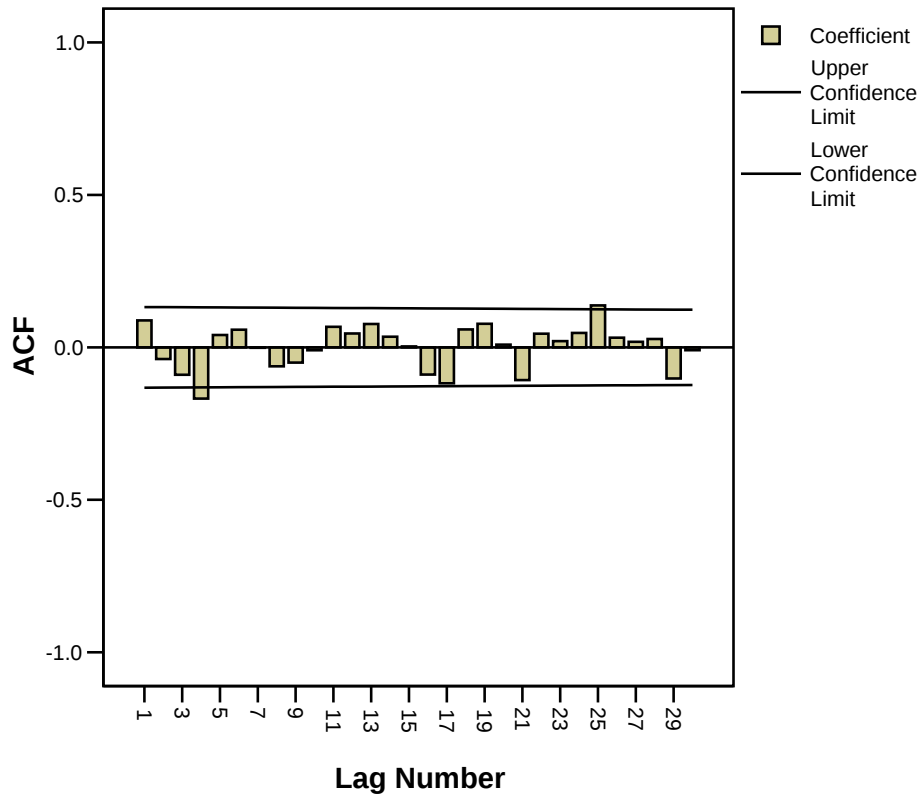


Figure B37. ACF for model 7 OK monthly arrest rates for robbery ARIMA (1,0,1) (0,1,1)₁₂.

