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AMERICAN INDIAN HOMICIDE: A COUNTY-LEVEL ANALYSIS UTILIZING SOCIAL
DISORGANIZATION THEORY REVISTED

by

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A thesis submitted in partial fulfillment of the requirements
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ABSTRACT

Lanier and Huff-Corzine's (2006) article "American Indian Homicide: A County-Level Analysis Utilizing Social Disorganization Theory" has been referred to as a highly influential piece of literature on American Indian homicide. The study looked at American Indian homicide victimization incidents by county between 1986 and 1992 in the continental United States using the framework of social disorganization theory. Despite the violent crime drop in the 1990s, little research exists that examines current dynamics of American Indian homicide. This study provides an updated replication of Lanier and Huff-Corzine (2006) by examining the impact of social disorganization on American Indian homicide victimization between 2006 and 2012. Results differ from Lanier and Huff-Corzine (2006). Reasons for the different outcomes are explored and implications for future research are discussed.

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CHAPTER ONE: INTRODUCTION

Early reports show the rate of violence experienced by American Indians being twice that of the nation with one in ten American Indians over the age of twelve experiencing violent crime (Perry, 2004). These early reports also show Homicide victimization rates, in particular, amongst American Indians being twice that of the United States rates (U.S. Department of Health and Human Services, 1996). Despite these findings, the majority of homicide research focuses on white or black offenders, most likely due to the high prevalence of these incidents. American Indians, if they are even included in the study, are typically lumped into an “other” category.

American Indians are one of the smallest minority populations, and they are relatively secluded from the general population so they are often overlooked. In 2010, the American Indian population was 2.9 million people or about 1% of the total United State population (U.S. Bureau of the Census, 2010). Conversely, those who identified solely as white comprised 72.4% of the population, or 223.5 million, and those who solely identified as black comprised 12.6% of the population, or 38.9 million (U.S. Bureau of the Census, 2010). However, as previously stated, American Indian homicides exceed the national average, and little literature exists on the subject, which leads to an interest in further researching this population’s homicide offenses.

Lanier and Huff-Corzine’s (2006) article, “American Indian Homicide: A County-Level Analysis Utilizing Social Disorganization Theory,” has been referred to as a highly influential piece of literature on American Indian homicides. The study looked at American Indian homicide incidents by county between 1986 and 1992 in the continental United States using the framework of social disorganization theory. The researchers found that American Indian

homicide victimization could be explained through social disorganization theory. Lanier and Huff-Corzine (2006) will be further detailed in the review of the literature. The objective of the current study is to provide an update of Lanier and Huff-Corzine's study to see if the findings still hold true in more recent years.

CHAPTER TWO: LITERATURE REVIEW

An Overview of Homicide Trends

Research has shown that American Indian homicide victimization rates are 0.7% of all homicide victims nationally, which is significant due to the population equating to only 1% of the total United States population (Perry, 2004). However, this research examines data that is over twenty years old and recent research is limited. Early reports show that homicide victimization rates were highest for black males, followed by American Indian males and black females. Homicide rates for white males were comparable to those of American Indian females and were higher than the homicide rates of white women (U.S. Department of Health and Human Services, 1996). At the beginning of the study, the rate of homicide for American Indians and blacks was 23.7 per 100,000 and 47.7 per 100,000 respectively (Fox & Zawitz, 1999). During this time, for American Indians, homicide was most common among young adults. The average age of American Indian homicide victims was 28 years old (U.S. Department of Health and Human Services, 1996). The average age of homicide victims nationally was older with the average age being 35.2 years old in 1976 and 31.3 years old in 1994 (Fox & Zawitz, 1999). Males between the ages of 15 and 44 comprised the majority of all American Indian homicide victims at 60% at this time. Males aged 25-34 were the most at risk group for American Indians with homicide rates of 47 per 100,000 (U.S. Department of Health and Human Services, 1996). Homicide ranked as the ninth overall leading cause of death for American Indian males in the United States; however, it ranked as the second leading cause of death for American Indian males between 25 and 34 and the third leading cause of death for American Indian males between 1 and 4 and between 10 and 24 (U.S. Department of Health and Human Services, 1996). For American Indian females, those between 25 and 34 were the most at risk with rates of 13.8

per 100,000. While homicide was not in the overall top ten causes of death for American Indian females, it was the second and third leading cause of death for American Indian females between the ages of 1 and 4 and between the ages of 15 and 34, respectively (U.S. Department of Health and Human Services, 1996).

