Social Disorganization and Intimate Partner Violence in Rural Cities and Towns

by

Lauren Elizabeth Kingsbury

A thesis submitted to the faculty of Radford University
in partial fulfillment of the requirements for the degree of
Master of Arts in the Department of Criminal Justice
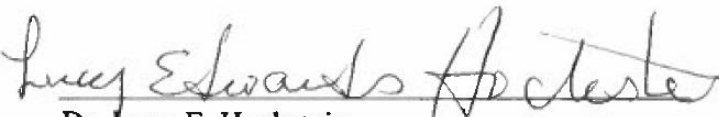
Thesis Advisor: Dr. Stephen Owen

April 2019
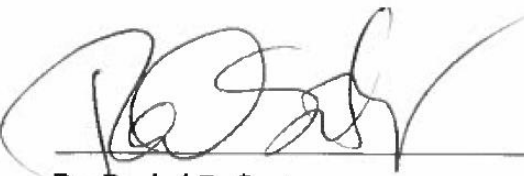
_____   _____
Dr. Stephen S. Owen   4/16/19
Thesis Advisor   Date

_____   _____
Dr. Lucy E. Hochstein   April 16, 2019
Committee Member   Date

_____   _____
Dr. Rachel B. Santos   4/16/2019
Committee Member   Date

ABSTRACT

There has been limited research on intimate partner violence in rural cities and towns. Even less research has examined social disorganization and intimate partner violence in rural cities and towns. However, Goodson and Bouffard (2017) found that residential instability, ethnic heterogeneity, unemployment, poverty, single female-households, and household income were all related to intimate partner violence in rural counties. This study will examine if residential instability, percent non-white, unemployment, poverty, single female-households, and household income are related to intimate partner violence in rural cities and towns. Specifically, the study asks, "How does social disorganization predict the level of intimate partner violence in rural towns and cities?"

There were 189 rural cities and towns from four states included in this study. A backward stepwise regression showed that percent non-white and median household income were significantly related to intimate partner violence in rural cities and towns. Furthermore, residential instability, unemployment, poverty, and single female-headed households did not have a significant impact on intimate partner violence in rural cities and towns. Limitations and implications for future research are discussed.

Lauren E. Kingsbury, M.A.
Department of Criminal Justice, 2019
Radford University

DEDICATION

To my parents, John and Carla Kingsbury, and my brother, Sean Kingsbury, I dedicate my thesis.

And, yes, Dad, I have finally finished my thesis.

ACKNOWLEDGEMENTS

First of all, I would like to thank my thesis committee for taking interest in this project and providing their guidance and knowledge throughout this project. To Dr. Owen, thank you for guiding me and overseeing this project. Your door was always open when I ran into a trouble spot or to answer any questions. To Dr. Hochstein, thank you for always letting me run ideas by you and being so dedicated to the field of criminal justice. To Dr. Santos, thank you for helping me look at my data with different perspectives and for always providing me with guidance.

Secondly, I would like to thank my parents, who have supported and encouraged me throughout this process while being hundreds of miles away. Thank you for all of your endless help. This accomplishment would not have been possible without all of the support and love I have received.

I would also like to thank the friends I have made here at Radford University. Cailin, Hannah, and Philip have all encouraged me to achieve my goals. I would not have made it through all of the late nights without you three to keep me laughing and sane. For that, I thank each of you and am grateful for your friendship. I will always remember the fun times we had.

Finally, I would like to thank my boyfriend, Joseph Miller. Thank you for always answering my phone calls and offering words of encouragement, support, and love. Thank you for supporting me through this entire journey.

TABLE OF CONTENTS

Page

LIST OF TABLES

Chapter 1. Introduction

According to the United States Department of Justice, intimate partner violence is defined as "abusive behavior used by one partner to gain or maintain control and power over the other partner" (2017). Intimate partner violence can be physical, sexual, emotional, or psychological abuse (U.S. Department of Justice, 2017). Anyone can be a victim of intimate partner violence regardless of gender, race, religion, sexual orientation, or gender identity, as long as that person is in an intimate relationship with the offender.

Intimate partner violence is a worldwide epidemic. The World Health Organization estimated that 36% of women, globally, have experienced physical or sexual violence from an intimate partner (2017). Lupri and Grandin (2004) found that 9% of men, globally, have experienced physical or sexual violence from an intimate partner. In the United States alone, intimate partner violence accounts for 21% of violent crime (U.S. Department of Justice, 2017).

There are numerous studies on intimate partner violence in urban cities that examine minority populations, unemployment, and poverty. Pruitt (2008) found that poverty is a strong indicator of intimate partner violence. Walton-Moss, Manganello, Frye, and Campbell (2005) determined that minority and unemployed women were more likely to be victimized than white women. Xie, Lauritsen, and Heimer (2012) found that impoverished women living in metropolitan areas were more likely to be victimized. However, there are not many studies on intimate partner violence in rural cities and even fewer that examine intimate partner violence in rural cities and social disorganization. Social disorganization theory connects neighborhood characteristics with crime. Social disorganization characteristics that could explain intimate partner violence in rural communities include poverty, unemployment, and substance use.

1

The purpose of the current study is to examine the relationship between rural cities and towns and intimate partner violence through social disorganization characteristics. There is a plethora of research that has been conducted on social disorganization theory in urban areas, but very little research conducted on social disorganization in rural areas. Since there has been such little research conducted on social disorganization and intimate partner violence in rural cities and towns, this study will be filling a gap in the literature. This study will explore the research question, "How does social disorganization predict the level of intimate partner violence in rural towns and cities?" This study will conclude with a discussion of the findings, implications, and recommendations for future research.

Chapter 2. Literature Review

Historical Overview of Intimate Partner Violence

Before understanding the current state of intimate partner violence, it is important to recognize the historical background of intimate partner violence to see how the crime and laws have changed throughout the years. The Code of Hammurabi is considered to be the oldest legal code ever to exist and contains 282 Mesopotamian laws that King Hammurabi enforced during his reign from 1792 to 1750 BC (Price, 1904). Within this Code, a husband had the ability to discipline his wife without any intervention. For example, if a wife was considered to be a bad wife, the husband could send her away without consent.

According to Pleck (1987), the ancient Romans had some of the most extreme cases of intimate partner violence. Roman men had absolute control over their wives; the men had full legal ownership and could reprimand the women accordingly. The wives were considered to be the husband's property. The husband had the option to sell his wife into slavery, or even beat her to death. In one instance, a woman was sold into slavery because she was walking outside without her husband's permission.

Before the 1800s, most worldwide legal systems accepted wife beating as a valid method to assert a husband's authority over his wife (Daniels, 1997). However, one exception to this was the Massachusetts Body of Liberties of 1641. This declared that a married woman should be "free from bodily correction or stripes by her husband" (Daniels, 1997). The Massachusetts Body of Liberties was the first legal code in New England that listed rights and liberties instead of restrictions and punishments.

In the 19th century, there was a political shift regarding intimate partner violence in the United States. Tennessee became the first state to outlaw wife beating in 1850 (Gordon, 2002).

3

By the end of the 1870s and early 1880s, most courts in the United States were unanimously opposed to the right of husbands to discipline their wives physically.

A pivotal court case was *Fulgham v The State of Alabama* (1871). George Fulgham was a freed slave caught beating his children with a whip. When his wife told him to stop and tried to intervene, he began whipping her instead (Siegel, 1996). Mrs. Fulgham went to the authorities, and eventually, the case went all the way to the Alabama Supreme Court. George Fulgham argued that because she was his wife, he could discipline her however he felt necessary. The Alabama Supreme Court ruled that a husband did not have the right to physically reprimand his wife and punished the husband with physical labor. In 1882, Maryland became the first state to make wife beating a crime. However, the offender had the option to choose between 40 strikes with a whip or up to one year in jail (Siegel, 1996).

By the early 20th century, police were intervening in cases of intimate partner violence in the United States; however, arrests were rare (Gordon, 2002). Wife beating was made illegal in all states by 1920. Prior to 1984, most police officers could not legally make a warrantless arrest unless the misdemeanor occurred while the officer was present, or the officer had probable cause to believe that there was a clear offender and a clear victim (Gordon, 2002). Since most intimate partner violence cases involve simple assault and battery, the police could not make an arrest at the scene because it was usually the victim's word against the offender's word about what happened in the privacy of the home (Gordon, 2002). However, this changed in 1984.

According to Sherman and Berk (1984b), police practices were heavily criticized in the 1970s because of the lack of emphasis on intimate partner violence offenders. Police officers rarely made arrests, and officers in Chicago were observed trying to negotiate with victims about arresting offenders. At the time, roughly 10% of offenders were arrested.

Sherman and Berk (1984a) conducted research in Minneapolis, Minnesota to determine how police officers should respond to misdemeanor intimate partner violence calls. To study the responses, when a call for intimate partner violence was made, a lottery response was assigned so responding officers would know how to proceed. The three lottery responses were to arrest the offender at the scene, send the offender away from the scene for 8 hours, or offer advice (Sherman & Berk, 1984a). In all cases the police officers responded to, there was a 6-month follow-up period, which measured the frequency and severity of any future intimate partner violence.

The results showed that 19% of offenders who were arrested reoffended. Thirty-three percent of offenders that were sent away for 8 hours reoffended, and 37% of offenders that were offered advice reoffended (Sherman & Berk, 1984a). This research brought about policy change in the way the Minneapolis Police Department approached intimate partner violence. Arresting the offender was not mandatory, but if the responding officer did not arrest the offender when applicable, the officer had to write a report specifically stating why the offender was not arrested.

Later in 1984, it was recommended by the United States Attorney General that arresting the alleged offender should be the standard police response when responding to intimate partner violence calls (Gordon, 2002). In 1985, Tracy Thurman successfully sued the Torrington Police Department in Connecticut when her ex-husband was not arrested after violating a restraining order. She was later beaten, stabbed, and almost killed by him (Geigis, 1992). She argued that if her ex-husband had been arrested when the restraining order was violated the first time, the assault would not have occurred. *Thurman v City of Torrington* (1985) brought about nationwide change; intimate partner violence would now be an automatic arrest, even if the victim decided not to press any charges. In 1993, the World Conference on Human Rights asserted that intimate

partner violence was a global public health policy violation and a human rights concern (World Health Organization, 2017).

Congress passed the Violence Against Women Act in 1994, which recognized intimate partner violence as a national crime (U.S. Department of Justice, 2017). The Act also created the Office of Violence Against Women, which is a branch of the Department of Justice. In 1996, Congress passed the Domestic Violence Offender Gun Ban, which made it a federal crime for convicted intimate partner violence offenders to own a firearm or ammunition. Additionally, it prevented individuals under a restraining order for intimate partner violence to own a firearm. In 2000, the Interstate Enforcement of Domestic Violence Protection Orders Act was passed, which enabled all courts to recognize and enforce domestic protection orders issued in other jurisdictions, including all Native American tribes.

Summary. Intimate partner violence has been a prevalent issue for hundreds of years. The 20th century brought about new laws and police policy regarding intimate partner violence. Examples of this include prohibiting convicted intimate partner violence offenders from owning a firearm, automatically arresting offenders at the scene, and if the offender was not arresting, writing detailed reports as to why (Geigis, 1992; Gordon, 2002; Sherman & Berk, 1984a/b; U.S. Department of Justice, 2017).

Female Victims

According to the National Domestic Violence Hotline (2016), 24.3% of women living in the United States, aged 18 and older, have experienced physical violence from an intimate partner. The Centers for Disease Control and Prevention (CDC) (2014) had estimated that 18,000 women have been killed in intimate partner violence disputes from 2003 through 2014. In the

United States, almost one-third (31%) of married women aged 18 and older have admitted to being slapped, punched, choked, slammed, or beaten by a spouse (Izadi, 2014).

There has been a plethora of research conducted on female intimate partner violence victims (Breiding, Black, & Ryan, 2008; Lee, 2007; Reaves, 2017). Women are, typically, seen as physically inferior to their male counterparts, so it could be easier for male offenders to physically abuse women (Reaves, 2017). In Korean cultures, it is expected that women obey commands from their husbands (Lee, 2007). About 30% of Korean women living in Los Angeles, California reported being physically assaulted within the last year by their husbands. Additionally, 25% of women reported being injured by their husbands through physical assaults (Lee, 2007).

Women are less likely to report intimate partner violence because of any repercussions. According to Reaves (2017), female victims in the United States were four times less likely than male victims to report the incident to police for the fear of repercussions. Repercussions include more violence, or harm being done to any children or pets. Moe (2009) found that women with children are less likely to leave an abusive relationship than women without children. Women with children have to make sure their children are safe and will remain safe once the relationship has ended. Thirty percent of women reported that once they ended the relationship, they were too afraid to ask for child support because it was too dangerous, and the ex could find out where the children were (Moe, 2009).

Breiding, Black, and Ryan (2008) used the Behavioral Risk Factor Surveillance System to survey intimate partner violence in 16 states and two United States territories. The BRFSS is a random-digit telephone number survey (Breiding et al., 2008). The states included in this survey were Arizona, Hawaii, Iowa, Massachusetts, Michigan, Missouri, Nebraska, Nevada, New

Mexico, Ohio, Oklahoma, Oregon, Rhode Island, Vermont, Virginia, and Washington. The two United States territories were Puerto Rico and the Virgin Islands. Four questions were asked over the phone. The four questions were related to threatened physical violence, attempted physical violence, actual physical violence, and sexual violence. There were 11,552 women surveyed.

The results show that 26.4% of the women have been a victim of any type of intimate partner violence. Furthermore, 19.2% of women reported their intimate partner threatened physical violence, and 14.5% of partners actually attempted physical violence (Breiding et al., 2008). Also, 10.2% of women experienced unwanted sex.

Summary. This research helps to highlight that intimate partner violence is an epidemic that affects women all around the United States. Breiding and colleagues (2008) found that roughly 26% of women have been victims of intimate partner violence. Women are less likely to report intimate partner violence due to the fear of repercussions (Reaves, 2017). Women with children are even less likely to report being a victim of intimate partner violence (Moe, 2009). The following section will examine male victims of intimate partner violence.

Male Victims

In general, men are often viewed as offenders in intimate partner violence disputes. However, men are victims of intimate partner violence, too. From 2003 through 2014, there have been 5,500 men killed in intimate partner violence disputes (CDC, 2014). According to the National Hotline for Domestic Violence, one in seven men will experience intimate partner violence in his lifetime (2014). Every year in the United States, 830,000 men will become victims of intimate partner violence.

There have been multiple studies that have examined the dynamic and social stigma of male victims of intimate partner violence (Dutton & White, 2013; Mulleman & Burgess, 1998).

Men are less likely to report abuse than females, due to lack of resources (Dewey & Heiss, 2018; Felson, Messner, Hoskin, & Deane, 2002). Felson and colleagues (2002) found that males do not come forward because intimate partner violence is a "women's issue." Many men also reported that resources, centers, and hotlines are geared towards women instead of men, which furthered the idea of intimate partner violence being a "women's issue" (Felson et al., 2002).

There are many resource logos that include hearts, butterflies, flowers, and purple or pink text, which could discourage male victims from coming forward (Dewey & Heiss, 2018). One recommendation is to have the logos and text as gender neutral as possible. For instance, one agency rebranded its logo from a flowy purple text with a heart to a geometric green text with a waterfall to be more inclusive to all people. Within 2 months of rebranding, the agency received more calls from men than any other previous time.

Research has shown that a majority of male victims of intimate partner violence do not come forward due to feeling embarrassed or fear of not being believed (Carmo, Grams, & Magalhães, 2011; Entilli & Cipoletta, 2016; Reaves, 2017). As mentioned previously, males believe intimate partner violence is a "women's issue," so coming forward could make them appear inferior or weak. Etilli and Cipoletta (2016) found that 100% of the men studied felt embarrassed to come forward and believed that there were not many resources in place to support male victims of intimate partner violence. Also, most of the men reported feeling like they had no one to talk to about the violence or would be shunned by family and friends if they ever spoke about it. On the other hand, Reaves (2017) found that roughly 20% of men do not report bites, scratches, or bruises because those are "too minor" of injuries. Six percent do not report the abuse for fear of repercussions.

Carmo et al. (2011) studied cases of intimate partner violence involving male victims in Portugal. All of the male victims reported that the offender was female, and 63.9% of the males reported the offender was his wife. More than 80% of the men admitted that the abuse happened more than once (Carmo et al., 2011). However, almost none of the men reported the violence to the authorities because they believed the authorities would not take them seriously.

However, when males do come forward, they are two times less likely to be believed than female victims of intimate partner violence are (Drijber, Reijnders, & Ceelen, 2013). Drijber and colleagues (2013) found that approximately 30% of the male victims spoke to police about the abuse, but only half of those victims officially reported it. When it came to not reporting the abuse, 49% felt the police would not take them seriously, and 35% felt the police would not take action (Drijber et al., 2013). Additionally, 9% of respondents did contact the police; however, the police dismissed it because it was a male victim.

Summary. This research portrays how men are victims of intimate partner violence and the social stigma of being victimized. Men around the world are less likely to report intimate partner violence due to the stigma around being a victim (Dewey & Heiss, 2018; Felson et al., 2002). When males do come forward, they are less likely to be believed (Carmo et al., 2011; Drijber, 2013; Felson, 2002). There are also not many resources geared towards men (Dewey & Heiss, 2018). The following section will examine LGBTQ victims of intimate partner violence.