Error for OKRobbery from ARIMA, MOD_47 CON

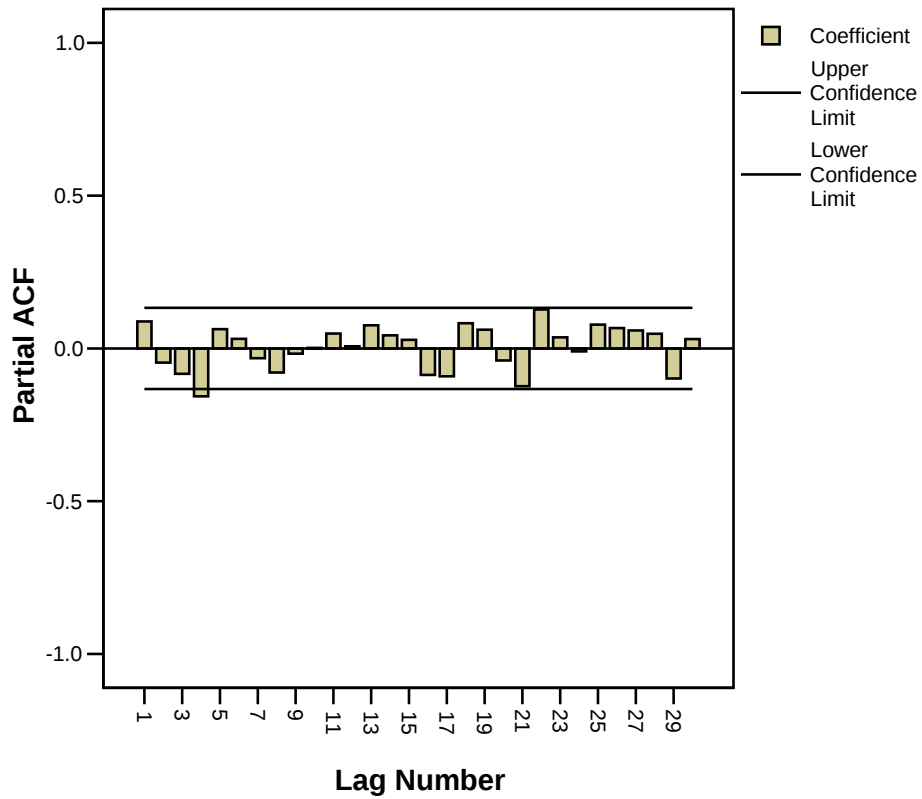


Figure B38. PACF for model 7 OK monthly arrest rates for robbery ARIMA (1,0,1) (0,1,1)₁₂.

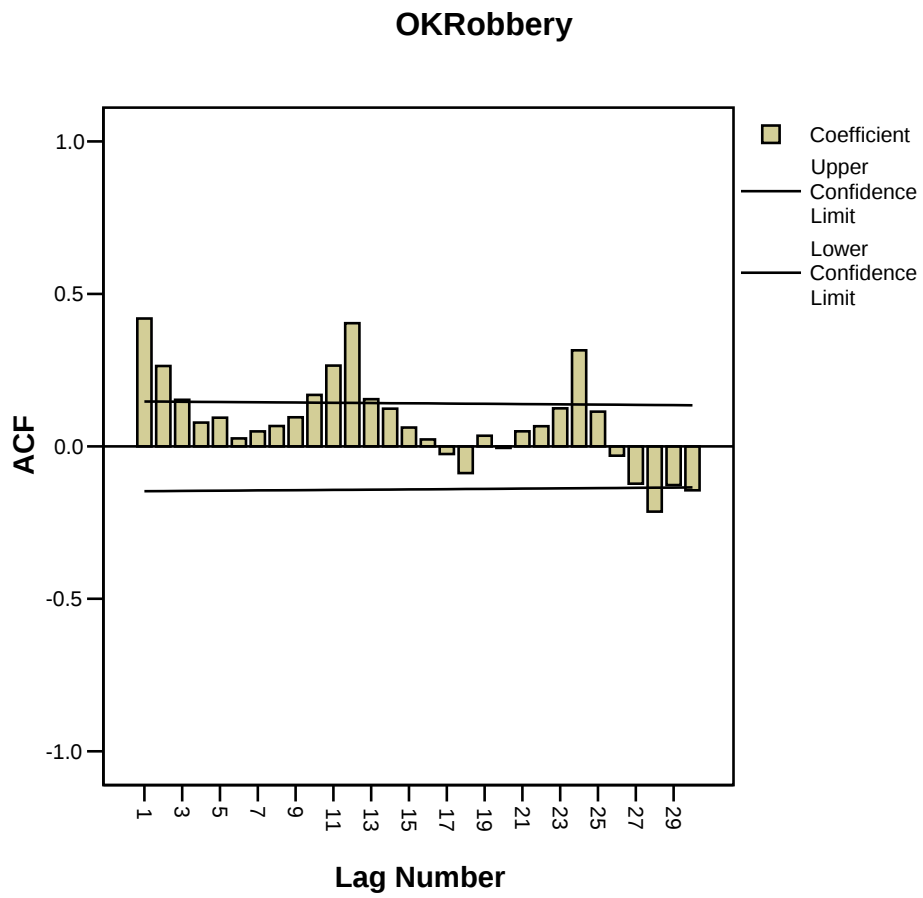


Figure B39. ACF for model 8 OK monthly arrest rates for robbery ARIMA (0,0,0) (0,0,0)₁₂.