The Center for Disease Control reports that 44% of American Indian homicides involved a firearm, 64% of which involved a handgun (U.S. Department of Health and Human Services, 1996). Male victims were most likely to be killed by a firearm, with 48% of American Indian males being killed by a firearm. Female victims were more likely to be killed by another method, such as blunt objects, strangulation, or by bodily force. Cutting or stabbing was the cause of death for 29% of males and 23% of females. Between 1979 and 1992, firearms comprised the majority for weapon choice overall in the United States at 63%; conversely, it was only the weapon of choice in 38% of homicides for American Indians. So, although firearms are the predominant weapons of choice in American Indian homicides, they are much less likely to be used in American Indian homicides than the overall United States homicides (U.S. Department of Health and Human Services, 1996).

Further, 2 in 3 of all American Indian homicide victims were killed by someone they knew. A family member killed 19% of these victims while 47% were killed by acquaintances. This proportion was higher than that of the national average. Overall, most American Indians were killed by either an American Indian offender (51%) or by a white offender (39%). The majority of American Indian females (59%), were killed by an American Indian. The Center for Disease Control proposes that the high incidences of homicides offenders knowing their victim and the large proportion of American Indian homicides not involving firearms could indicate

high rates of alcohol induced violence among American Indians (U.S. Department of Health and Human Services, 1996).

A more recent report conducted by the Bureau of Justice Statistics provides some updated insights into American Indian homicide offenses (Perry, 2004). Between the years 1976 and 2001, approximately 3,738 American Indians were murder victims. This averages out to about 144 per year. Between 1995 and 2001, the murder rate for American Indians dropped forty-five percent from 6.6 to 3.6 per 100,000 residents. Between 1976 and 1999, seven in ten juvenile American Indian victims are the result of intraracial offenses. Between 1976 and 1999, about seventy-three percent of all American Indian victims were male (Perry, 2004).

In terms of geography, American Indian murders seem to be concentrated in certain states. Between the years 1976 and 1999, roughly seventy-five percent of all American Indian murders occurred in ten states (Perry, 2004). Those ten states contain 61 percent of the American Indian population as of 2000. Twenty-five percent of all American Indian homicides during this time period occurred in California and Oklahoma. In California, 13 percent of the murders occurred, and the state had an American Indian population of twelve percent. Similarly, Oklahoma was the home of 12 percent of the murders and 11 percent of the American Indian population. In five states, the percent of homicides exceeded the percent of the American Indian state population. In Alaska, 28 percent of all murders had an American Indian victim. The American Indian population of Alaska was 16 percent of the state's population. Furthermore, they made up ten percent of all American Indian homicides nationally and only housed four percent of the nation's American Indian population. The other four states with homicides exceeding the American Indian state population were North Carolina (2%), Washington (4%),

Minnesota (7%), and Oregon (3%). American Indian populations in those states, however, were not provided (Perry, 2004).

Though research indicates that most murder cases for blacks and whites are intraracial (94% and 86%, respectively, between 1976 and 1999) (Perry, 2004), considerably fewer American Indian homicides are intraracial (58%). In terms of interracial murder cases, American Indians were killed predominantly by whites (32%), then blacks (10%), and then Asians (1%). Seventeen percent of all American Indian homicide victims are killed by a stranger. In accordance with the homicides of other racial groups, the homicide is more likely to be intraracial if the victim and offender know one another. A third of American Indians that were killed by someone they knew were interracial homicides. Roughly half of the American Indian victims that were killed by a stranger had a white offender and about a fourth had a black offender (Perry, 2004). Humphrey (1982) also notes that homicide rates can differ based on tribal affiliation in his study of Cherokee and Lumbee Indians in North Carolina.

Social Disorganization and Economic Deprivation

Social disorganization theory dates back to Shaw and McKays (1942) who looked at how ecology influenced juvenile delinquency. It is also advanced in Shaw and McKay's (1969) applied work in Chicago. The theory analyzes the relationship between increased levels of disorganization and increased levels of criminality in socially disorganized areas. The premise is that as a community becomes more disorganized, boundaries and standards of behavior begin to dissolve and because of this breakdown of norms, crime increases (Sampson & Groves, 1989). This theory takes the blame off of the individual for delinquency and looks instead at how in these environments it is the normal response to abnormal conditions. When the area lacks a sense of community, individuals are more likely to be uninhibited, and this can result in delinquent

behaviors (Short, 1972). Contributing factors to social disorganization that are typically analyzed are economic deprivation, population mobility, and ethnic heterogeneity (Sampson & Groves, 1989). Skogan (1989) notes that places that retain traditional agents of social control, such as strong institutions and traditional values, tend to have lower crime rates than places riddled with low wages, low education levels, and unemployment. Economic deprivation looks at factors such as poverty levels, unemployment rates, and high school drop out rates (Bachman, 1992).