LGBTQ Victims

It has been noted by Burke, Jordan, and Owen (2002) that it can be difficult to obtain a generalizable LGBTQ population for research. This could be because most study participants are recruited through LGBTQ organizations, which could exclude people not involved with those organizations. Also, there are people in same-sex relationships who have not disclosed their

sexual orientation, or "come out," so those individuals are not included in research (Burke et al., 2002). The CDC has determined that 40% of lesbian women, 37% of gay men, and 22% of bisexual women will experience some form of intimate partner violence in their lifetime (CDC, 2010). Intimate partner violence occurs in LGBTQ relationships and is a global issue.

Several scholars have stated that people in same-sex relationships are hyperaware of the repercussions of reporting any intimate partner violence (Ciarlante & Fountain, 2010; Dantas, Lucena, Deininger, Andrade, & Montiero, 2016). A major repercussion of coming forward is being "outed." One way an offender could coerce or dominate someone in a relationship is to threaten to "out" the victim to family members, friends, landlords, or employers (Ciarlante & Fountain, 2010). This is a form of manipulation because the victim could potentially lose his or her job, home, relationships with family members, or custody of his/her children. Additionally, researchers have found that 39% of men in gay intimate relationships report at least one type of physical abuse by a partner over a 5-year period.

Similarly, Dantas and colleagues (2016) found that being in a same-sex relationship is not fully accepted in Latin America, and approximately 5,000 women are killed each year because of it (Dantas et al., 2016). Out of the women interviewed, 83.3% reported being a victim of intimate partner violence, but felt they would be physically harmed for "outing" themselves.

Much research has been conducted to determine the availability of resources for LGBTQ victims of intimate partner violence (Brown & Groscup, 2009; Greenberg, 2012). Healthcare providers might not take the victim seriously. For example, one woman in Brazil went to a psychiatrist and every time she would say "girlfriend," the psychiatrist would correct her by saying "boyfriend" (Dantas et al., 2016). Additionally, Brown and Groscup (2009) found that United States crisis call center employees viewed same-sex intimate partner violence as less

serious, less frequent, less likely to get worse over time, and victims had an easier time leaving the relationship, compared to victims in heterosexual relationships. If same-sex intimate partner violence is viewed as less serious, a crisis center employee might not give an LGBTQ person the same treatment or advice as he or she would to a heterosexual caller, which could be extremely harmful.

Furthermore, Greenberg (2012) established that as many as 50% of transgender individuals living in the United States have reported being victims of intimate partner violence. Nineteen percent reported they were victimized because they were transgender. Additionally, many intimate partner violence shelters and medical providers do not meet the needs of transgender victims, so it is difficult for them to get the necessary support. Some shelters will only allow transgender women access if they can provide documentation that there has been surgery, or a doctor's note stating they are in the process of transitioning (Greenberg, 2012). By barring access, transgender individuals cannot receive support and could be forced to stay with their abuser.

Summary. The purpose of the previous section was to depict how the LGBTQ community are victims of intimate partner violence, too. It can be difficult for LGBTQ individuals to report intimate partner violence because that would mean "outing" themselves to the police or family members (Burke et al., 2002; Ciarlante & Fountain, 2010). It was also found that United States crisis call center employees viewed same-sex intimate partner violence as less serious, less frequent, and less likely to get worse over time (Brown & Groscup, 2009). This shows how there is a social stigma around same-sex intimate partner violence. The following section will discuss how intimate partner violence affects mental health.

Mental Health

Victims of intimate partner violence can experience a wide range of emotional and mental health changes. One of these emotional changes is experiencing post-traumatic stress disorder (PTSD). In a study researched by Stein and Kennedy (2001), women were asked about any emotional or mental changes they may have noticed since being a victim of intimate partner violence. The results from the study show that 68.2% of those intimate partner violence victims have experienced major depressive disorder. Additionally, 50% of those intimate partner violence victims have reported being diagnosed by a medical professional with PTSD.

Intimate partner violence can have more than just a physical effect. Recent research has shown that intimate partner violence adversely affects victims' mental health (Afifi et al., 2009; Machisa, Christofides, & Jewkes, 2017; Miller & Irvin, 2017; Nam & Lincoln, 2016). These mental health effects are evident from 12 months of abuse all the way through a lifetime of abuse. For example, 23.0% of women experienced clinical depression and 11.6% of women had PTSD symptoms within 12 months of being assaulted by an intimate partner (Machisa et al., 2017).

On the other hand, Nam and Lincoln (2016) studied lifelong violence in elderly women. Their findings indicate that 49.3% of elderly South Korean women have experienced lifelong family violence. Additionally, 24.3% have experienced intimate partner violence. The results show that 54.3% of respondents have been diagnosed with clinical depression, and 24.8% have been diagnosed with major depression (Nam & Lincoln, 2016). Additionally, Miller and Irvin (2017) found that those who believe they have high levels of emotional support have approximately a 32% lower chance of developing a depressive disorder, and a 25% lower chance of developing an anxiety disorder, respectively. However, intimate partner violence victims of

verbal threats had a 40% greater chance of developing an anxiety disorder. This research helps to confirm that intimate partner violence can have adverse effects on mental health.

Intimate partner violence can affect all types of couples. Physical intimate partner violence in married couples was studied to determine if there was a link to mental health disorders (Afifi et al., 2009). Physical assault characteristics were pushing, hitting, choking, burning, and threatening with a weapon. The results showed that 15.2% of females reported physical intimate partner violence and 20.3% of males reported physical intimate partner violence. Additionally, both males and females that have been victims of intimate partner violence have poorer mental health compared to those who have never experienced abuse. Female victims were more likely than male victims to develop an anxiety disorder; however, male victims were more likely to develop a disruptive behavior disorder (Afifi et al., 2009). Also, female victims were more likely to have thought about or attempted suicide after the physical abuse compared to male victims. This research portrays that married males and females can develop mental health disorders stemming from intimate partner violence.

Summary. The above research discusses how intimate partner violence can affect victims' mental health. For example, Nam and Lincoln (2016) found that 54.3% of women have been diagnosed with clinical depression, and 24.8% have been diagnosed with major depression. Furthermore, female victims were more likely to develop an anxiety disorder, and males were more likely to develop a disruptive behavior disorder (Afifi et al., 2009). This shows that the effects of intimate partner violence can be more than just physical. The following section will introduce social disorganization theory and its historical background.

Theoretical Foundations

The following sections explain the historical background of social disorganization theory and provide a theoretical explanation for intimate partner violence. Social disorganization theory is the idea that more crime occurs in areas that are stricken with poverty, unemployment, transient populations, and higher drug rates – socially disorganized areas. More specifically, the theoretical explanation of social disorganization theory will attempt to offer a reason as to why intimate partner violence occurs in rural locations.

Historical Background of Social Disorganization Theory

Since the current study uses social disorganization theory to attempt to explain intimate partner violence in rural cities and towns, it is important to know how the theory developed. Social disorganization theory was first developed in the 1920s and 1930s at the University of Chicago and the Institute for Juvenile Research, in Chicago, Illinois (Shaw & McKay, 1942). Several sociologists at the university were studying urban crime and delinquency in juveniles.

Robert Park asserted that a city does not randomly develop; it is shaped over time (Park & Burgess, 1921). If a plant were to invade an area, that area would adapt and change. The original plant species would adapt or die off. According to Park & Burgess's research, human neighborhoods will undergo the same invasion, domination, and succession that plants do.

Ernest Burgess, a colleague of Robert Park, developed the concentric zone theory (Park & Burgess, 1921). Burgess's argument was that a city does not grow and expand from the outside; it does so from the inside. According to the concentric zone theory, there are five concentric zones, and each zone had a specific function and purpose. The concentric zone theory worked through city expansion. As the city expands, each inner ring would invade the closest

adjacent ring, thus beginning the process of invasion, domination, and succession of neighborhoods that Park mentioned. The neighborhoods and societies would invade other rings.

Zone One was the innermost zone. According to Burgess, Zone One contained the big businesses, public transportation, skyscrapers, government buildings, shopping malls, and movie theaters (Park & Burgess, 1921). Factories and large industrialized buildings occupied the outer band of Zone One. Zone Two was known for its transient population, rundown apartment complexes, and financially unstable individuals. According to Burgess, this was the least desirable zone to live in because this zone was comprised of the "bad neighborhoods" (Park & Burgess, 1921). Zone Three was known as the worker's zone. Most of the people living in Zone Three were second or third generation immigrants. Zone Three was where the people who could afford to move out of Zone Two settled. Zone Four was known as the residential zone. The people who typically lived in this zone were white collar workers (Park & Burgess, 1921). Zone Five contained the most desirable homes. These homes were on the edge of the suburbs and the people who lived there were financially stable. The homes were far away from the hustle and bustle of the city and contained nice, single-family homes. This became known as the "commuter zone" because the people living here could afford to commute to Zone One for work each day (Park & Burgess, 1921).

Henry McKay and Clifford Shaw used Burgess's concentric zone theory map of Chicago to study the geographic distributions of delinquent juveniles in Chicago (Shaw & McKay, 1942). Shaw and McKay collected Chicago addresses of males aged 17 and younger who had contact with the juvenile court system, a juvenile correctional institution, or the police during three different time periods. Those three time periods were 1900-1906, 1917-1923, and 1927-1933. Shaw and McKay hypothesized that Zone Two would have higher levels of societal problems

and crime. These neighborhoods would have higher levels of poverty, prostitution, drug and alcohol abuse, and mental illness regardless of what racial and ethnic groups occupied them (Shaw & McKay, 1942). This was because of social disorganization and collective efficacy.

Collective efficacy is the perceived ability of neighbors to activate informal social controls (Sampson, Raudenbush, & Earls, 1997). There are two parts of collective efficacy, the first being social cohesion and mutual support, and the second being shared expectations for social control. Theoretically, communities that have higher levels of collective efficacy have lower levels of crime, and communities with lower levels of collective efficacy have higher levels of crime. According to Sampson and colleagues (1997), socially disorganized neighborhoods would have lower levels of collective efficacy.

One reason that nicer neighborhoods have higher levels of collective efficacy is because the homeowners in those neighborhoods have financially invested in a home and its property (Sampson et al., 1997). These homeowners care about issues like teenagers hanging out on the corner, prostitution, gang violence, and drug abuse. Therefore, if there was a drug dealer on the corner, these homeowners were more likely to call the police instead of turning a blind eye. The homeowners may feel it is their duty to keep the neighborhood "nice," so there will be higher levels of collective efficacy.

Neighborhoods with higher levels of gang violence, drug abuse, and prostitution will have lower levels of collective efficacy. Many residents of these communities feel like the homes they are in are temporary, and once they can afford to move out, they will. If the neighborhood is temporary, homeowners might not care much about what happens in the neighborhood. There could be the mentality of "What is the point of trying to make the neighborhood better when I am moving out soon?" Crimes keep occurring because of this mentality and the neighborhoods have

lower levels of collective efficacy. A prime example of this is college towns. College is typically a transient period in one's life. The student rents an apartment and goes home for holidays, breaks, and summer. College students typically do not care what other college students are doing in the apartment downstairs.

Research conducted by Sampson and colleagues (1997) examined violence and if concentrated disadvantage decreased collective efficacy and residential stability increased collective efficacy. The results of that research showed that collective efficacy was higher among homeowners, those with higher socioeconomic statuses, and older residents (Sampson et al., 1997). Collective efficacy was lower among neighborhoods with residential instability, younger residents, and lower socioeconomic status. Violence was associated in neighborhoods with lower levels of collective efficacy, residential instability, and younger residents (Sampson et al., 1997). This research helps to portray how collective efficacy can impact violence.

Bellair and Browning (2010) studied disorganization and crime in Seattle, Washington. Data were retrieved from the 1990 victimization survey. This survey was administered via telephone and telephone numbers were chosen at random. Social control, being neighborly, neighborhood activity participation, and informal surveillance were all included. There were 5,302 completed interviews. The results showed that disorganization and crime decreased in neighborhoods with higher rates of social networks. This included being neighborly with neighbors, watching others' property while they were out of town, and familiarity with neighbors. Violent victimization and property victimization were related to neighborhoods that had higher rates of residential turnover and fewer neighborhood associations. While this research does not specifically test for intimate partner violence, this does show a propensity towards violence, which can be extended to intimate partner violence.

An important aspect of social disorganization and collective efficacy is how the disorder is perceived by residents and criminals. For example, drug dealers usually know the neighborhoods well and can tell when the disorder is because of construction or destruction (St. Jean, 2007). Vacant buildings can be a signal of disorganization or construction, and drug dealers can tell if the building has been abandoned for quite some time or if the mess is because the building is being renovated. Drug dealers have learned that since residents of these neighborhoods are not financially and emotionally invested in these properties, they can use this to their advantage. This suggests that the value of the community is not decreasing because of criminal activity, because the residents are not upkeeping the neighborhood anyways (St. Jean, 2007). This potentially shows how disorganization can encourage crime.

Summary. The purpose of this section was to acknowledge the historical background of social disorganization theory and understand how it developed. This is important because the current study heavily relies on social disorganization theory and the characteristics of the theory. Since residential instability, minority populations, poverty, unemployment, single female-headed households, and household income are all characteristics of social disorganization theory, this ties into the research question of "How does social disorganization predict the level of intimate partner violence in rural towns and cities?"

Proposed Theoretical Explanation

In a perfect society, explaining why all intimate partner violence offenders commit these crimes to a generalized population of intimate partner violence offenders would be very beneficial. However, one cannot say that there is one single factor or motivator that applies to all intimate partner violence offenders. Nevertheless, in this study, social disorganization theory will attempt to offer a valid explanation for intimate partner violence.

Several researchers and theorists have suggested that there is a connection with social disorganization theory and intimate partner violence (Jain, Buka, Subramanian, & Molnar, 2010; Morgan & Jasinski, 2017; Wright, 2015). For example, Jain and colleagues (2010) examined whether collective efficacy during adolescence was linked to physical violence with an intimate partner later in young adulthood. The data was collected by the Project on Human Development in Chicago Neighborhoods from 1995 through 2002 (Jain et al., 2010). This data was then combined with an in-depth study of the neighborhoods. There were 640 participants.

The results showed that collective efficacy was a significant predictor of dating violence victimization for all youths. In general, the results showed that young men were significantly more likely to be offenders than young women, and less likely to be victims of youth dating violence than young women, for both minor and severe acts of violence (Jain et al., 2010). Additionally, males living in high-poverty neighborhoods were more likely to be offenders than males living in low-level poverty neighborhoods. Also, more than 75% of the victims also reported being an offender. This research helps to show how collective efficacy and social disorganization can affect intimate partner violence.

Similarly, Morgan and Jasinski (2017) studied the effects of social disorganization in Chicago neighborhoods and Illinois counties and intimate partner violence. Data was collected from the United States Census Bureau's American Community Survey, the City of Chicago Data Portal, the Illinois Coalition Against Domestic Violence, the Illinois Criminal Justice Information Authority, and the Illinois State Police. Social disorganization data was collected from the United States Census Bureau at the county level from the 2005 through 2009 5-years estimates. Data was collected for 102 counties in Illinois.

The social disorganization characteristics included in this study were disadvantage, immigrant population, ethnic and racial heterogeneity, and residential instability. Disadvantage was measured by combining the percent of the population living below the poverty line, percent relying on public assistance, percent unemployed, percent female-headed households, and percent of the population below 18 years old (Morgan & Jasinski, 2017).

The results from the research showed that central Chicago experienced the highest rates of intimate partner violence with 308 per 1,000 persons (Morgan & Jasinski, 2017). Additionally, the more residential instability there was, the higher the rate of intimate partner violence was. The neighborhoods with the lowest rate of intimate partner violence were in the northern part of Chicago and had higher rates of heterogeneity and residential stability. The results also showed that crime rates were higher in disadvantaged neighborhoods in Chicago (Morgan & Jasinski, 2017). When it comes to counties in Illinois, there were fewer intimate partner violence cases. There were 448 per 10,000 persons. The results also showed that as shelters, centers, and resources increased in the Illinois counties, rates of intimate partner violence decreased. This research helps to portray the effects of social disorganization theory on intimate partner violence.

Support from family members and social support from neighbors are also characteristics of social disorganization theory. Social disorganization theory states that the more support one gets from family and community members, it reduces the chances that person will turn to crime (Park & Burgess, 1921). Wright (2015) studied whether family support and neighborhood social support for females was related to intimate partner violence. Neighborhood disadvantage was collected through census data from 1990. Disadvantage included percent living below the

poverty line, percent receiving public assistance, percent unemployed, percent African American, percent living in female-headed households, and percent under 18 years old.

The results showed that females receiving familial support were less likely to experience violence and experienced lower frequencies of violence compared to those females that did not receive familial support (Wright, 2015). Women living in lower income households were more likely to experience violence than women living in higher income households. Additionally, unmarried women cohabiting with their significant others were more likely to experience violence compared to unmarried women not cohabiting with their significant others. Unexpectedly, women who received more social support from friends reported experiencing more violence than women who did not receive social support from friends (Wright, 2015). The results also showed that all neighborhood disadvantage factors, except percent African American, were associated with higher rates and frequencies of violence. These results help to convey the importance of social support and how neighborhood disadvantage can affect intimate partner violence.