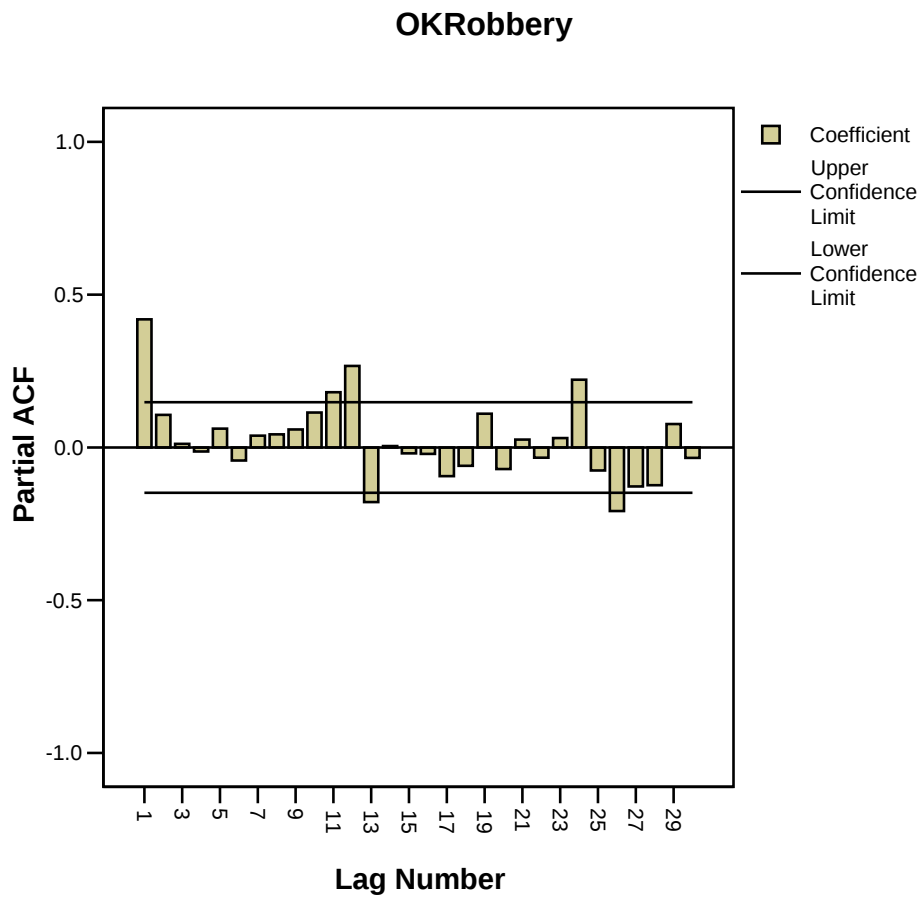


Figure B40. PACF for model 8 OK monthly arrest rates for robbery ARIMA (0,0,0) (0,0,0)₁₂.