Four basic assumptions of social disorganization exist in order to explain delinquency. The first is that a breakdown and collapse of institutional, community-based controls are what leads to delinquency. The people in these environments are reacting naturally to their disorganized environment. Secondly, this disorganization is often times caused by rapid industrialization, immigration, and urbanization. The third assumption is that the effectiveness of social institutions and the desirability of residential and business locations correspond closely to natural, ecological principles that are influenced by the concepts of competition and dominance. (Shoemaker, 1996). The fourth assumption is that the disorganization leads to the development of criminal values, which replace the traditional values and are perpetuated by the disorganized environment (Shoemaker, 1996).

As previously noted, the main sources of social disorganization are thought to be related to socioeconomic status, residential mobility, and heterogeneity, and these three sources serve as the basis for Shaw and McKay's model. The first source we will look at is socioeconomic status. Shaw and McKay thought that socioeconomic status was a major contributing factor for the affects of disorganization on delinquency. They posited that communities with low socioeconomic status lacked adequate resources and because of this they will suffer from weaker organizational bases than communities with a higher socioeconomic status (Kornhauser 1978;

Byrne and Sampson 1986). The next source in the model is residential mobility. Residential mobility is thought to disrupt the community's system of relationships (Kornhauser, 1978). Assimilation of newcomers is quintessential to creating a network and relationships within the community. Residential mobility impedes this process, preventing individuals from creating these bonds and networks, thus creating social disorganization (Kasarda and Janowitz, 1974, p. 330). Lastly, the third source in the model was racial and ethnic heterogeneity. Suttle (1968) explains that heterogeneity is accompanied by fear and mistrust. This fear and mistrust causes residents to form associations based on personalistic criteria, such as age and sex. These associations cause the social order to become fragmented so that even if the groups share conventional values, heterogeneity impedes communication and interaction between the groups.

Another source of social disorganization outside of Shaw and McKay's original model that is also important to consider is family disruption. Sampson (1987) theorized that marital and family disruption decrease informal social controls within the community. Having a traditional two parent household allowed for greater parental supervision for not only the household (Cohen and Felson, 1979), but also for the activities within the community. Sampson (1987) showed that macro-level family disruption strongly correlated with juvenile crime rates for black and white individuals.

Some studies of American Indian homicide are more qualitative and focus on specific groups (Humphrey and Kupferer, 1982). Most research, however, focuses on the potential causes for the high rates of homicide amongst American Indians. The current research focuses specifically on social disorganization theory (Bachman 1991; Bachman 1992; Lanier & Huff-Corzine 2006; Lester 1995) and economic deprivation (Bachman 1991; Bachman 1992; Lanier 2010; Painter-Davis 2012).

Bachman (1992) measured social disorganization theory by analyzing two main factors: residential mobility, or how often a family has moved over a 5 year time span, and the percentage of the population that was within a single parent, female-headed household. Bachman (1992) looked at economic deprivation in conjunction with social disorganization, measuring economic deprivation for American Indians by the percent of the population in poverty, the unemployment rate, and the high school dropout rates (Bachman, 1992). For this study, she examined data from the 1980 U.S. Census for the county-level independent variables, in addition to using county-level American Indian homicide rates from the U.S. Department of Health and Human Services: Indian Health Services for the years 1980 through 1987. Bachman reports high levels of unemployment, high rates of poverty, and high dropout rates for American Indians. Based on these measures, she concluded that both economic deprivation theory and social disorganization theory could be used to explain the high rates of homicide amongst American Indians.

Lanier and Huff-Corzine (2006) found similar findings in regards to social disorganization theory, measuring it by single parent, female-headed households and family disruption; however, they found that poverty was not a significant predictor of homicide for American Indians. They proposed that this might be because low socioeconomic status is common amongst all American Indians, so there is little variation in economic statuses. American Indians are collectively amongst the lowest socioeconomic groups in the United States, making poverty more of the norm than the exception for this population (Lanier & Huff-Corzine, 2006). Lanier (2010) focused more on poverty as a cause for American Indian homicide by analyzing mortality data for American Indians. This data was gathered from the Indian Health Service, Vital Statistics, National Center for Health Statistics, 1994-1998. She reported that

American Indian poverty and unemployment rates were double those of the national average. She reports that the percentage of single parent, female-headed households was 14.08% and the percentage of divorced American Indians is 13.82% (Lanier 2010).