Summary. This section was to understand how social disorganization is related to intimate partner violence in all communities. For example, collective efficacy is a large component of social disorganization, and it has been found that lower levels of collective efficacy lead to higher rates of intimate partner violence (Jain et al., 2010; Morgan & Jasinski, 2017). Wright (2015) also found that lowered social support can cause an increase in intimate partner violence. The following section will focus on intimate partner violence in rural communities.

Intimate Partner Violence in Rural Communities

This section will provide research that has been conducted on intimate partner violence, specifically in rural communities. Peek-Asa et al. (2011) investigated the prevalence, severity, and frequency of intimate partner violence in differing geographical communities. This research was conducted in an Iowa family planning clinic from November 1, 2007, through July 18, 2008 (Peek-Asa et al., 2011). The results from the study show that 16.1% of women have experienced some sort of intimate partner violence within the last 12 months. Furthermore, 22.5% of women living in small rural towns have experienced intimate partner violence, and 17.9% of women living in isolated rural towns have experienced intimate partner violence (Peek-Asa et al., 2011). Additionally, 30.8% of women living in isolated rural communities reported severe or very severe physical abuse happened at least four times in the last 12 months, compared to 10.2% of suburban and urban women (Peek-Asa et al., 2011). Overall, the results showed that women living in rural and isolated rural communities were significantly more likely to experience intimate partner violence than women living in suburban or urban areas.

Strand and Storey (2018) conducted a study that compared the severity of intimate partner violence and risk factors in urban, rural, and remote areas of Sweden. The intimate partner violence cases were reported to Swedish police from August 1, 2009, through December 27, 2014. The Brief Spousal Assault Form for the Evaluation of Risk (B-SAFER) was used by the responding police officers in each call (Strand & Storey, 2018). B-SAFER is a basic tool used by Swedish police that assists them in assessing, understanding, and managing cases of intimate partner violence.

In the above research, the intimate partner violence cases were separated into three categories based on severity. "Low severity" indicated nonphysical psychological violence,

"moderate severity" indicated a single instance of physical violence or sexual assault, and "high severity" indicated multiple instances of violence, or attempted murder (Strand & Storey, 2018). The results from the study indicated that 18% of urban reports, 31% of rural reports, and 39% of remote reports fell into the "high severity" category. The results also show that victims living in remote locations were 5.46 times more likely to be victims of violence, compared to urban and rural locations (Strand & Storey, 2018). The researchers offered several explanations as to why rural and remote areas might experience higher rates.

There are striking similarities from Peek-Asa and colleagues (2011) and Strand and Storey (2018) when explaining why people in rural locations could experience higher rates of intimate partner violence. First, there are fewer resources in rural communities. The victim would have to either drive more than 30 miles, and in many cases, the offender has control of any vehicles, or the victim must take public transportation, which can be expensive (Peek-Asa et al., 2011; Strand & Storey, 2018). The second reason for higher violence rates in rural areas are the small communities, where knowing someone is extremely important. If the abuser is related to someone in the police department, it is less likely the abuser will be prosecuted. Therefore, it could be difficult for a victim to come forward if one does not "know" the right person (Peek-Asa et al., 2011; Strand & Storey, 2018). These reasons help to shed some insight as to why intimate partner violence could be more prevalent in rural communities.

Research in southwest Virginia has found that many women living in isolated rural areas are not receiving the assistance needed when it comes to intimate partner violence (Few, 2005). Women staying in intimate partner violence shelters in rural southwest Virginia completed surveys to help researchers gain insight about their experiences with the shelter, the police, and seeking help (Few, 2005). The women who completed the survey also had the opportunity to be

interviewed. Eighty-eight women from 14 different intimate partner violence shelters completed the survey, and 30 of these women agreed to be interviewed. Of the 30 women interviewed, 10 were African American, and 20 were Caucasian.

In the interviews, there were 25 women (83%) who reported not knowing there was an intimate partner violence shelter in their respective communities. Many of the women in rural communities felt misinformed by their significant others about what shelter life was and who went to shelters (Few, 2005). After responding to 911 calls, the police recommended the shelters to 12 Caucasian women and two African American women. All of the women felt that because they lived in such rural locations, the police did not patrol there, and it was unlikely the police would take their call seriously. Many women expressed feeling that they could not reach out for help because the community was so close-knit and it was only a matter of time before the offender found out (Few, 2005). However, when asked about the shelter and its employees, all of the women responded that the shelter was a safe haven and their sense of community was fulfilled. These results show how important it is to have resources available for victims, and how detrimental isolation can be for victims.

Summary. The above research shows how the dynamic of intimate partner violence in rural areas could differ from that in more urbanized or suburban areas. Victims living in rural areas could experience a lack of resources and typically have a community that is tightly knit, so coming forward could be difficult (Peek-Asa, 2011; Strand & Storey, 2018).

Social Disorganization and Rural Intimate Partner Violence

This section will examine the research that has specifically been conducted on social disorganization and rural intimate partner violence. This will attempt to show how social disorganization explains intimate partner violence in rural communities. Edwards, Mattingly,

Dixon, and Baynard (2014) studied whether poverty rates, bystander intervention, and collective efficacy affected intimate partner violence in adults aged 18 through 24. There were 178 participants in 16 different rural counties in east coast states. The states included in this study were Connecticut, Massachusetts, Rhode Island, and Vermont. Sixty-four percent of participants were from various New England counties and 36% of participants were from rural counties in southern states, specifically North Carolina and South Carolina. Poverty rate data was collected from the American Community Survey from 2007 through 2011 through the U.S. Census Bureau. For bystander intervention, seven questions from the Bystander Behavior Scale was used to determine the extent of intervening.

The results showed that the less income participants had, the more likely those participants would intervene. Participants with moderate to higher incomes were less likely to report any bystander intervention compared to those with lower incomes. Twenty percent of participants reported being an offender, and 33% reported being a victim (Edwards et al., 2014). Also, participants living in higher poverty rural areas reported more instances of violence compared to those living in lower poverty rural areas. As collective efficacy increased, the rates of violence decreased. This research helps to show that social disorganization can be a predictive factor for violence in rural communities, especially intimate partner violence.

Additionally, Goodson and Bouffard (2017) found that rural counties with residential instability, minority populations, unemployment, poverty, and single female-households had higher rates of intimate partner violence. Goodson and Bouffard (2017) examined social disorganization and its relationship to violent crime, including intimate partner violence, in metropolitan and non-metropolitan counties in Arkansas, Delaware, Idaho, Iowa, Michigan, Montana, New Hampshire, North Dakota, Rhode Island, South Carolina, South Dakota,

Tennessee, and West Virginia. Assault data from the National Incident-Based Reporting System was used, as it included the relationship between an offender and a victim for each case, so violent and intimate partner could be distinguished. Social disorganization was measured with 2014 American Community Survey and rural and urban classification codes were obtained through the Economic Research Service (Goodson & Bouffard, 2017).

Of the 274,216 assaults, 124,218 were intimate partner violence, and examination of the intimate partner violence show that counties with more residential instability, which were nonmetropolitan counties, had higher rates of intimate partner violence. Higher levels of ethnic heterogeneity increased rates of all assaults, including intimate partner violence (Goodson & Bouffard, 2017). Concentrated disadvantage significantly predicted assaults across family and intimate partner relationships. Additionally, nonmetropolitan counties had significantly fewer stranger assaults and more family and intimate partner assaults, compared to metropolitan counties (Goodson & Bouffard, 2017). The results from this research highlight the importance of social disorganization characteristics and intimate partner violence in nonmetropolitan rural counties.

Social disorganization theory and collective efficacy could explain intimate partner violence in rural areas in multiple ways. Rural areas are defined as areas that are not within a commuting distance from a city and consist of fewer than 50,000 residents (United States Census Bureau, 2010). Since these communities have fewer residents but larger properties, neighbors are more spread out, compared to suburban and urban communities. Since neighbors are farther apart, there could be less informal social control and weaker bonds, meaning there is no one to intervene in cases of intimate partner violence. Victims might not have members of the community to reach out to because of these weaker social bonds and relationships.

Low socioeconomic status is a characteristic of social disorganization theory. Rural intimate partner violence is associated with unstable employment and lower hourly wages among low-income women (Danziger, Kalil, & Anderson, 2000). Residents of rural areas may have to travel great lengths to seek employment from the nearest city or be willing to take a lower paying job in their hometown. Victims of intimate partner violence could have to miss work for several days due to injuries. In fact, in the United States alone, almost eight million days of paid work are lost due to injuries from intimate partner violence (National Domestic Violence Hotline, 2014). If a victim missed work enough, he/she could be fired, which leads to job instability and lost wages. According to Albrecht (2012), it is difficult for residents of rural areas to obtain and retain jobs because they are lacking necessary skills or education, which in turn, negatively affects the local economy. Offenders who cannot find a job or have been fired from a job could feel like they are not providing for their family and are getting behind on bills, and physical violence may be the only outlet for frustration and anger.

While there have been multiple studies conducted examining the relationship social disorganization has on intimate partner violence in urban communities, the relationship between social disorganization and intimate partner violence in rural communities is lacking. Further research on the impact social disorganization has on intimate partner violence in rural communities is needed. This study will examine the relationship between social disorganization and intimate partner violence in rural cities. One of the hypotheses states that cities with higher residential instability will have higher rates of intimate partner violence. A second hypothesis states that cities with higher percentages of minority populations will have higher rates of intimate partner violence. A third hypothesis is that cities with higher levels of poverty will have higher rates of intimate partner violence. A fourth hypothesis is that cities with higher levels of

28

unemployment rates will have higher rates of intimate partner violence. The fifth hypothesis states that cities with higher rates of single female-headed households will have higher rates of intimate partner violence. A sixth hypothesis states that cities with lower median household incomes will have higher rates of intimate partner violence.

The third chapter will focus on the methodology of the current study. In that chapter, research questions and hypotheses will be addressed, as well as all variables. That chapter will conclude with the statistical analyses being conducted.

Chapter 3. Methodology

As mentioned in the literature review, Goodson and Bouffard (2017) found that social disorganization and assaults, including intimate partner assaults, were more prevalent in rural counties compared to urban counties. The researchers were examining violence in rural and urban counties. While the present study is not examining urban areas, the purpose of the current study is to improve the rural research in Goodson and Bouffard's (2017) study, except the data will be analyzed at the city level instead of the county level.

Goodson and Bouffard (2017) measured concentrated disadvantage through percent unemployed, percent living below the poverty line, and percent living in single parent female-headed households. A disadvantage score was created by adding the three disorganization scores together, and lower scores indicated low-level disadvantage and higher scores indicated high-level disadvantage (Goodson & Bouffard, 2017). Residential instability and ethnic heterogeneity were also included as a social disorganization characteristic. There were 198 metropolitan counties, 222 nonmetropolitan counties adjacent to metropolitan counties, and 270 nonmetropolitan counties. However, for analytic purposes, the counties were split into "Metro area" or "Non-metro area," meaning there were 198 metropolitan counties and 492 nonmetropolitan.

For the unit of analysis, Goodson and Bouffard (2017) used 2013 National Incident Based Reporting System (NIBRS) county crime data from 13 different states. The thirteen states included were Arkansas, Delaware, Idaho, Iowa, Michigan, Montana, New Hampshire, North Dakota, Rhode Island, South Carolina, South Dakota, Tennessee, and West Virginia. The crimes were then narrowed down to simple assault, aggravated assault, and intimidation. The victim-offender relationship was then filtered down to intimate partners (spouse, boyfriend or girlfriend,

common-law spouse, and ex-spouse), familial relationships (anything other than intimate), acquaintance assault (victim and offender are neither intimate nor familial), or stranger assault. The present study aims to further Goodson and Bouffard's (2017) study.

Research Questions and Hypotheses

This study will explore the research question, "How does social disorganization predict the level of intimate partner violence in rural towns and cities?" In doing so, this study will test a series of hypotheses, which are listed below.

Hypothesis 1: When controlling for other social disorganization variables, rural cities and towns with higher residential instability will have higher rates of intimate partner violence per 1,000 persons.

Previous research has found that residential instability leads to less informal social control, which leads to more crime (Shaw & McKay, 1942). People living in poverty do not have enough money to pay rent even in cheap places, which leads to eviction. It has been found that residents living in urban areas with higher rates of residential instability experience higher rates of violence, including intimate partner violence (Pinchevsky & Wright, 2012). Residential instability and being evicted are life stressors. In this paper, life stressors are referred to as stressful events in life such as poverty, residential instability, and income. Life stressors could lead to someone lashing out at a significant other.

Residential instability is one of the main characteristics of social disorganization theory (Shaw & McKay, 1942). Individuals that move around frequently do not have stakes in their community because they are not there long enough to establish lasting relationships. These weak relationships lead to less informal social control, which then leads to more crime. This could help to predict intimate partner violence because if there are loose social ties with neighbors,

neighbors could be less likely to reach out if they believe a neighbor is a victim. Also, offenders could know that there are loose social ties within the neighborhood and could think it would be easier to get away with the crime.

There is little research that shows that rural areas with higher rates of residential instability will lead to higher levels of intimate partner violence. However, Goodson and Bouffard (2017) found that rural counties with higher levels on residential instability experienced higher rates of intimate partner violence. Therefore, it is hypothesized that even when controlling for educational attainment, age, and population, higher levels of residential instability will predict higher levels of intimate partner violence in rural cities and towns. A multiple regression will be run to determine if residential instability is related to intimate partner violence in rural cities and towns.

Hypothesis 2: When controlling for other social disorganization variables, rural cities and towns with higher levels of minority populations will have higher rates of intimate partner violence per 1,000 persons.

Shaw and McKay (1942) found that the more ethnically diverse a neighborhood is, the more tension and crime there will be. This is because there is conflict amongst residents and that interferes with community operations. Past research has shown that urban and metropolitan cities with higher levels of minority populations experience higher rates of violence (Boggess & Hipp, 2010; Walton et al., 2005). There is little research that supports that rural areas with higher minority populations will lead to higher levels of intimate partner violence. However, Goodson and Bouffard (2017) found that rural counties with higher levels of minority populations is related to higher levels of intimate partner violence. Since Goodson and Bouffard (2017) found that higher percentages of minority populations is related to intimate partner violence in rural

counties, the goal is to determine if the same result can be achieved with rural cities and towns. Thus, it is hypothesized that even when controlling for educational attainment, age, and population, higher levels of minority populations will predict higher levels of intimate partner violence in rural cities and towns. A multiple regression will be run to determine if a higher percent of minority residents is related to intimate partner violence in rural cities and towns. *Hypothesis 3*: When controlling for other social disorganization variables, rural cities and towns with higher percentages of residents living below the poverty line will have higher rates of intimate partner violence per 1,000 persons.

Percent living below the poverty line is one of the main characteristics of social disorganization theory. Warner (1999) found that poverty is a strong predictor of crime. Percent living below the poverty line is tied to residential instability because people living in poverty are forced to live in the cheapest houses or apartments, which could force them to move around frequently. Living in poverty is also a life stressor. People living in poverty could be violent towards a significant other as an outlet for anger or frustrations. People living in apartment complexes can often hear what is being said in another apartment. If someone hears fighting and yelling in a neighbor's apartment, he/she is more likely to call the police, compared to people living in single family homes. Police sometimes attribute this to "thinner walls, more calls."

Previous research has shown that poverty is a strong predictor of crime (Pruitt, 2008; Warner, 1999). Poverty is also one of the main characteristics of social disorganization theory (Shaw & McKay, 1942). In metropolitan cities, it has been found that poverty is related to intimate partner violence (Pruitt, 2008; Xie et al., 2012). While there has been minimal research on poverty and rural areas and intimate partner violence, Goodson and Bouffard (2017) found that higher percentages of poverty in rural cities and towns will have higher levels of intimate

partner violence. It is hypothesized that even when controlling for educational attainment, age, and population, higher percentages of residents living in poverty will predict higher levels of intimate partner violence in rural cities and towns. A multiple regression will be run to determine if a higher percent of residents living below the poverty line is related to intimate partner violence in rural cities and towns.

Hypothesis 4: When controlling for other social disorganization variables, rural cities and towns with higher percentages of unemployment will have higher rates of intimate partner violence per 1,000 persons.

Percent unemployed is also tied to percent living below the poverty line. Those that are unemployed could be living below the poverty line, which means they might be living at whatever residence they can afford. Raphael and Winter-Ember (2001) found that those who are unemployed are more likely to engage in crime. Additionally, rural counties with higher percentages of unemployment experienced higher rates of intimate partner violence (Goodson & Bouffard, 2017).

Previous research has suggested that when unemployment rates are high, intimate partner violence is higher, and when unemployment rates are low, intimate partner violence is low (Allonso-Borrego & Carrasco, 2017). This could be because unemployment is a life stressor and when unemployed, offenders could lash out at someone close to them, like a significant other. There has been little research done that shows that unemployment rates in rural cities and towns will have higher levels of intimate partner violence. Therefore, it is hypothesized that even when controlling for educational attainment, age, and population, higher percentages of unemployment will predict higher levels of intimate partner violence in rural cities and towns. A multiple

regression will be run to determine if unemployment is related to intimate partner violence in rural cities and towns.

Hypothesis 5: When controlling for other social disorganization variables, rural cities and towns with higher percentages of single female-headed households will have higher rates of intimate partner violence per 1,000 persons.

With only one income, single female-headed households are more likely to live below the poverty line and move from residence to residence (Immergluck & Smith, 2006). Additionally, Kline, Ludwig, and Katz (2006) determined that teenagers living in single female-headed households were more likely to engage in crime, compared to teenagers living in a two-parent household. It has been shown that higher percentages of single female-headed households are positively correlated to intimate partner violence in urban and rural areas (Goodson & Bouffard, 2017).