Error for OKRobbery from ARIMA, MOD_62 CON

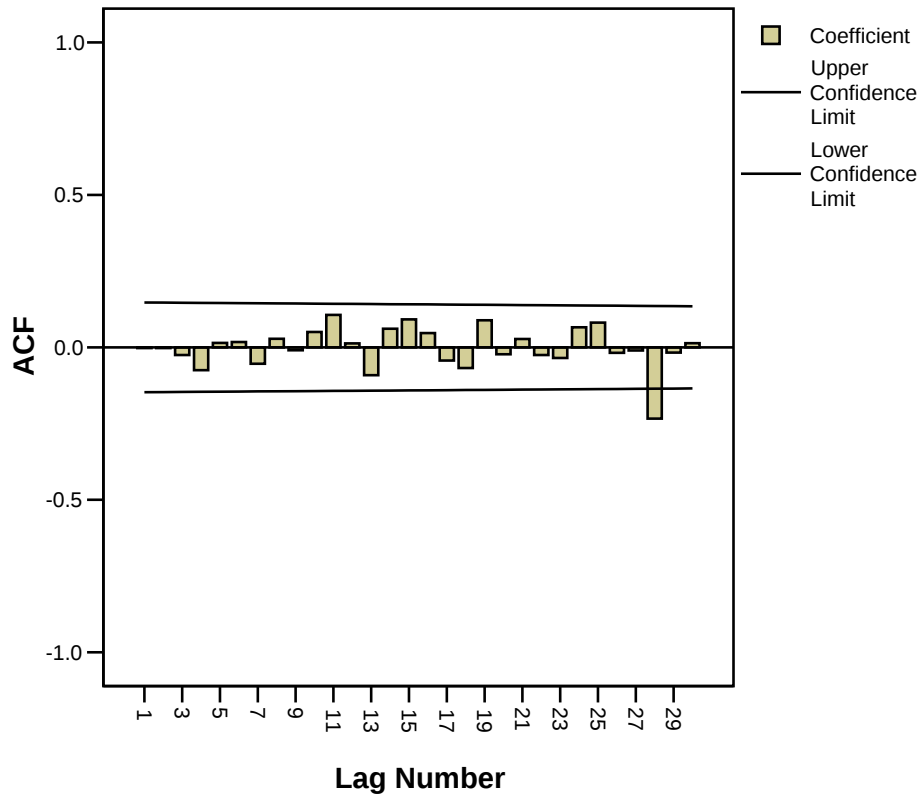


Figure B41. ACF for model 8 OK monthly arrest rates for robbery ARIMA (1,0,1) (1,0,1)₁₂.

Error for OKRobbery from ARIMA, MOD_62 CON

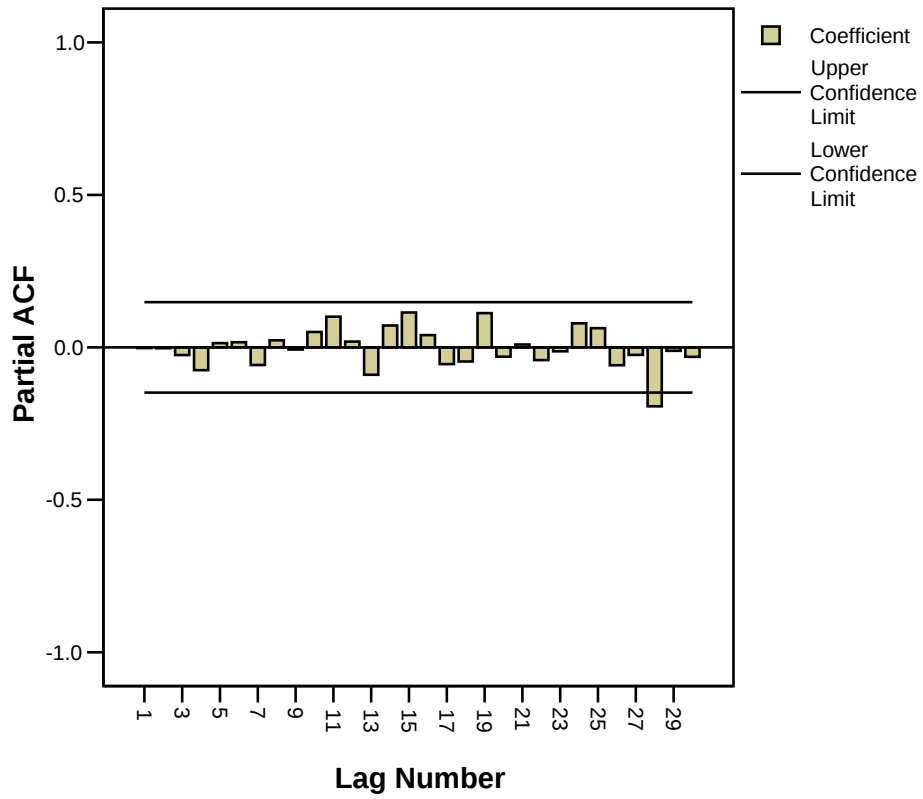


Figure B42. PACF for model 8 OK monthly arrest rates for robbery ARIMA (1,0,1)(1,0,1)₁₂.