Bachman (1991) studied thirty homicide offenders in order to determine potential causes of American Indian homicide between July 1988 and January 1989. In depth interviews were conducted with the offenders for the study. The trends amongst these offenders were that most were born into poverty, most used drugs and alcohol to cope with their poverty, and most also used aggressive behavior in response to their poverty out of frustration. She concluded that social disorganization, economic deprivation, subculture of violence, culture conflict, perceived powerlessness, and drug and alcohol use contributed to the high rates of homicides for American Indians (Bachman, 1991).

Lanier and Huff-Corzine (2006) Study: An Overview

One of the most significant studies on American Indian homicide victimization was Lanier and Huff-Corzine's (2006) study, which was a county-level investigation using social disorganization theory between the years 1986 and 1992. The dependent variable, homicide counts, was gathered from the Supplementary Homicide Reports from the Federal Bureau of Investigation, and the independent variables were gathered from the Microcase Data Archive of States, Cities, & Counties, which includes county-level data for the years 1980 and 1990 for a range of measures on age, race, crime, and housing (Lanier & Huff-Corzine, 2006).

Results suggested that economic deprivation, based on percent of American Indians living below poverty, was much higher than the percent living below poverty nationally (median of 32% and 16%, respectively). Additionally, female-headed households comprised 17% of the population and only 6% nationally. In support of social disorganization theory, the percentage of

female-headed households, which was an indicator of family disruption, proved to have a significant, positive effect on American Indian homicide victimization. Specifically, more American Indian female-headed households in the county was associated with more American Indian homicides in the county. Additionally, ethnic heterogeneity also had a positive, significant effect on American Indian homicide victimization. When a county is more ethnically heterogeneous, it had more American Indian homicide victimizations. However, economic deprivation and residential mobility did not prove to have a significant effect on American Indian homicide victimizations in this study. The researchers felt that economic deprivation was not significant because poverty was the norm for American Indians so it did not make a difference. If there was more variation within socioeconomic status among American Indians, it may have had an impact on the homicides (Lanier & Huff-Corzine, 2006).

Current Study

Much of the literature that exists on American Indian homicide looks at data that is over twenty years old and does not look at the trends in more recent years. Even the literature that has been published within the last ten years looks at much older data. Data on American Indian homicides after the nineties has not been analyzed, as can be seen in the above literature review. All but two of the studies, which used data from 1998 and up to 2001, used data from 1992 and earlier. It has been said by criminologists that crime rates overall have been lower in the last 20 years or so. With this change in overall crime rates, it is important to see if trends have changed or if they still are representative of American Indian homicide in more recent years.

The aim of this study is to follow the model of the Lanier & Huff-Corzine (2006) study using more recent data. This is in an effort to present more recent findings to supplement the older existing literature. As in the Lanier & Huff-Corzine study, the current research will assess

the ability of social disorganization theory to explain American Indian homicide victimization between 2006 and 2012. It is hypothesized that, based on the changes in crime rates overall, the rates of homicides for American Indians will be lower. It is also hypothesized that social disorganization theory will still be a significant factor in explaining American Indian homicide victimization.

CHAPTER THREE: METHODOLOGY

The current study examines American Indian homicide victimizations between 2006 and 2012. The unit of analysis is counties with at least a 1% American Indian population between 2006 and 2010 (based on 5 year average from American Community Survey). This criterion is being used, as it is reflective of the national average. The dependent variable, homicide victimization counts, are based on reports from the Supplementary Homicide Files from the Federal Bureau of Investigation for the years 2006-2012. Due to the rare nature of homicide, counts will be pooled over multiple years, allowing for more stable rates for analysis purposes. The American Community Survey (2006-2010), which includes county-level data for a range of measures on age, race, and housing characteristics, provides the data for the independent variables.

Dependent Variable

The dependent variable in this analysis will be the number of American Indian homicide victimizations in all U.S. counties with an American Indian population of at least 1% as reported by the U.S. Census Bureau. Consistent with Lanier and Huff-Corzine (2006), the number of homicides will be used rather than the rate to prevent counties with smaller American Indian populations as well as zero counts of homicides from affecting the analyses. Additionally, to control for fluctuations in reporting and the relatively low frequency of homicide, homicide counts will be summed over 7 years (2006-2012).