Goodson and Bouffard (2017) studied single female-headed households because when combined with other social disorganization characteristics, like poverty, it reduces social control, which leads to more crime. Still, there has been little research that demonstrates higher percentages of single female-households in rural cities and towns will lead to higher levels of intimate partner violence. Therefore, it is hypothesized that even when controlling for educational attainment, age, and population, higher percentages of single female-headed households will predict higher levels of intimate partner violence in rural cities and towns. A multiple regression will be run to determine if a higher percentage of single female-headed households is related to intimate partner violence in rural cities and towns.

Hypothesis 6: When controlling for other social disorganization variables, cities with lower household incomes will lead to higher rates of intimate partner violence.

Socioeconomic status is another main characteristic of social disorganization theory (Shaw & McKay, 1942). Through previous research, it has been found that women living in homes with lower incomes were 7.7% more likely to experience intimate partner violence compared to women living in higher income homes (Gibson-Davis, Magnuson, Gennetian, & Duncan, 2005). Median household income is also tied to percent living below the poverty line and residential instability. Those with lower household incomes are more likely to be living below the poverty line and have a higher chance of moving residences frequently. Low income can also be a life stressor. It has been found that those with lower incomes are living in poorer neighborhoods with more crime and are more likely to engage in criminal activity (Freeman & Owens, 2011).

Thus, it is hypothesized that even when controlling for educational attainment, age, and population, lower incomes will predict higher levels of intimate partner violence in rural cities and towns. A multiple regression will be run to determine if lower median household income has any effect on intimate partner violence in rural cities and towns.

Data

City data was used for consistency. Each geographical unit in the sample is similar in population, which ensures consistency. Counties can vary in size and population. Finally, 2016 crime data was retrieved from NIBRS. Since NIBRS included all crime in all states, it had to be filtered down to the four states being studied, and the specific crimes being studied. All of the social disorganization information was retrieved from the United States Census Bureau's 2016 estimates. On the Census Bureau's website, the desired state was chosen from a drop down menu and all of the cities in that state were then listed. After each desired city was selected, all social

disorganization information was available. Additionally, all of the information on the control variables was retrieved from the Census Bureau.

Sample

The sample was composed of 2016 NIBRS city data from four states: Kentucky, Tennessee, Virginia, and West Virginia. Those four states were chosen because there has been little intimate partner violence research done in rural cities in those Appalachian states and those are four states that submit their crime data to NIBRS.

To examine rural cities and towns, those with a population ranging from 2,500 to 50,000 residents were selected in each state. These populations were taken from the 2016 estimates from the United States Census Bureau. For this particular study, cities with fewer than 2,500 residents were excluded because the populations were too small. Cities with more than 50,000 residents were also excluded because the populations were too large.

According to the United States Census Bureau (2018), Urbanized Areas are areas with 50,000 or more residents. Urban Clusters are areas with at least 2,500 residents and less than 50,000 residents. Based on these definitions, all cities in the current study would fall under the Urban Cluster definition; however, a new definition of rural cities was defined for this study because the definitions of rural were too vague and did not make sense for this study. For example, the U.S. Census Bureau defines rural as "population, housing, and territory not included within an urban area" (2018).

Many scholars have found that the maximum distance most people would be willing to commute for work was 30.0 miles one way (Kim, 2008; Modarres, 2013). Therefore, 30.0 miles from an urbanized city (50,000 or more residents) was the determining factor because most people would not be willing to travel further than 30.0 miles one way for work. If any city was

within 30.0 miles to a city with a population of 50,000 or more residents, it was excluded for being too close to an urbanized area.

In the circumstance where two or more rural cities bordered each other, only one was included in the study because it would be an urbanized cluster. When this occurred, each city was assigned a "1" or a "2," based on alphabetical order, and an online random number generator was used to determine which city would be included in the study.

Any of the remaining cities were examined to see if there was a college or university within that city that had its own sworn campus police department because the data would be more consistent if all arrests are made by the same jurisdiction. When there are multiple police agencies, it is possible that they could take different approaches with how they respond to offenses, so keeping it all from the same agency ensures consistency. It should be noted that campus security officers are different than campus police departments. If the city had a college or university with its own sworn campus police department, that city was excluded. There was a total of 189 cities, and the final list can be found in Appendix A.

Independent Variables

There are multiple characteristics of social disorganization theory; however, only some of them are included in the current study because the current study aims to improve upon Goodson and Bouffard's (2017) study, and the same social disorganization characteristics those researchers used will be used here. Thus, the independent variables are residential instability, ethnic heterogeneity (minority), percent living below the poverty line, percent unemployed, percent single female-headed households, and median household income. The six independent variables with how they were measured are bulleted on the following page:

- Residential instability: The variable was reported on the Census Bureau's website as residents who have remained in their homes for the last 365 days, so that number was subtracted from 100 to obtain the percentage of residents that have moved.

- Ethnic heterogeneity: This variable was measured by percent non-white. Percent white was reported on the Census Bureau's website, so that number was subtracted from 100 to obtain the percent non-white for each city.

- Poverty: This variable was reported on the Census Bureau's website as percentage of residents living below the poverty line.

- Unemployment: This variable was reported on the Census Bureau's website as percentage of residents who are unemployed.

- Single female-headed households: This variable was reported on the Census Bureau's website as percentage of single female-headed households.

- Median household income: This variable was reported on the Census Bureau's website as median household income.

Dependent Variable

Goodson and Bouffard (2017) only studied aggravated assaults, simple assaults, and intimidation for intimate partner violence offenses. Since the current study aims to improve upon that study, those were the three types of offenses included in this study. Therefore, the crime data was filtered to aggravated assaults, simple assaults, and intimidation. In NIBRS, aggravated assaults were coded as "131," simple assaults were coded as "132," and intimidation was coded as "133" (U.S. Department of Justice, 2018).

For the victim-offender relationships, Goodson and Bouffard (2017) studied intimate partner relationships, familial relationships, acquaintance relationships, and stranger assault. The

current study is only focusing on intimate partner relationship assaults, so the crime data was

then filtered down to only intimate partner assaults. Intimate partners include spouse, common

law spouse, boyfriend or girlfriend, and ex-spouse. In NIBRS, spouse was coded as "1,"

common law spouse was coded as "2," boyfriend or girlfriend was coded as "18," and ex-spouse

was coded as "21" (U.S. Department of Justice, 2018).

The dependent variable comes from NIBRS and is a count for each city of aggravated

assault, simple assault, and intimidation reports in which the relationship of the offender and

victim is spouse, common law spouse, boyfriend or girlfriend, and ex-spouse. In NIBRS,

aggravated assault is defined as an unlawful attack by one person where the offender uses a

weapon or displays a weapon in a threatening way, or the victim sustains serious injury (U.S.

Department of Justice, 2018). Serious injuries include loss of teeth, broken bones, severe

laceration, loss of consciousness, internal injuries, and assault with disease. Assault with disease

is when the offender knows he or she is infected with a disease and purposely tries to pass the

disease to the victim via biting, scratching, or spitting (U.S. Department of Justice, 2018).

As defined by NIBRS, simple assault is an unlawful attack by one person where the

offender does not display a weapon and the victim does not sustain serious injuries (U.S.

Department of Justice, 2018). Examples of simple assault include pushing, punching, slapping,

and throwing blunt objects.

Intimidation is placing another person in reasonable fear of bodily harm by use of

threatening words or behavior, but without physically attacking the victim or displaying a

weapon (U.S. Department of Justice, 2018). These types of threats can be made through text

messages, phone calls, letters, or in person.

Control Variable

Control variables are included to determine if there is an outside effect on the dependent variable, or if it is truly the independent variables affecting the dependent variable (Salkind, 2010). The control variables are not the main interest (Salkind, 2010). While Goodson and Bouffard (2017) did not include any control variables in their study, the present study uses educational attainment as a control variable, specifically, the percent of those with at least a bachelor's degree. The purpose of this control variable is to determine if educational attainment has any outside effect on intimate partner violence, or if it is the social disorganization characteristics that are correlated to intimate partner violence in rural areas.

It has been found that individuals with higher educational levels are less likely to be victims or offenders of intimate partner violence (Marium, 2014; Rapp, Zoch, Khan, Pollmann, & Krämer, 2012; Shiraz, 2016). Additionally, Jeyaseelan et al. (2004) determined that individuals with only a high school diploma are more than twice as likely to be victims of intimate partner violence compared to those who have a college degree, especially females. The researchers found that individuals with at least a bachelor's degree were able to express their feelings and communicate better with partners than those who did not receive a bachelor's degree and were less likely to lash out at a partner.

A second control variable that will be used is median age. The purpose of this control variable is to determine if median age has any effect on intimate partner violence, or if the social disorganization characteristics are related to intimate partner violence. Hirschi and Gottfredson (1983) found that most individuals age out of crime between 24 and 30 years old. The researchers found that offenders age out of property crime around 24 years old and violent crime around 30 years old.

The final control variable is population. This was chosen as a control variable because the current study is examining intimate partner violence in rural cities with 2,500 to 50,000 residents. A population with fewer than 2,500 residents would be too small to study, and a population more than 50,000 residents would be too large to study.

Statistical Analysis

First, multicollinearity tests will be conducted to determine if any of the independent variables are highly correlated. A correlation of 0.80 is when variables are considered highly correlated (Gujarati, 2003). Also, the variance inflation factor (VIF) statistic will be examined to determine if any of the independent variables have a strong linear association (Stevens, 1992). A VIF statistic of 10 or higher indicates a strong linear association (Stevens, 1992).

A standard multiple regression analysis will be performed between the dependent variable (intimate partner violence) and the independent variables (residential instability, ethnic heterogeneity, percent living below the poverty line, percent unemployed, percent single female-headed households, and median household income). The reason multiple regression will be used is because the goal of the current study is to determine if there is any relationship between the independent variables and the dependent variable. Additionally, a multiple regression analysis would show how strong or weak the effect the independent variables have on the dependent variable (Mertler & Vannatta, 2002).

A backward stepwise regression will also be conducted. A backward stepwise regression starts with all variables in the model and deletes the least significant variable. The model runs until the remaining variable is the most significant. A backward stepwise regression will be run because it tests the deletion of the most insignificant variables and reruns the model until only

the most significant variables are left; therefore, the variables that do not significantly contribute

to the regression will be deleted (Mertler & Vannatta, 2002).

Chapter 4. Results

This chapter includes the quantitative results of the study. The descriptive statistics can be found below, as well as a correlation matrix for the independent variables. The model summary and the coefficients table for the multivariate regression are included. Additionally, the model summary and the coefficients table for the backward stepwise regression are included in this chapter.

Descriptive Statistics

One hundred eighty-nine (189) cities were included in the analysis. There were 52 cities in Kentucky, 65 cities in Tennessee, 41 cities in Virginia, and 31 cities in West Virginia. A map of all of the cities can be found in Appendix B.

The mean residential instability was 17.17% (standard deviation = 0.06, median = 16.40%) with a range of 26.20%. The mean percentage of minority residents was 18.57% (standard deviation = 0.15, median = 15.40%) with a range of 82.50%. The mean percentage of residents living below the poverty line was 22.37% (standard deviation = 0.09, median = 22.70%) with a range of 45.20%. The mean percentage of unemployed residents per city was 4.87% (standard deviation = 0.02, median = 4.87%) with a range of 15.20%. The mean percentage for single female-headed households was 15.11% (standard deviation = 0.06, median = 14.70%) with a range of 51.60%. Finally, the mean household income was $38,790.66 (standard deviation = $15,879.09, median = $35,472) with a range of $141,026.00. The full set of descriptive statistics can be found in Table 1. To give a visual representation of the data, Appendixes C through H represent heat maps for each independent variable and the total intimate partner violence in each city.

Table 1

Descriptive Statistics

	Mean	Median	25th Percentile	75th Percentile	Mode	Standard Deviation
Living in Same Home	82.83%	83.60%	78.80%	87.20%	78.40%	0.06
Non-White	18.57%	15.40%	8.20%	25.15%	6.90%	0.15
Living in Poverty	22.37%	22.70%	16.60%	27.80%	14.60%	0.09
Unemployment	4.87%	4.87%	3.35%	5.80%	3.70%	0.02
Female-Headed Households	15.11%	14.70%	11.90%	18.20%	16.60%	0.06
Household Income	$38,790.66	$35,363.00	$30,164.00	$42,950.00	$34,063.00	$15,879.09

Table 1 (Continued)

Descriptive Statistics

	Sample Variance	Kurtosis	Skewness	Range	Minimum	Maximum
Living in Same Home	0.00	-0.27	-0.42	26.20%	67.60%	93.80%
Non-White	0.02	3.27	1.64	82.50%	0.10%	82.60%
Living in Poverty	0.00	-0.09	-0.06	45.20%	1.70%	46.90%
Unemployment	0.00	2.43	1.33	15.20%	0.00%	15.20%
Female-Headed Households	0.00	11.48	1.88	51.60%	2.30%	53.90%
Household Income	$252,145,601.18	22.22	3.85	$141,026.00	$18,711.00	$159,737.00

Multicollinearity

Multicollinearity tests were conducted in SPSS to compare collinearity levels to ensure the independent variables were not highly correlated. Mertler and Vannatta (2002) have suggested that if two variables are highly correlated, those variables contain similar information, meaning that those variables would be testing the same thing. To check for multicollinearity, a correlation matrix was run in SPSS. A correlation of 0.80 is when multicollinearity becomes an issue (Gujarati, 2003). The highest correlation in the present study was 0.36, which indicated multicollinearity was not an issue. Additionally, Stevens (1992) has stated that a variance inflation factor (VIF) value of 10 or higher suggests strong collinearity. The highest VIF statistic in the model is 1.39; therefore, none of the variables are strongly correlated. A full correlational matrix can be found below in Table 2. In addition, a table indicating the VIF statistics can be found in Table 3.

Table 2

Correlation Matrix

	Living in Poverty	Unemployment	Female-Headed Households	Household Income	Living in Same Home	Non-White
Living in Poverty	1	0.36**	0.33**	-0.26**	-0.24**	0.14
Unemployment	0.36**	1	0.21**	0.01	-0.20**	0.05
Female-Headed Households	0.33**	0.21**	1	0.01	-0.06	0.30**
Household Income	-0.26**	0.01	0.01	1	0.15*	0.22**
Living in Same Home	-0.24**	-0.20**	-0.06	0.15**	1	0.04
Non-White	0.14	0.05	0.30**	0.22**	0.04	1

**Correlation is significant at the 0.01 level (2 – tailed).
*Correlation is significant at the 0.05 level (2 – tailed).

Table 3

VIF Statistics

	VIF
Living in Poverty	1.39
Unemployment	1.12
Female-Headed Households	1.23
Household Income	1.20
Living in Same Home	1.09
Non-White	1.20

Multivariate Regression

The multivariate regression represents all six of the independent variables and all three control variables. As mentioned previously, the six independent variables were residential instability, percent minority, percent living in poverty, percent unemployed, percent single female-headed households, and median household income. As noted in Chapter 3, this study hypothesized that cities with higher percentages of residential instability, higher percentages of non-white residents, and higher percentages of unemployment would be positively correlated to intimate partner violence. Also, the study hypothesized that cities with higher percentages of residents living below the poverty line, higher percentages of single female-headed households, and lower household incomes would all be positively correlated to intimate partner violence.

The three control variables in this study were percent with at least a bachelor's degree, median age, and city population. The purpose of the control variables was to test the hypotheses

with the six independent variables while controlling for the effects of educational attainment, age, and city population.

The model as a whole was significant (F = 2.00, $p < 0.05$). The model summary indicated that the overall model of the six independent variables does significantly predict intimate partner violence in rural cities and towns, $R^2 = 0.09$, $R^2_{adj} = 0.05$, $F(9, 179,) = 2.00$, $p < 0.05$. When examining all independent and control variables with the dependent variable (intimate partner violence per 1,000 persons), the only variable that was significant was percent non-white ($\beta = 0.21$, $p < 0.01$). Therefore, the hypothesis about cities with higher percentages of non-white residents was supported, and all other hypotheses were rejected. In addition, no control variable had a statistically significant impact on the dependent variable. The R-squared value was 0.09, which is a weak strength. Since the R-squared value is 0.09, 9% of the variance can be explained through the regression model. The model summary for all of the variables in the multivariate regression, including the R-squared, is shown in Table 4, Model 1. A further breakdown can be found in Table 5, Model 1.

The effect size measures how strong or weak the relationship between the independent and dependent variable is (Cohen, 1988). Since percent non-white was significant, the effect size is measuring the strength between percent non-white and intimate partner violence in rural cities and towns. The effect size for the multivariate regression was 0.10, which is considered a small effect size (Cohen, 1988). Cohen (1988) has noted that 0.10 is a small effect size, 0.30 is a medium effect size, and 0.50 is a large effect size.

While percent non-white was significant, the effect size was considered small. This indicated that social disorganization was not significant, but percent non-white was significant;

however, that relationship is not strong enough to determine that social disorganization was driving the intimate partner violence.

Backward Stepwise Regression

The second model summary is backward stepwise regression with all six of the independent variables, and all three of the control variables. The purpose of using the backward stepwise regression was to identify the most significant variables, whether that was the independent variables or control variables, that affect intimate partner violence. A backward stepwise regression was conducted in SPSS. A backward stepwise regression was chosen because it tests the deletion of the most insignificant variables and reruns the model until only the most significant variables are left; therefore, the variables that did not significantly contribute to the regression were deleted (Mertler & Vannatta, 2002).

Overall, the model as a whole was significant, (F = 7.61, $p < 0.01$). The most significant variables were percent non-white ($\beta = 0.24$, $p < 0.01$) and household income ($\beta = -0.13$, $p < 0.10$). Hosmer and Lemeshow (1989) suggested that 0.10 can be used as a significance level. Although many researchers do not use 0.10 as a significance level, it is still a valid significance (Hosmer & Lemeshow, 1989). This model is consistent with the previous model. The R-squared value was 0.08, which is a very weak strength. Since the R-squared value for those two variables was 0.08, this meant approximately 8% of the variance can be explained through the standard deviation. Table 4 contains all results from all models in the backward stepwise regression. Additionally, Tables 5, 6, and 7 show how the individual models change after the elimination of insignificant variables.

Table 4

Model Summary for Backward Stepwise Regression

Model	R	R²	Adjusted R²	Std. Error of the Estimate	R² Change	F Change	DF 1	DF 2	Sig. F Change
1	0.30	0.09	0.05	4.05	0.09	2.00	9	179	0.04
2	0.30	0.09	0.05	4.04	0.00	0.00	1	179	0.96
3	0.30	0.09	0.06	4.03	0.00	0.01	1	180	0.91
4	0.30	0.09	0.06	4.02	0.00	0.53	1	181	0.47
5	0.29	0.09	0.06	4.02	0.00	0.43	1	182	0.51
6	0.29	0.08	0.06	4.02	0.00	0.71	1	183	0.40
7	0.28	0.08	0.07	4.01	0.00	0.46	1	184	0.50
8	0.28	0.08	0.07	4.01	-0.01	0.99	1	185	0.32

Table 5

Backward Stepwise Multivariate Regression Analysis Models 1, 2, 3

	Model 1				Model 2				Model 3			
	B	Std. Error	Beta	Sig.	B	Std. Error	Beta	Sig.	B	Std. Error	Beta	Sig.
Constant	0.85	5.49		0.89	1.03	3.89		0.94	1.02	3.89		0.88
Median household income	-2.67E-5	0.00	-0.10	0.10*	-2.63E-5	0.00	-0.10	0.10*	-2.36E-5	0.00	-0.09	0.10*
Non-White	0.06	0.02	0.21	0.05**	0.06	0.02	0.21	0.05**	0.06	0.02	0.21	0.03**
Population	4.37E-5	0.00	0.09	0.17	4.35E-5	0.00	0.09	0.16	4.49E-5	0.00	0.09	0.14
Living in poverty	0.04	0.05	0.09	0.14	0.04	0.05	0.09	0.12	0.04	0.05	0.09	0.10*
Unemployed	-0.11	0.13	-0.06	0.37	-0.11	0.13	-0.06	0.35	-0.11	0.13	-0.06	0.37
Median age	0.05	0.07	0.06	0.39	0.05	0.07	0.06	0.40	0.05	0.07	0.06	0.47
Single female headed-households	0.04	0.06	0.06	0.52	0.04	0.06	0.06	0.53	0.04	0.06	0.06	0.54
At least Bachelor's degree	0.01	0.05	0.02	0.34	0.01	0.05	0.01	0.33				
Living in same home	0.00	0.06	0.00	0.80								
R		0.30				0.30				0.3		
R²		0.09				0.09				0.09		
Adjusted R²		0.05				0.05				0.06		
Std. Error of the Estimate		4.05				4.04				4.03		
R² Change		0.09				0.00				0.00		
F Change		2.00				0.00				0.01		
DF 1		9				1				1		
DF 2		179				179				180		
Sig. F Change		0.04				0.96				0.91		

* Significant at the 0.10 level

** Significant at the 0.05 level

*** Significant at the 0.01 level

Table 6

Backward Stepwise Multivariate Regression Analysis Models 4, 5, 6

	Model 4				**Model 5**				**Model 6**			
	B	Std. Error	Beta	Sig.	B	Std. Error	Beta	Sig.	B	Std. Error	Beta	Sig.
Constant	1.97	3.65		0.09*	4	1.96		0.13	3.64	1.91		0.29
Median household income	-2.63E-5	0.00	-0.10	0.10**	-2.84E-5	0.00	0.09	0.12	-2.70E-5	0.00	-0.11	0.19
Non-White	0.06	0.02	0.22	0.04**	0.06	0.02	0.21	0.04**	0.06	0.02	0.21	0.02**
Population	4.56E-5	0.00	0.09	0.17	4.21E-5	0.00	0.09	0.19	3.96E-5	0.00	0.08	0.31
Living in poverty	0.05	0.05	0.09	0.11	0.04	0.05	0.09	0.16	0.03	0.05	0.07	0.03**
Unemployed	-0.10	0.13	-0.06	0.34	-0.11	0.13	-0.06	0.29				
Median age	0.04	0.07	0.05	0.41								
Single female-headed households												
At least Bachelor's degree												
Living in same home												
R		0.30				0.29				0.29		
R²		0.09				0.09				0.08		
Adjusted R²		0.06				0.06				0.06		
Std. Error of the Estimate		4.02				4.02				4.02		
R² Change		0.00				0.00				0.00		
F Change		0.53				0.43				0.71		
DF 1		1				1				1		
DF 2		181				182				183		
Sig. F Change		0.47				0.51				0.40		

* Significant at the 0.10 level

** Significant at the 0.05 level

*** Significant at the 0.01 level

Table 7

Backward Stepwise Multivariate Regression Models 7, 8

	Model 7				Model 8			
	B	Std. Error	Beta	Sig.	B	Std. Error	Beta	Sig.
Constant	4.79	0.86		0.11	4.82	0.86		0.01***
Median household income	-3.86E-05	0.00	-0.15	0.21	-3.38E-05	0.00	-0.13	0.10*
Non-White	0.06	0.02	0.22	0.00***	0.07	0.02	0.24	0.00***
Population	3.67E-05	0.00	0.08	0.05**				
Living in poverty								
Unemployed								
Median age								
Single female-headed households								
At least Bachelor's degree								
Living in same home								
R		0.28				0.28		
R²		0.08				0.08		
Adjusted R²		0.07				0.07		
Std. Error of the Estimate		4.01				4.01		
R² Change		0.00				-0.01		
F Change		0.46				0.99		
DF 1		1				1.00		
DF 2		184				185.00		
Sig. F Change		0.50				0.32		

* Significant at the 0.10 level

** Significant at the 0.05 level

*** Significant at the 0.01 level

The unstandardized coefficient (B) is the direction and amount of change in the dependent variable resulting from one unit change in the independent variables (Mertler & Vannatta, 2002). The standardized regression coefficient (β) measures how strongly each independent variable influences the dependent variable (Mertler & Vannatta, 2002). As the β coefficient approaches 0, this indicates that there is not a strong relationship between the variables (Mertler & Vannatta, 2002). According to Mertler and Vannatta (2002), an R value of 0 suggests that there is not an association between the independent variables and the dependent variable. However, an R value of 1 suggests that the dependent variable can be predicted through the independent variables with confidence (Mertler & Vannatta, 2002).

The R^2 value is also known as the coefficient of determination. The R^2 value indicates the proportion of the variability in the dependent variable that can be explained by the combination of the independent variables (Mertler & Vannatta, 2002). While the R^2 value shows the variance of all the independent variables, the adjusted R^2 indicates the variance of only the independent variables that affect the dependent variable (Mertler & Vannatta, 2002).

The backward stepwise regression began with six independent variables and three control variables and used total intimate partner violence per 1,000 persons as the dependent variable (Model 1). In Model 1, the R value was 0.30, which indicated there was a weak relationship between the independent and control variables with the dependent variable. The R^2 value was 0.09, which suggested that 9% of the variance of total intimate partner violence per 1,000 persons could be explained through the nine variables. The p value was 0.04. Model 2 eliminated living in same home, which resulted in an R value of 0.30, and an R^2 value of 0.09. The p value of Model 2 was 0.96. This generated a non-significant result. Model 3 eliminated the variable at

least a bachelor's degree, which resulted in an R value of 0.30, R^2 value of 0.09, and a p value of 0.91, which was non-significant.

The fourth model eliminated single female-headed households. This produced an R value of 0.30, an R^2 value of 0.09, and a p value of 0.47, generating a non-significant result. Model 5 eliminated the variable median age, resulting in an R value of 0.29, an R^2 value of 0.09, and a p value of 0.51, which was non-significant. Model 6 eliminated unemployed, resulting in an R value of 0.29, an R^2 value of 0.08, and a p value of 0.40. This produced a non-significant result. Model 7 eliminated the variable living in poverty. This resulted in an R value of 0.28, an R^2 value of 0.09, and a non-significant p value at 0.50. Model 8 eliminated the variable population, resulting in an R value of 0.28, an R^2 value of 0.08, and a p value of 0.32, which was non-significant.

Living in same home was the first variable to be eliminated from the model. The second variable to be eliminated was at least a bachelor's degree, followed by single female-headed households. The fourth variable to be eliminated was median age, followed by unemployed, poverty, and population. The two variables that had the strongest effect on the R^2 were median household income and percent non-white, resulting in those two variables being the last variables in the model. All other variables had been eliminated. This is shown in Model 8, located in Table 8. After all other variables were eliminated, median household income and percent non-white indicated an R^2 of 0.08 and p value of 0.32, which suggests a non-significant, very weak relationship.

In the first backward stepwise model, the two variables that were significant were median household income ($\beta = -0.10$, $p < 0.10$) and percent non-white ($\beta = 0.21$, $p < 0.05$). The Beta value shows that there is an inverse relationship between household income and intimate partner

57

violence in Model 1. As median household income decreased, intimate partner violence increased. For percent non-white, as the percentage of minority residents increased, intimate partner violence increased. Model 2 produced the exact same Beta values and significance levels as Model 1. This shows that the variable living in the same home did not affect the regression, because the values did not change after its elimination.

Backward stepwise Model 3 produced three significant variables. In addition to median household income ($\beta = -0.09$, $p < 0.10$) and percent non-white ($\beta = 0.21$, $p < 0.05$) being significant, living in poverty ($\beta = 0.09$, $p < 0.10$) was also significant. The elimination of at least a bachelor's degree allowed living in poverty to become significant. Since living in poverty was significant in this model, the elimination of the variable at least a bachelor's degree had some sort of effect on the regression and intimate partner violence. However, once the variable percent single female-headed households was eliminated, poverty was no longer significant.

Backward stepwise Model 4 produced two significant variables, median household income ($\beta = -0.10$, $p < 0.10$) and percent non-white ($\beta = 0.22$, $p < 0.05$). This is consistent with the other models. As household income per city decreased, intimate partner violence increased, and as the percentages of minority residents per city increased, so did intimate partner violence. However, after single female-headed households was eliminated, living in poverty was no longer significant in Model 4. All of the information stated above can be found in Table 7.

In the fifth backward stepwise model, the only significant variable was percent non-white ($\beta = 0.21$, $p < 0.05$). This means that as median age was deleted in Model 5, this caused median household income to generate a non-significant result. In Model 6, the elimination of unemployed resulted in two significant variables, percent non-white ($\beta = 0.21$, $p < 0.05$) and living in poverty ($\beta = 0.07$, $p < 0.05$). As mentioned previously, cities and towns with higher

minority populations experienced more intimate partner violence, and cities and towns with more residents living in poverty also experienced more intimate partner violence.

Model 7 produced two significant variables, percent non-white ($\beta = 0.21$, $p < 0.01$) and population ($\beta = 0.07$, $p < 0.05$). Population became significant once living in poverty was eliminated from the model. Model 7 showed cities and towns with higher rates of minority populations experienced higher rates of intimate partner violence and as population increased, so did intimate partner violence. The final model, Model 8, showed that median household income ($\beta = -0.13$, $p < 0.10$) and percent non-white ($\beta = 0.24$, $p < 0.05$) were both significant. After population was eliminated, median household income generated a significant result. Again, cities and towns with higher minority populations experienced higher rates of intimate partner violence, and cities and towns with lower household incomes experienced higher rates of intimate partner violence. This can be found in Table 7.

The effect size for Model 8 in the backward stepwise regression was 0.08. Similar to the multivariate regression, this is considered a small effect size (Cohen, 1988). This indicates that social disorganization is not significant; even though percent non-white and median household income were significant, the relationship is not strong enough to confirm that social disorganization characteristics are not driving intimate partner violence in rural cities and towns.

Conclusion

The results from the multivariate regression showed that the only independent variable that was significant was percent non-white. Therefore, the only hypothesis that was supported was cities and towns with higher percentages of minority residents will experience higher rates of intimate partner violence per 1,000 persons. However, the backward stepwise regression

indicated that median household income was also significant. Therefore, in the backward stepwise regression, the hypothesis about median household income was also supported.

Since both percent non-white and median household income were significant in the backward stepwise regression, the hypotheses stating higher percentages of non-white residents will result in higher levels of intimate partner violence and median household income were supported. The backward stepwise regression results indicated that no other statistically significant relationships were detected. Therefore, all other hypotheses were rejected. Chapter 5 will include a discussion about the current study, limitations and implications, and recommendations for future research.

Chapter 5. Discussion/Conclusion

Summary

The first hypothesis stated that when controlling for other social disorganization variables, rural cities and towns with higher residential instability will have higher rates of intimate partner violence per 1,000 persons. This hypothesis was rejected. The second hypothesis stated that when controlling for other social disorganization variables, rural cities and towns with higher levels of minority populations will have higher rates of intimate partner violence per 1,000 persons. This hypothesis was supported. The third hypothesis stated that when controlling for other social disorganization variables, rural cities and towns with higher percentages of residents living below the poverty line will have higher rates of intimate partner violence per 1,000 persons. This hypothesis was rejected.

The fourth hypothesis stated that when controlling for other social disorganization variables, rural cities and towns with higher percentages of unemployment will have higher rates of intimate partner violence per 1,000 persons. This hypothesis was also rejected. The fifth hypothesis stated that when controlling for other social disorganization variables, rural cities and towns with higher percentages of percent single female- households will have higher rates of intimate partner violence per 1,000 persons. This hypothesis was rejected. The sixth hypothesis stated that when controlling for other social disorganization variables, rural cities and towns with lower household incomes will lead to higher rates of intimate partner violence per 1,000 persons. This hypothesis was supported.

Goodson and Bouffard (2017) found that residential instability, poverty, unemployment, single female headed-households, income, and minority populations were all significantly related to intimate partner violence. Since the goal of this research was to improve Goodson and

61

Bouffard's (2017) study, most of the results of the present study are not consistent with the researchers' results. However, higher percentages of minority populations and lower household incomes were significantly related to intimate partner violence, which were consistent with their results.

Discussion

Goodson and Bouffard (2017) found that intimate partner violence can be explained through social disorganization at the county level. The present study did not find that intimate partner violence in rural cities and towns can be explained through social disorganization. The present study focused on intimate partner violence at the city level. There could be a different dynamic at a city level compared to the county level. For example, in Virginia, cities are separate entities from counties. People who live in a city do not have a county government; they have a local city government (National League of Cities, 2016). This differs from most other states. In Kentucky, Tennessee, and West Virginia, people who live in a city also live within the county. Thus, the dynamic of a city could be different than the dynamic of a county.

In the multivariate regression, the only variable that produced a statistically significant result was percent non-white. Percent non-white was significant at the 0.01 level. Model 8 in the backward stepwise regression produced statistically significant results at the 0.05 level, and the 0.10 level, respectively. Percent non-white was significant at the 0.05 level, and median household income was significant at the 0.10 level.

Appendix C shows percent living in the same home and intimate partner violence in each city. Based on social disorganization theory, the cities with the larger dots (percentage of residents living in the same home) would experience less violence because the residents have been there longer and would have more stakes in their community, which leads to more informal

social control, leading to less crime. There are cities that have higher rates of residential instability and cities with lower rates of residential instability, but both have high rates of intimate partner violence, suggesting that perhaps residential instability alone does not predict intimate partner violence in small rural cities.

Appendix D shows percent non-white and intimate partner violence in each city. The cities with the larger dots represent higher percentages of minority populations. Cities with larger dots should have higher levels of crime, based on social disorganization theory. However, there are many cities with low percentages of minority populations but have higher rates of intimate partner violence. For example, Pulaski, Virginia had the highest rate of intimate partner violence, but one of the lowest percentages of minority populations. This could imply that percent non-white cannot be examined individually to predict intimate partner violence in rural cities.

Appendix E represents percent of residents in each city living below the poverty line and intimate partner violence. Larger dots indicate more residents living in poverty. As previously mentioned, social disorganization states that areas with higher levels of residents living in poverty would experience more crime. Appendix D shows that there are cities with higher rates of residents living in poverty, as well as cities with lower rates of residents living in poverty, suggesting that poverty might not be an individual predictor for intimate partner violence in rural cities and towns.

Unemployment and intimate partner violence in each city are depicted in a heat map in Appendix F. The larger dots represent cities with higher rates of unemployment. According to social disorganization theory, the cities with higher rates of unemployment would have more violence. However, cities with low and high rates of unemployment experienced higher rates of

intimate partner violence. This indicates that unemployment might not explain intimate partner violence in rural cities and towns.