Independent Variables

To assess the ability of social disorganization theory in explaining American Indian homicide victimization, five measures are included in the analyses. The measures are: poverty,

population mobility, ethnic heterogeneity, rural county, and family disruption. Parker et al. (1999) explains, “Social and economic changes in a community tend to lead to the deterioration of group solidarity and to a breakdown in social control mechanisms, producing conflict and increasing the potential for crime” (p. 108).

Poverty – Poverty has been used in many studies as an indicator of social disorganization, however previous research has reported inconsistent findings on the relationship between poverty and homicide (Bachman, 1991; Huff Corzine & Lanier, 2006). Poverty was measured as the percentage of American Indians within each county that live below the poverty line.

Residential Mobility – Residential mobility has also been shown to be a key explanatory variable used in social disorganization theory research (Bachman, 1991; Bursik, 1988; Sampson, 1987). Bachman (1991) shows that the American Indian homicide victimizations were positively related to the percentage of American Indians who had moved away from the reservation and then returned. In this analysis, residential mobility was measured by the percentage of those over the age of five that have lived in the same state but a different county the previous year.

Ethnic Heterogeneity – Previous research has shown that increased ethnic heterogeneity leads to higher rates of homicide (Bursik, 1988; Lanier & Huff-Corzine, 2006; Sampson & Grove, 1989). Bursik (1988) argues that, “heterogeneity impedes communication and thus obstructs the quest to solve common problems and reach common goals” (p. 521). For this study, the ethnic heterogeneity variable was measured using the Simpson Diversity Index. With this index, 1 represents infinite diversity and 0, no diversity. As such, higher values represent greater racial diversity within the county.

$$1 - \left[\frac{(\text{BlackPop} / (\text{BlackPop} - 1)) + (\text{WhitePop} / (\text{WhitePop} - 1)) + (\text{AmericanIndianPop} / (\text{AmericanIndianPop} - 1))}{(\text{TotalPop} / (\text{TotalPop} - 1))} \right]$$

Family Disruption – Previous research shows that the disruption caused by divorce, and single parent and female-headed households has had a significant, positive impact on homicide rates (Bachman, 1992; Sampson, 1987). Following the method of measurement used in Bachman (1991) and Lanier and Huff-Corzine (2006), family disruption was measured in this study by the percentage of American Indian households with a single parent female-headed household where children under the age of eighteen are present.

County Rurality –A variable measuring whether the county was considered rural was also introduced in this study. It has been argued that homicide victimization can be higher in rural counties due to a number of factors: higher levels of poverty, lower education, higher unemployment, and less access to hospitals (Gallup-Black, 2005). Information for this variable was obtained from the National Center for Health Statistics (2006). For the purposes of this study, this variable was coded as a dichotomous variable, with zero signifying a non-rural county and one signifying a rural county. The NCHS urban-rural classification scheme for counties was used to code this variable. This classification scheme is broken into six levels. For purposes of this study, four levels that represented metropolitan counties were considered non-rural and two levels that represented nonmetropolitan counties were considered rural.

Control Variables

Consistent with Lanier and Huff-Corzine (2006), the size of the county population and the population between the ages of 15 and 29 years old were included in the model. It is

generally hypothesized that with larger populations, homicide rates will also increase.

Furthermore, research also shows that younger populations have higher homicide rates than older people (Bachman, 1991).

Hypotheses

Six hypotheses were tested in this analysis. Though inconsistent with Lanier & Huff-Corzine's findings, based on arguments of social disorganization, it is hypothesized that poverty will have a significant impact on American Indian homicide victimization. It is also hypothesized, based on previous research on social disorganization theory, that increased levels of residential mobility, higher levels of ethnic heterogeneity, increased numbers of female-headed households, and more rural counties each reflect an increase in homicide victimization for American Indians. Lastly, it is hypothesized that American Indian homicide victimization will have decreased as compared to Lanier and Huff-Corzine (2006).