Appendix G represents a heat map for single female-headed households and intimate partner violence in each city. The higher percentage of single female-headed households should equate to more intimate partner violence in each city. Yet, there are cities with lower percentages of single female-headed households but higher percentages of intimate partner violence, indicating single female-headed households might not be an individual predictor of intimate partner violence.

Finally, a heat map of median household income and intimate partner violence in each city is shown in Appendix H. The lower the median household income is for each city, the more intimate partner violence that city should experience. While some cities that had lower median household incomes did experience higher rates of intimate partner violence, not all of the cities with lower median household incomes did experience it. This suggests that median household income alone cannot predict intimate partner violence in rural cities and towns.

Finding a significant result for the variable percent non-white is consistent with previous research on intimate partner violence (Boggess & Hipp, 2010; Ellison, Trinitapoli, Anderson, & Johnson, 2007; Goodson & Bouffard, 2017). Boggess and Hipp (2010) determined there was more intimate partner violence in cities with higher minority populations because minority populations do not take protective effects towards violent crimes. Similarly, Ellison and colleagues (2007) and Goodson and Bouffard (2017) found that the more ethnically diverse an area is, there is a lesser likelihood social control can be exerted, which results in more violence. These results are also consistent with Sampson and Groves' (1989) research on ethnic

heterogeneity; the higher the minority population is, the more the community is affected, which equates to more crime.

Perhaps rural cities and towns with higher minority populations have competing views, which leads to lowered informal social control, thus, more intimate partner violence. Median household income producing a significant result is also consistent with previous research on intimate partner violence (Gibson-Davis et al., 2005; Goodson & Bouffard, 2017; Slabbert, 2016). The literature suggests that victims of intimate partner violence do not have the financial means to leave abusive relationships. Braithwaite (1979) found that people experiencing financial stress are more likely to lash out at people close to them, such as a significant other.

Since the only variable that was significant in both regression models was percent non-white, it can be determined that social disorganization does not significantly predict intimate partner violence. Because intimate partner violence is a complicated crime, perhaps intimate partner violence is a combination of multiple different factors. For example, social disorganization dos not consider the cycle of violence. The cycle of violence has three phases: the tension building phase, the abusive incident, and the honeymoon phase. The tension building phase has been described as the "walking on eggshells" phase (Focht, 2019). The abusive incident is when the offender lashes out at the victim. Finally, the honeymoon phase is when the offender apologizes for the incident, purchases gifts to "make up" for the incident, and then becomes affectionate (Focht, 2019). The cycle of violence is very complex and is hard to break. Breaking the cycle of violence usually only occurs once there has been some type of intervention, such as the offender being arrested, or the victim successfully leaving the relationship (Stein & Kennedy, 2001).

Another factor that could contribute to intimate partner violence is cognitive distortions, which is under psychological theory. Cognitive distortions include neutralizing behavior, rationalizing actions, and making excuses for one's behavior (Dempsey & Day, 2011). According to Anderson and Umberson (2001), domestically violent men are more likely to minimize their behavior through cognitive distortions. Additionally, violent people are more likely to hold a certain type of view about themselves and their behavior (Dempsey & Day, 2011). However, cognitive thinking happens regardless of social class and socioeconomic factors. This is inconsistent with social disorganization theory because socially disorganized places are typically seen as areas with higher rates of transient populations, unemployment, and living below the poverty line. Crime is endemic, and intimate partner violence could be unpredictable through a single standard theory.

A theory that could be used in conjunction with social disorganization theory is cognitive theory. Cognitive theory states that people's distorted perceptions of other people or emotions influence their own reactions and emotions (Beck, 1999). Beck (1999) linked emotional and behavioral expressions with human thinking. Beck asserted that most humans, when upset or frustrated, see the world in a negative, biased way (Beck, 1999). It has been argued that violent crimes, such as intimate partner violence, are exaggerations of everyday thoughts. For example, if an individual does not have healthy coping mechanisms for life stressors, he/she could view his/her significant other in a negative way. If these thoughts are paired with social disorganization characteristics such as poverty or unemployment, that person could become violent towards his/her significant other.

It should be noted that cognitive theory is an individual characteristic, whereas social disorganization examines places as a whole. However, a city can have a lower median income,

but people on an individual level can also have lower incomes. Future research on intimate partner violence should examine cognitive theories.

In small rural cities, social disorganization does not appear to be related to intimate partner violence. Social learning theory suggests that behavior is learned. Individuals learn behavior from direct experiences and witnessing others' behavior (Akers, 1977). Violent behavior is learned directly or indirectly through parents, siblings, and peers. The behavior is reinforced through either rewards or punishments (Akers, 1977). As children get older, they learn that violent behavior is an acceptable way to cope with conflict or stress.

When social disorganization theory is examined in conjunction with social learning theory, the two theories could better explain intimate partner violence. Coster, Heimer, and Whittrock (2016) found youths that grow up in a home with family violence and also live in poverty are more likely to engage in violence when they are adults. Future research on intimate partner violence should investigate social learning theory.

One way that social learning theory can be tested is through the National Survey of Families and Households (NSFH). The NSFH uses longitudinal surveys and data. This could help to show if violence is a pattern within families, and since there are thousands of variables the NSFH tests for, there are longitudinal studies that examine social learning characteristics with social disorganization characteristics.

There are 54 domestic violence shelters in Virginia, and only five of them are in Southwest Virginia (Women's Shelters, 2018c). There are 21 domestic violence shelters in Kentucky, and 54 domestic violence shelters in Tennessee (Women's Shelters, 2018b/ 2018c). West Virginia has 18 domestic violence shelters. Eleven of the 18 shelters are located in central West Virginia (Women's Shelters, 2018d). Since crime is so endemic, there needs to be more

resources in these states because it is difficult to predict where intimate partner violence occurs. Intimate partner violence can occur in all corners of society and throughout all social classes.

Most of the domestic violence shelters in the four states listed previously are in more urbanized areas. This means that victims of intimate partner violence living in rural areas could have to travel many miles to receive any help or intervention. By creating more shelters in rural areas, victims of intimate partner violence might not have to travel as far to receive the necessary services.

Limitations

While this study presents interesting findings, there are some limitations. The first limitation is that intimate partner violence is an underreported crime. One of the biggest reasons victims do not report intimate partner violence is fear of repercussions (Carmo et al., 2011; Entilli & Cipoletta, 2016; Reaves, 2017). The dataset used in the present study was NIBRS, and NIBRS only includes reported data into their reports. So, there could have actually been more intimate partner violence in the cities studied; it was simply unreported. Additionally, residents in rural areas are less likely to view intimate partner violence as an issue, so that could be a reason as to why it is underreported (Edwards, 2015). Future research could look at victimization questionnaires.

A second limitation is that the present study conceptualized a new definition for "rural." Goodson and Bouffard (2017) classified rural counties as nonmetropolitan based on the classification codes created by the U.S. Department of Agriculture. The U.S. Department of Agriculture does not have classification codes at the city level. The U.S. Census Bureau (2018) defined urban clusters as cities with 2,500 to 50,000 residents. Based on that definition, all cities in the present study would fall under urban clusters. There were several definitions of rural

examined, but none of those definitions made sense when defining rural for the present study. For example, the U.S. Census Bureau defines rural as "population, housing, and territory not included within an urban area" (2018). This definition of rural was too vague; therefore, a new definition of rural was conceptualized.

Since Goodson and Bouffard (2017) used a government organization's definition of rural counties, and the present study conceptualized a new definition for rural cities, that could help explain why the present study did not obtain the same results. It was originally thought that the new definition of rural was truly rural, but after further examination, it might not be rural. However, while most of the variables were not significant under the new definition, median household income and percent non-white were still significant. Future research can test different definitions of rural to determine what works best at the city level.

A third limitation is the selection method for deleting certain cities from the sample. If rural cities bordered each other, that was considered an urban cluster (U.S. Census Bureau, 2018). Bordering cities were assigned either a "1" or a "2" based on alphabetical order. An online random number generator was used to eliminate cities delineated with that number. Two cities that border each other in a rural area could pose another dynamic for intimate partner violence. By eliminating one city, this could hide trends or violence statistics in a certain area. Future research could examine all cities that fall within the selection criteria and not eliminate any cities.

Another limitation is the fact that this study examined social disorganization and intimate partner violence in four Appalachian states, although, there are 12 states that fall under the definition of Appalachian. While there are 12 states that fall under the definition of Appalachian, only five of those states submit data to NIBRS (Office of Justice Programs, 2014). Those five

states are Kentucky, South Carolina, Tennessee, Virginia, and West Virginia. South Carolina

could have been included in this study, but given the state is geographically smaller than the

other four states, there would not have been as many rural cities as there were in the other states.

Future research could study all 12 Appalachian states to determine if social disorganization can

explain intimate partner violence in all Appalachian states.

Future Research

Since social disorganization was not significant and does not predict intimate partner

violence in rural cities and towns, future research should examine cognitive distortions and social

learning theory, as previously mentioned. Additionally, future research could investigate intimate

partner violence at the census block level or block group level. Census blocks are the smallest

geographical unit from which the Census Bureau collects information (U.S. Census Bureau,

2014). Block groups are the second smallest geographical unit from which the Census Bureau

collects information. According to the U.S. Census Bureau (2014), a block group consists of

multiple census blocks. This would give variation within the cities as opposed to looking at the

cities holistically.

As mentioned in Chapter 2, the concentric zone theory examined cities in smaller

sections and future research should do that as well. Since census block levels and block group

levels are the smallest units of measure, future research should examine whether a smaller unit of

measure could be related to intimate partner violence.

Conclusion

Intimate partner violence is a crime that can be difficult to study because it is often

underreported (U.S. Department of Justice, 2017). The main focus of this research was to

determine if social disorganization characteristics predicted intimate partner violence in rural

cities and towns. The hypotheses stated that rural cities and towns with higher percentages of residential instability, minority populations, living in poverty, unemployment rates, and single female-headed households would experience higher rates of intimate partner violence. In addition, the sixth hypothesis stated that rural cities and towns with lower median household incomes would experience higher rates of intimate partner violence.

This study found that median household income and percent non-white were significantly related to intimate partner violence in rural cities in towns. However, residential instability, unemployment, poverty, and single female-headed households were not significantly related to intimate partner violence in rural cities and towns. Social disorganization and intimate partner violence in rural cities and towns and the current research is currently limited. However, the research that has been conducted has found that poverty, unemployment, residential instability, and income were significantly related to intimate partner violence (Goodson & Bouffard, 2017; Strand & Storey, 2018).

References

Afifi, T. O., MacMillan, H., Cox, B. J., Asmundson, G. J. G., Stein, M. B., & Sareen, J. (2009). Mental health correlates of intimate partner violence in marital relationships in a nationally representative sample of males and females. *Journal of Interpersonal Violence, 24*(8), 1398-1417.

Albrecht, D. E. (2012). A comparison of metro and nonmetro incomes in a Twenty-First century economy. *Journal of Rural Social Sciences, 27*(1), 1-23.

Anderson, K. L., & Umberson, D. (2001). Gendering violence: Masculinity and power in men's accounts of domestic violence. *Gender & Society, 15*, 358-380.

Beck, A. T. (1999). *Prisoners of hate: The cognitive basis for anger, hostility, and violence*. New York, NY: Perennial.

Bellair, P. E., & Browning, C. R. (2010). Contemporary disorganization research: An assessment and further test of the systemic model of neighborhood crime. *Journal of Research in Crime & Delinquency, 47*(4), 496-521.

Boggess, L. N., & Hipp, J. R. (2010). Violent crime, residential instability, and mobility: Does the relationship differ in minority neighborhoods? *Journal of Quantitative Criminology, 26*(3), 351-370.

Braithwaite, J. (1979). *Inequality, crime, and public policy*. London, England: Routledge & Kegan Paul.

Breiding, M. J., Black, M. C., & Ryan, G. W. (2008). Prevalence and risk factors of intimate partner violence in eighteen U.S. states and territories. *American Journal of Preventative Medicine, 34*(2), 112-118.

Brown, M. J., & Groscup, J. (2009). Perceptions of same-sex domestic violence among crisis

      center staff. *Journal of Family Violence, 24*, 87-93.

Burke, T. W., Jordan, M. L., & Owen, S. S. (2002). A cross-national comparison of gay and

      lesbian domestic violence. *Journal of Contemporary Criminal Justice, 18,* 231-257.

Carmo, R., Grams, A., & Magalhães, T. (2011). Men as victims of intimate partner violence.

      Journal of Forensic and Legal Medicine, 18(8), 355-359.

Centers for Disease Control and Prevention [CDC]. (2010). *NISVS: An overview of 2010 findings*

      on victimization by sexual orientation. Retrieved from

      https://www.cdc.gov/violenceprevention/pdf/cdc_nisvs_victimization_final-a.pdf

Centers for Disease Control and Prevention [CDC]. (2014). *Understanding intimate partner*

      violence. Retrieved from https://www.cdc.gov/violenceprevention/pdf/ipv-factsheet.pdf

Ciarlante, M., & Fountain, K. (2010). *Why it matters: Rethinking victim assistance for lesbian,*

      gay, bisexual, transgender, and queer victims of hate crimes and intimate partner

      violence. Washington, DC: National Center for Victims of Crime.

Coster, S. D., Heimer, K., & Whittrock, S. M. (2016). Neighborhood disadvantage, social

      capital, street context, and youth violence. *The Sociological Quarterly, 47*(4), 723-753.

Daniels, C. (1997). *Feminists negotiate the state: The politics of domestic violence.* Lanham,

      MD: University Press of America.

Dantas, B. R. C., Lucena, K. D. T., Deininger, L. S. C., Andrade, C. G., & Montiero, A. C. C.

      (2016). Gender violence in lesbian relationships. *Journal of Nursing, 10*(11), 3989-3995.

Danzinger, S. K., Kalil, A., & Anderson, N. J. (2000). Human capital, physical health, and

      mental health of welfare recipients: Co-occurrence and correlates. *Journal of Social*

      Issues, 56(4), 635-654.

Dempsey, B., & Day, A. (2011). The identification of implicit theories in domestic violence

    perpetrators. *International Journal of Offender Therapy and Comparative Criminology,*

    55(3), 416-429.

Dewey, M., & Heiss, S. N. (2018). Inclusive branding strategies for domestic violence agencies:

    Embracing opportunities to reach and better serve male-identified survivors. *Journal of*

    Interpersonal Violence, 33(9), 1427-1448.

Drijber, B. C., Reijnders, U., & Ceelen, M. (2013). Male victims of domestic violence. *Journal*

    of Family Violence, 28, 173-178.

Dutton, D. G., & White, K. R. (2013). Male victims of domestic violence. *New Male Studies: An*

    International Journal, 2(1), 5-17.

Edwards, K. M, Mattingly, M. J., Dixon, K. J., & Baynard, V. L. (2014). Community matters:

    Intimate partner violence among rural young adults. *American Journal of Community*

    Psychology, 53, 198-207.

Ellison, C. G., Trinitapoli, J. A., Anderson, K. L., & Johnson, B. R. (2007). Race/ethnicity,

    religious involvement, and domestic violence. *Violence Against Women, 13*(11), 1094-

    1112.

Entilli, L., & Cipolletta, S. (2016). When the woman gets violent: The construction of domestic

    abuse experience from heterosexual men's perspective. *Journal of Clinical Nursing,*

    26(15/16), 2328-2341.

Felson, R. B., Messner, S. F., Hoskin, A. W., & Deane, G. (2002). Reasons for reporting and not

    reporting domestic violence to the police. *Criminology, 40*, 617-648.

Few, A. L. (2005). The voices of black and white rural battered women in domestic violence

    shelters. *Family Relations, 54*, 488-500.

Focht, J. (2019). The cycle of domestic violence. Retrieved from

http://www.center4research.org/cycle-domestic-violence/

Freeman, M., & Owens, E. G. (2011). Low-income housing development and crime. *Journal of Urban Economics, 70*(2/3), 115-131.

Geigis, D. (1992). Tracey Thurman Motuzik. *Hartford Courant*. Retrieved from

http://articles.courant.com/1992-03-15/news/0000204455_1_domestic-violence-domestic-abuse-family-violence-prevention

Gibson-Davis, C. M., Magnuson, K., Gennetian, L. A., & Duncan, G. J. (2005). Employment and risk of domestic abuse among low-income women. *Journal of Marriage and Family, 67*(5), 1149-1168.

Goodson, A., & Bouffard, L. A. (2017). The rural/urban divide: Examining different types of assault through a social disorganization lens. *Journal of Interpersonal Violence,* 1-24. doi:10.1177/0886260517711179

Gordon, L. (2002). *Heroes of their own lives: The politics and history of family violence*. Urbana, IL: University of Illinois Press.

Greenberg, K. (2012). Still hidden in the closet: Trans women and domestic violence. *Berkeley Journal of Gender, Law & Justice, 27*(2), 198-251.

Gujarati, D. N. (2003). *Basic econometrics*. New York, NY: McGraw Hill/Irwin.

Hirschi, T., & Gottfredson, M. (1983). Age and the explanation of crime. *American Journal of Sociology, 89*(3), 552-584.

Hosmer D. W., & Lemeshow, S. (1989). *Applied logistical regression*. New York, NY: Wiley.

Immergluck, D., & Smith, G. (2006). The impact of single-family mortgage and foreclosures on neighborhood crime. *Housing Studies, 21*(1), 851-866.

Izadi, E. (2014). Nearly a third of U.S. women have experienced domestic violence. *The Washington Post.* Retrieved from https://www.washingtonpost.com/news/post-nation/wp/2014/09/08/nearly-a-third-of-u-s-women-have-experienced-domestic-violence

Jain, S., Buka, S. L., Subramanian, S. V., & Molnar, B. E. (2010). Neighborhood predictors of dating violence victimization and perpetration in young adulthood: A multilevel study. *American Journal of Public Health, 100*, 1737-1744.

Jeyaseelan, L., Sadowski, L. S., Kumar, S., Hassan, F., Ramiro, L., & Vizcarra, B. (2004). World studies of abuse in the family environment: Risk factors for physical intimate partner violence. *Injury Control and Safety Promotion, 11*(2), 117-124.

Kim, C. (2008). Commuting time stability: A test of a co-location hypothesis. *Transportation Research Part A: Policy and Practice, 42*(3), 524-544.

Kline, J. R., Ludwig, J., & Katz, L. F. (2005). Neighborhood effects on crime for female and male youth: Evidence from a randomized housing voucher experiment. *The Quarterly Journal for Economics, 120*(1), 87-130.

Lee, E. (2007). Domestic violence and risk factors among Korean immigrant women in the United States. *Journal of Family Violence, 22*(3), 141-149.

Lupri, E., & Grandin, E. (2009). Intimate partner abuse against men. *National Clearinghouse on Family Violence.*

Machisa, M., Christofides, N., & Jewkes, R. (2017). Mental ill health in structural pathways to women's experiences of intimate partner violence. *Plos One, 12*(4), 1740-1752.

McManus, R., & Effington, P. (2007). Suburbs in transition: New approaches to human history. *Urban History, 34*(2) 317-337.

Mertler, C. A. & Vannatta, R. A. (2002). *Advanced and multivariate statistical methods*. Los

    Angeles, CA: Pyrczak.

Miller, B., & Irvin, J. (2017). Invisible scars: Comparing the mental health of LGB and

    heterosexual intimate partner violence survivors. *Journal of Homosexuality, 64*(9), 1180-

    1195.

Moe, A. M. (2009). Battered women, children, and the end of abusive relationships. *Journal of*

    Women and Social Work, 24(3), 244-256.

Modarres, A. (2013). Commuting and energy consumption: Toward and equitable transportation

    policy. *Journal of Transport Geography, 33*(1), 340-349.

Morgan, R. E., & Jasinski, J. L. (2017). Tracking violence: Using structural-level characteristics

    in the analysis of domestic violence in Chicago and the state of Illinois. *Crime &*

    Delinquency, 63(4), 391-411.

Mulleman, R. L., & Burgess, P. (1998). Male victims of domestic violence and their history of

    perpetrating violence. *Academic Emergency Medicine, 5*(9), 866-870.

Nam, S. I., & Lincoln, K. D. (2016). Lifetime family violence and depression: The case of older

    women in South Korea. *Journal of Family Violence, 32*(3), 269-278.

National Domestic Violence Hotline. (2014). *Men can be victims of abuse, too*. Retrieved from

    http://www.thehotline.org/2014/07/22/men-can-be-victims-of-abuse-too/

National Domestic Violence Hotline. (2016). *Get the facts and figures*. Retrieved from

    http://www.thehotline.org/resources/statistics/

National League of Cities. (2016). *Forms of municipal government*. Retrieved from

    https://www.nlc.org/forms-of-municipal-government

Office of Justice Programs. (2014). *National incident-based reporting system.* Retrieved from

      https://www.ovc.gov/pubs/NIBRS/

Park, R., & Burgess, E. W. (1921). *Introduction to the science of sociology.* Chicago, IL:

      University of Chicago Press.

Peek-Asa, C., Wallis, A., Harland, K., Beyer, K., Dickey, P., & Saftlas, A. (2011). Rural

      disparity in domestic violence prevalence and access to resources. *Journal of Women's*

      Health, 20(11), 304-318.

Pinchevsky, G. M., & Wright, E. M. (2012). The impact of neighborhoods on intimate partner

      violence and victimization. *Trauma, Violence, & Abuse, 13*(2), 112-132.

Pruitt, L. R. (2008). Place matters: Domestic violence and rural difference. *Wisconsin Journal of*

      Law, Gender, & Society, 23(2), 347-388.

Raphael, S., & Winter-Ember, R. (2001). Identifying the effect of unemployment on crime. *The*

      Journal of Law & Economics, 44(1), 259-283.

Reaves, B. A. (2017). Police response to domestic violence, 2006- 2015. *Bureau of Justice*

      Statistics. Retrieved from https://www.bjs.gov/content/pub/pdf/prdv0615.pdf

Salkind, N. J. (2010). *Encyclopedia of research design.* Thousand Oaks, CA: SAGE

      Publications, Inc.

Sampson, R. J., & Groves, W. B. (1989). Community structure and crime: Testing social

      disorganization theory. *American Journal of Sociology, 94*(4), 774-802.

Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A

      multilevel study of collective efficacy. *Science, 277*(5328), 918-924.

Shaw, C. R., & McKay, H. D. (1942). *Juvenile delinquency in urban areas: A study of delinquents in relation to differential characteristics of local communities in American cities*. Chicago, IL: University of Chicago Press.

Sherman, L. W., & Berk, R. A. (1984a). The Minneapolis domestic violence experiment. Retrieved from https://www.policefoundation.org/wp-content/uploads/2015/07/Sherman-et-al.-1984-The-Minneapolis-Domestic-Violence-Experiment.pdf

Sherman, L. W., & Berk, R. A. (1984b). The specific deterrent effects of arrest for domestic assault. *American Sociological Review, 49*(2), 261-272.

Siegel, R. B. (1996). "The rule of love": Wife beating as prerogative and privacy. *The Yale Law Journal, 105*(8), 2117-2207.

Slabbert, I. (2016). Domestic violence and poverty: Some women's experiences. *Research on Social Work Practices, 27*(2), 223-230.

Stein, M., & Kennedy, C. (2001). Major depressive and post-traumatic stress disorder comorbidity in female victims of intimate partner violence. *Journal of Effective Disorders, 66*(2), 133-138.

Strand, S. J. M., & Storey, J. E. (2018). Intimate partner violence in urban, rural, and remote areas: An investigation of offense severity and risk factors. *Violence Against Women,* 1-20. doi:10.1177/1077801218766611

U.S. Census Bureau. (2014). *Understanding geographical relationships: Counties, places, tracts, and more*. Retrieved from https://www.census.gov/newsroom/blogs/random-samplings/2014/07/understanding-geographic-relationships-counties-places-tracts-and-more.html

U.S. Census Bureau. (2018). *Urban and rural geography*. Retrieved from

https://www.census.gov/geo/reference/urban-rural.html

U.S. Department of Justice. (2017). *Domestic violence*. Retrieved from

https://www.justice.gov/ovw/domestic-violence

U.S. Department of Justice. (2018). *Uniform crime reporting program data: National Incident-Based Reporting System* (Icpsr37006-v1). Ann Arbor, MI: Inter-University Consortium for Political and Social Research [Distributor]. doi:10.3886/ICPSR37066.v1

Walton-Moss, B. J., Manganello, J., Frye, V., & Campbell, J. C. (2005). Risk factors for intimate partner violence and associated injury among urban women. *Journal of Community Health, 30*(5), 377-385.

Warner, B. D. (1999). Whither poverty? Social disorganization theory in an area of urban transformation. *Sociological Focus, 32*(1), 99-113.

Women's Shelters. (2018a). Kentucky's women's shelters. Retrieved from

https://www.womenshelters.org/sta/kentucky

Women's Shelters. (2018b). Tennessee's women's shelters. Retrieved from

https://www.womenshelters.org/sta/tennessee

Women's Shelters. (2018c). Virginia's women's shelters. Retrieved from

https://www.womenshelters.org/sta/virginia

Women's Shelters. (2018d). West Virginia's women's shelters. Retrieved from

https://www.womenshelters.org/sta/west_virginia

World Health Organization [WHO]. (2017). *Violence against women.* Retrieved from

http://www.who.int/news-room/fact-sheets/detail/violence-against-women

Wright, E. (2015). The relationship between social support and intimate partner violence in
neighborhood context. *Crime & Delinquency, 61*(10), 1333-1359.

Xie, M., Lauritsen, J. L., & Heimer, K. (2012). Intimate partner violence in U.S. metropolitan
areas: The contextual influences of police and social services. *Criminology, 50*(4), 961-
992.

APPENDIX A-LIST OF CITIES

Kentucky

Ashland	Eminence	Middlesborough	Williamstown
Bardstown	Flemingsburg	Monticello	
Benton	Glasgow	Morganfield	
Berea	Grayson	Mount Sterling	
Brandenburg	Greenville	Paducah	
Cadiz	Hazard	Pikeville	
Calvert City	Hodgenville	Prestonsburg	
Campbellsville	Hopkinsville	Princeton	
Carrollton	Indian Hills	Providence	
Central City	Lancaster	Russell	
Columbia	Lebanon	Russell Springs	
Corbin	Leitchfield	Russellville	
Cynthiana	London	Shelbyville	
Danville	Madisonville	Somerset	
Dawson Springs	Marion	Stanford	
Eddyville	Mayfield	Stanton	
Elizabethtown	Maysville	Vine Grove	

Tennessee

Algood	Fayetteville	McMinnville	Selmer
Athens	Gallatin	Medina	Smithville
Bean Station	Gatlinburg	Milan	Somerville
Brighton	Greeneville	Monterey	South Pittsburg
Brownsville	Harriman	Mount Pleasant	Sparta
Camden	Hohenwald	New Tazewell	Spring Hill
Centerville	Huntingdon	Newbern	Sweetwater
Clifton	La Follette	Newport	Trenton
Collierville	Lafayette	Oliver Springs	Tullahoma
Columbia	Lawrenceburg	Oneida	Union City
Crossville	Lebanon	Paris	Waverly
Dandridge	Lewisburg	Portland	White Bluff
Dayton	Livingston	Pulaski	Whiteville
Dickson	Loudon	Ripley	Winchester
Dresden	Madisonville	Rockwood	
Etowah	Manchester	Rogersville	
Fairview	McKenzie	Savannah	

Virginia

Abingdon	Galax	Tazewell
Berryville	Hillsville	Warrenton
Blackstone	Hopewell	Waynesboro
Bluefield	Lebanon	West Point
Bristol	Luray	Winchester
Buena Vista	Marion	Wise
Chincoteague	Martinsville	Woodstock
Christiansburg	Norton	Wytheville
Clifton Forge	Orange	
Colonial Beach	Pearisburg	
Covington	Pulaski	
Culpeper	Purcellville	
Danville	Richlands	
Elkton	Rocky Mount	
Emporia	South Boston	
Fredericksburg	South Hill	
Front Royal	Strasburg	

West Virginia

Barboursville	Phillippi
Beckley	Point Pleasant
Bluefield	Princeton
Bridgeport	Ravenswood
Buckhannon	Ripley
Charleston	St. Albans
Charles Town	Summersville
Dunbar	Vienna
Fayetteville	Weirton
Grafton	Wellsburg
Lewisburg	Weston
Martinsburg	Wheeling
Milton	Williamson
Moundsville	Williamstown
New Martinsville	
Nitro	
Oak Hill	

APPENDIX B-ALL CITIES
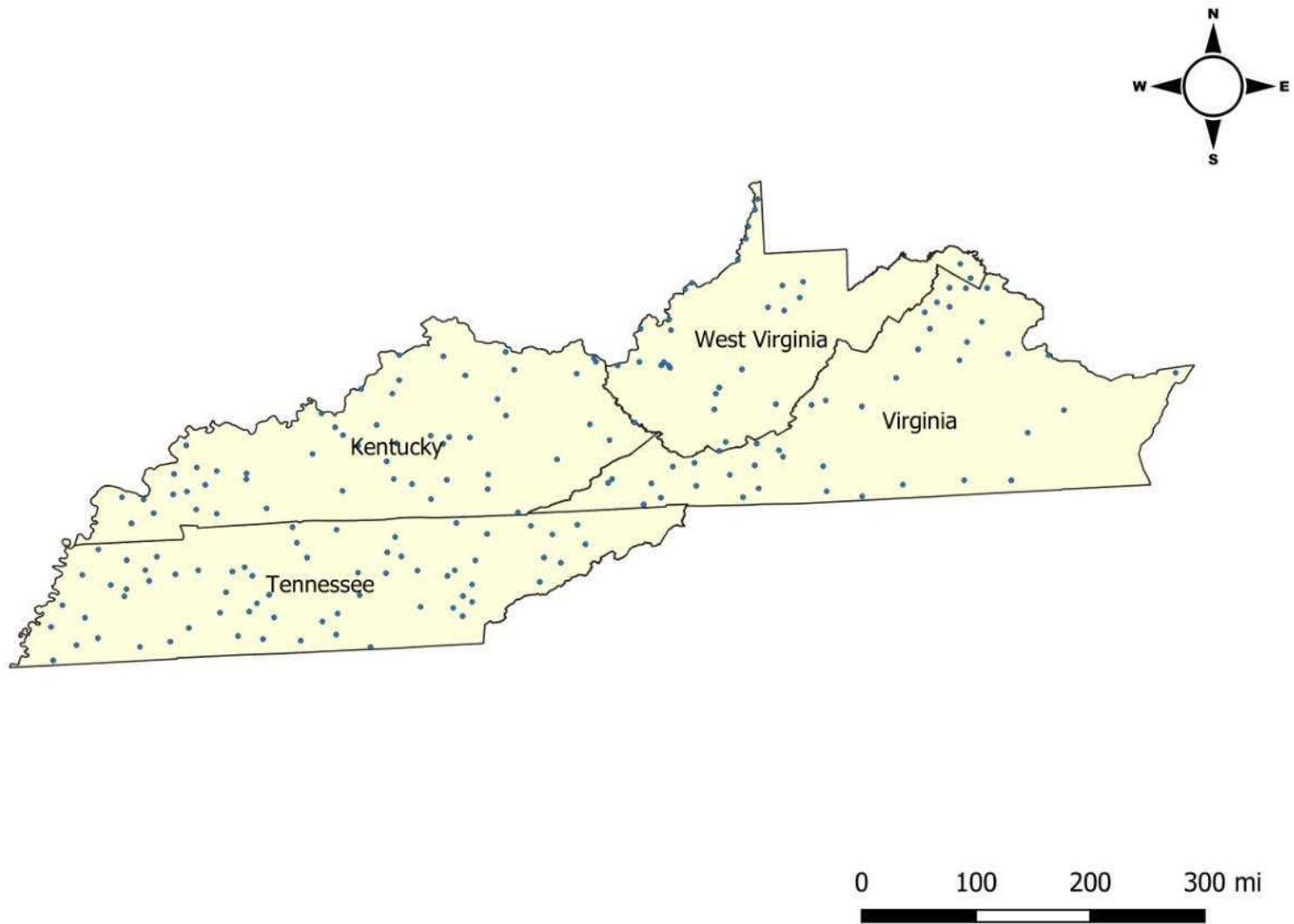
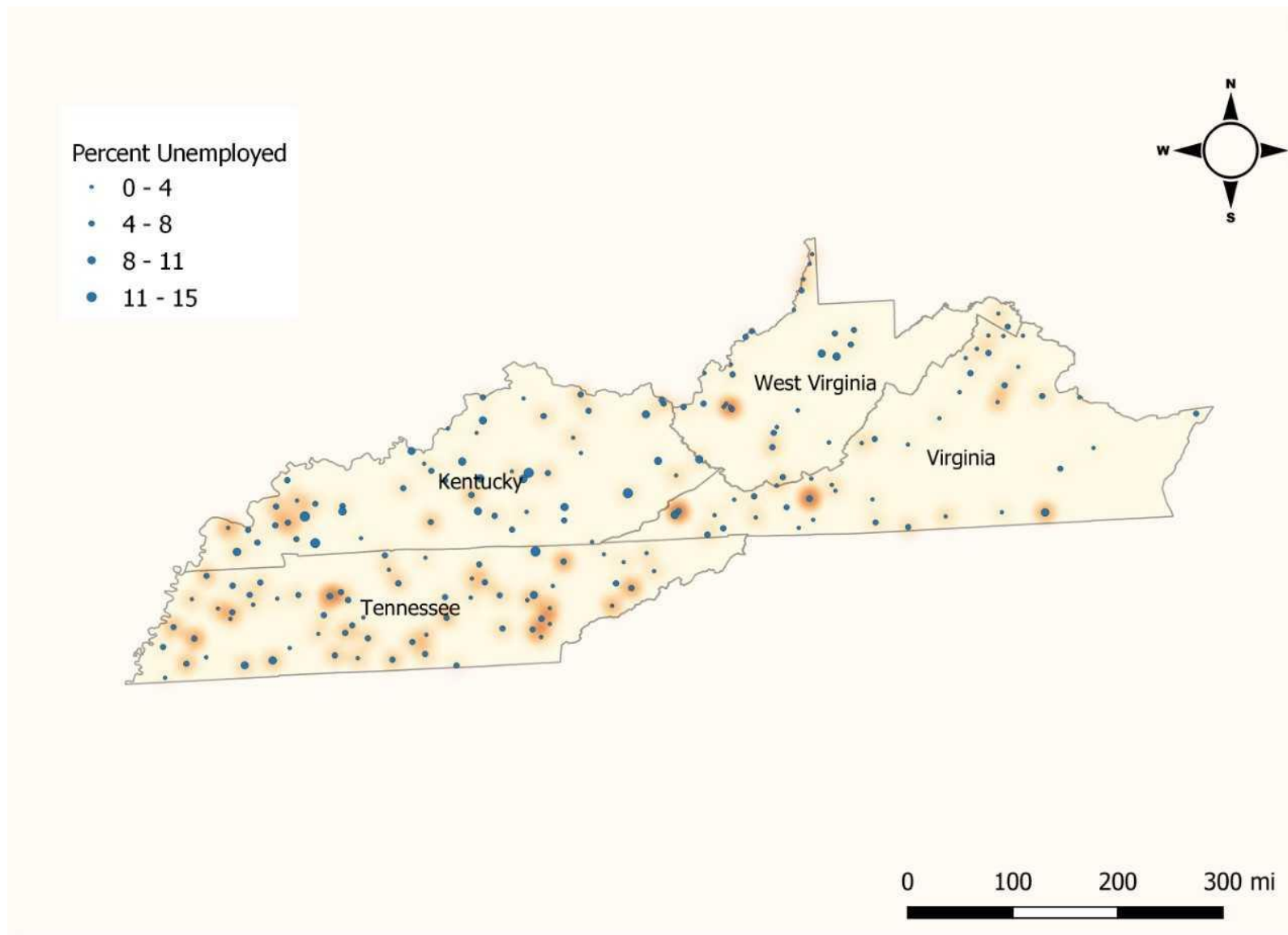**APPENDIX C-PERCENT LIVING IN SAME HOME AND TOTAL IPV HEAT MAP**
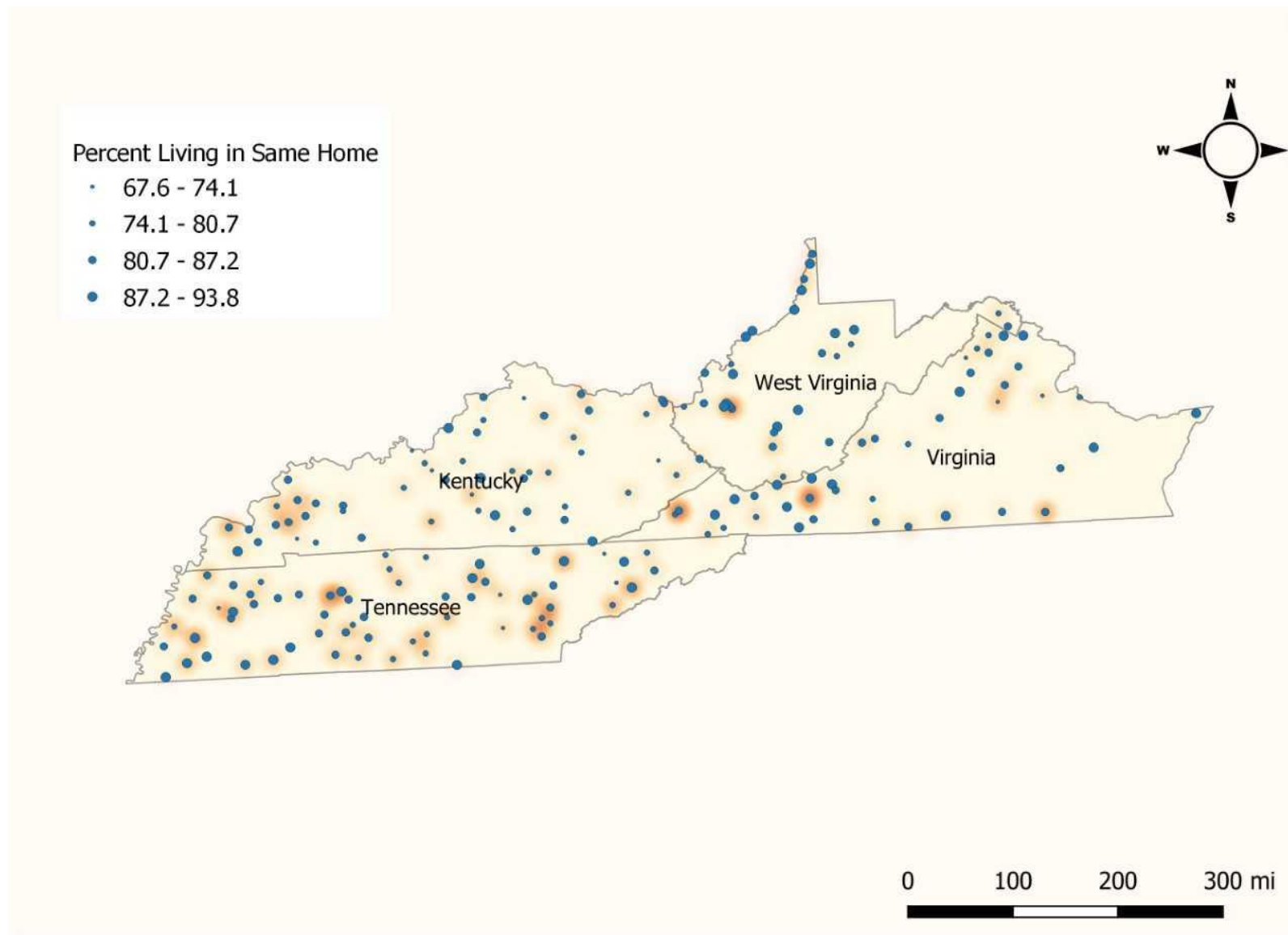
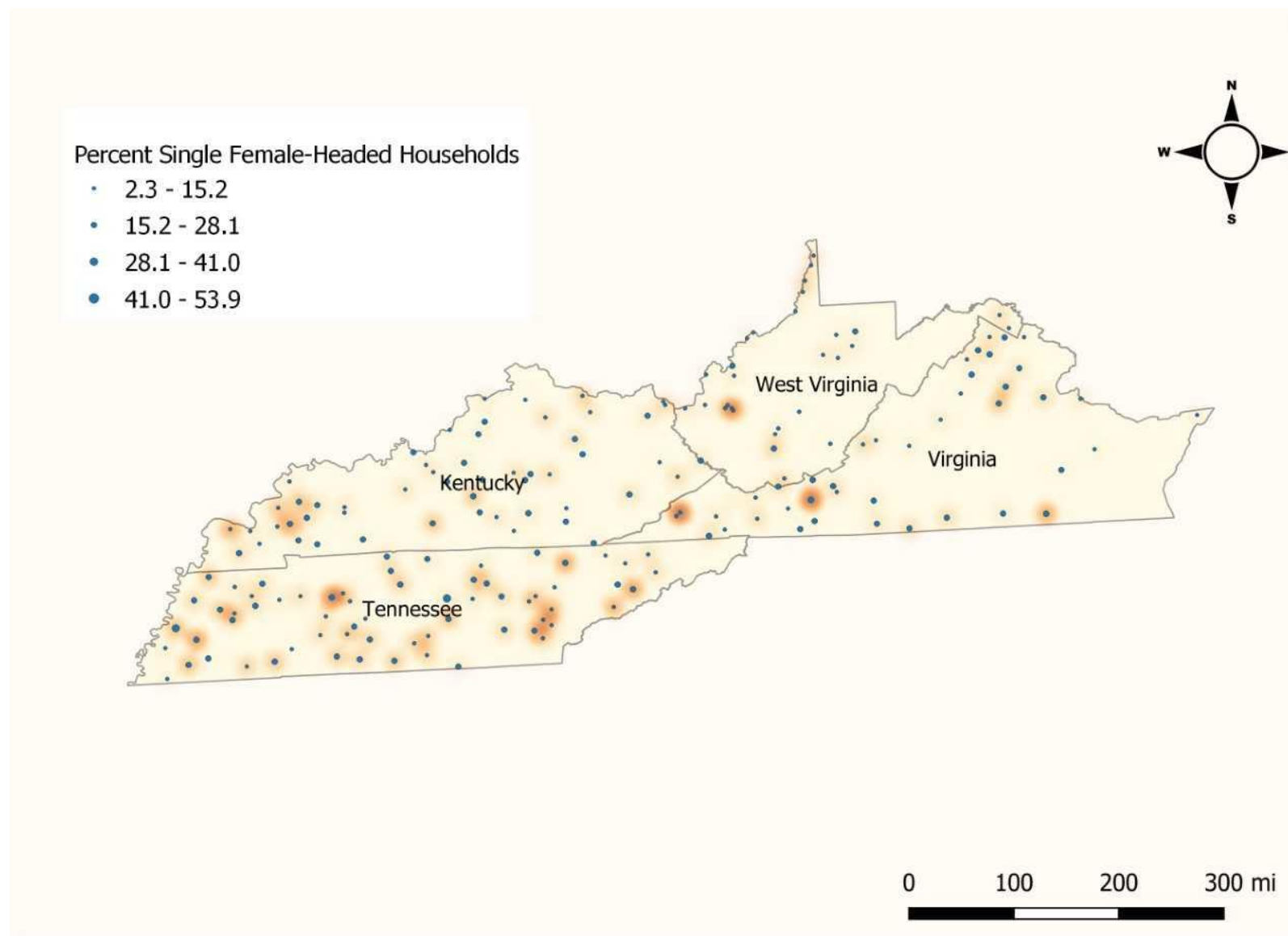**APPENDIX D-PERCENT NON-WHITE AND TOTAL IPV HEAT MAP**
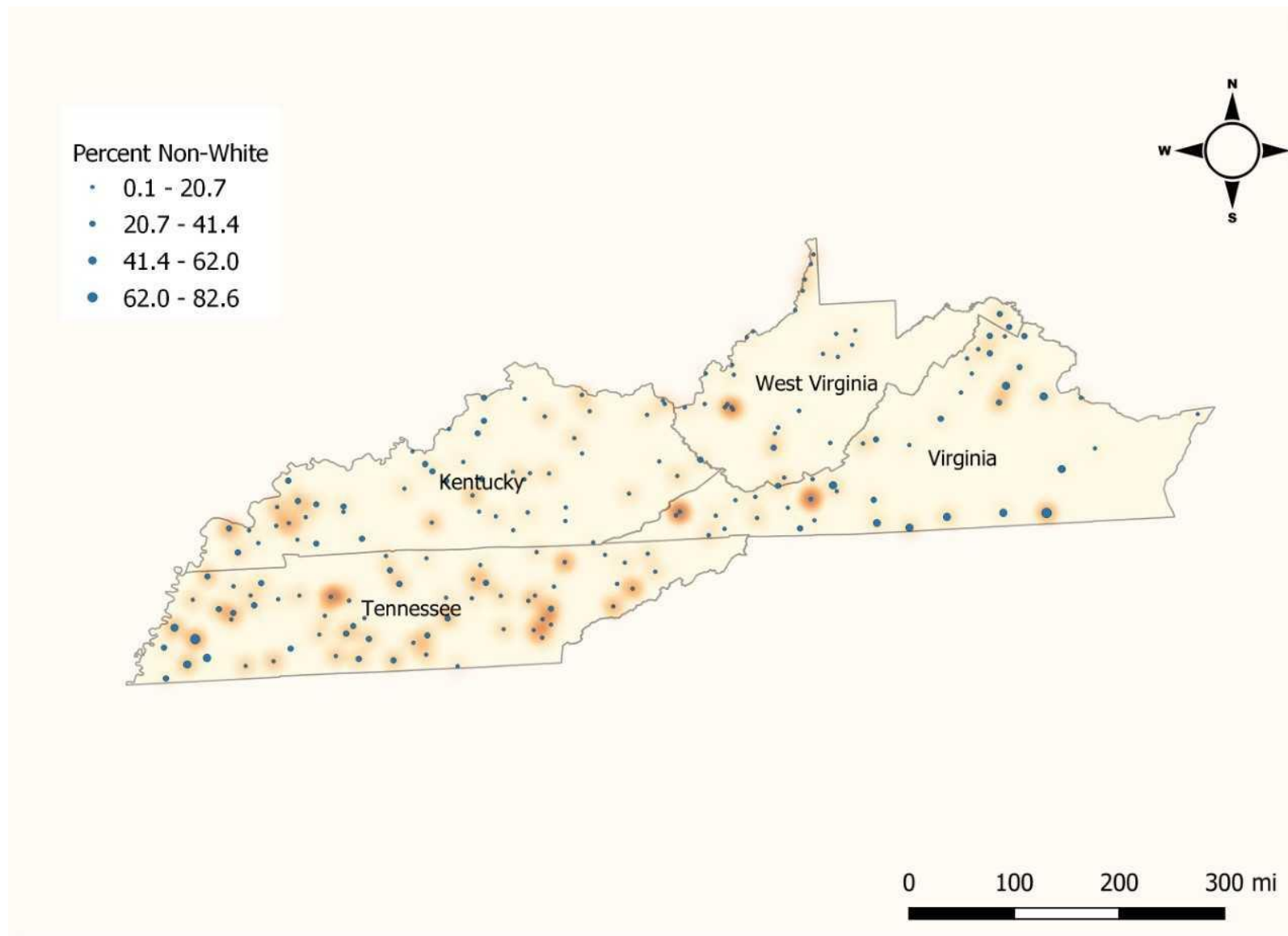
APPENDIX E-PERCENT LIVING IN POVERTY AND TOAL IPV HEAT MAP
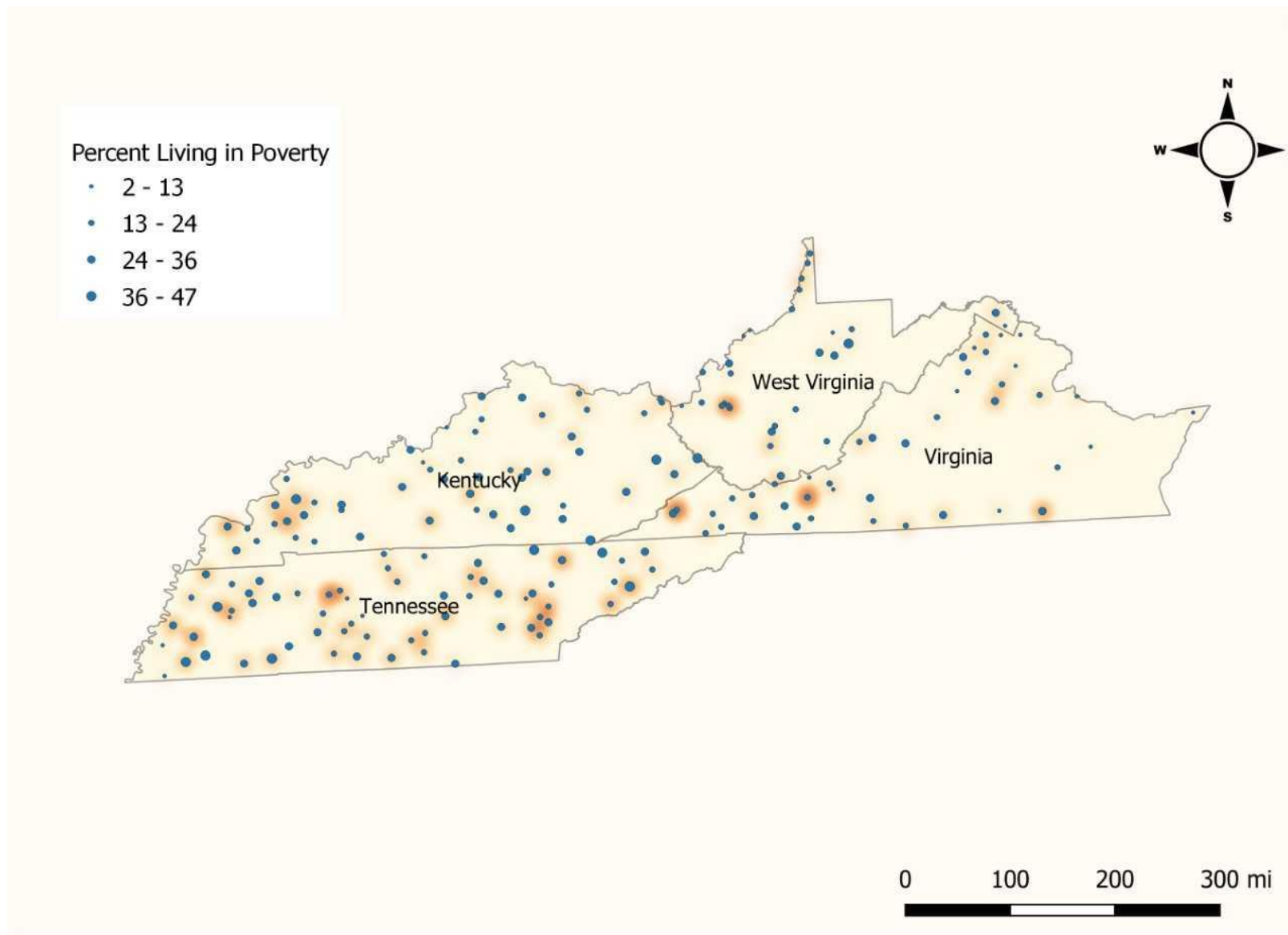
APPENDIX F-PERCENT UNEMPLOYED AND TOTAL IPV HEAT MAP

APPENDIX G-PERCENT SINGLE FEMALE HEADED-HOUSEHOLDS AND TOTAL IPV HEAT MAP

APPENDIX H-MEDIAN HOUSEHOLD INCOME AND TOTAL IPV HEAT MAP