Procedure

Since the dependent variable is based on discrete counts of rare events and has a skewed distribution, a standard ordinary least squares (OLS) regression model is inappropriate to use in the analysis (Osgood, 2000). Normally Poisson regression models would be appropriate to use; however, there is evidence of overdispersion of the count data (i.e., the variance exceeds the mean) as well as excessive zero counts, suggesting that the zero-inflated negative binomial regression model may be the most appropriate. The vuong test confirms that this model is the most appropriate. This model allows for the inclusion of a parameter for the residual variance of the dependent variable (Osgood, 2000). This model also accommodates the dependent variable being a count variable rather than a rate, which is the most common way homicide data is expressed. This is done by including the natural logarithm of the American Indian population as

an offset variable in the model and setting the coefficient of this variable to 1, which allows the count variable to be interpreted as a rate (Lee & Ousey, 2001). By doing this, the results can be interpreted in a similar fashion to those of linear regressions so that the coefficients can be used to predict the effects of the independent variable on the dependent variable (Lanier & Huff-Corzine, 2006).

CHAPTER FOUR: RESULTS

Univariate Analysis

Frequencies were run for the independent and dependent variables to obtain an overview of the variables and their distribution. The frequencies for homicides per county are presented in table 1. As table 1 shows, the majority of the counties, 74.7%, had zero homicides. Only 25.3% of the 261 counties had at least one homicide between 2006 and 2012. The means and standard deviations for each variable can be seen in table 2. The mean for American Indian homicide victimization was only 0.61 with a standard deviation of 2.44, showing that there was some variation within the counties in terms of the number of homicides. The majority of the counties in the analysis were rural counties with 69% of the counties being rural. During this time approximately 29% of American Indians lived in poverty and roughly 21% of American Indian households were single parent, female-headed households. Ethnic heterogeneity was about 0.34%, which shows there was not much diversity in ethnicity within the counties. Only about 5% of people moved between counties in the same state during this time, suggesting relatively low levels of residential mobility during this time. Only about 20% of the population within the counties was aged 15-29. The average county population size was 96,532 with a standard deviation of 241,684, which shows that there was a lot of variation in the county populations.

(Table 1 and Table 2 about here)

Variance inflation factors (VIFs) were examined to check for multicollinearity among the independent variables in the model. It is generally accepted that VIFs greater than 4 indicate issues with multicollinearity (Fisher & Mason, 1981); however, all the VIFs for the variables were below the value of 4, suggesting that multicollinearity is not a problem in the model.

Multivariate Analysis

A zero-inflated negative binomial regression was conducted to estimate the influence of social disorganization on American Indian homicide victimization counts. Results are reported at the $p \leq .05$ level. The results of this analysis can be seen in table 3. Standardized coefficients and standard errors were reported for each variable in model. The only significant variable was population aged 15-29, although rural county approached significance with a p-value of 0.052.

The population aged 15-29 is significantly but negatively related to American Indian homicide victimization in counties. The higher the percent of the population aged 15-29 in counties, the lower the counts of American Indian homicide victimization. Specifically, a one standard deviation increase in population aged 15-29 results in a 50% decrease in American Indian homicide victimization $\{\exp(-0.17 \times 4.05) = 0.502\}$. This finding is consistent with Lanier and Huff-Corzine (2006).

CHAPTER FIVE: DISCUSSION AND CONCLUSION

Discussion

In the discussion of the results, it is important to compare these findings with those of Lanier and Huff-Corzine (2006). The current study's results did differ from Lanier and Huff-Corzine's results. The measure for family disruption, the percent of female-headed households, was found significant in Lanier and Huff-Corzine (2006); however, it was not found to be significant in this analysis. In Lanier and Huff-Corzine (2006), increased number of female-headed households resulted in higher American Indian homicide victimization. Furthermore, this analysis did not find poverty or mobility to be significant variables, which is consistent with Lanier and Huff-Corzine (2006). Ethnic heterogeneity was not found to have a significant effect in this analysis while it did in Lanier and Huff-Corzine (2006). Increased ethnic heterogeneity resulted in increased American Indian homicide victimization in Lanier and Huff-Corzine (2006). Lastly, population aged 15-29 was significantly but negatively related to American Indian homicide victimization in both studies.

To better understand the variation in the findings, we will first look at the descriptive statistics. Lanier and Huff-Corzine's (2006) analysis yielded a higher number of homicides per county than this analysis with an average of 1.52 homicides in comparison to only .61 homicides found in this study. This is likely a result of the decrease in violent crime that has occurred since the late 80's and early 90's. Also, the number of female-headed households (20.6% and 16.6%, respectively) and ethnic heterogeneity (0.34% and 0.013%, respectively) were higher in this analysis than in the aforementioned analysis; however, poverty (33.32% and 28.54%, respectively) and mobility (12.03% and 5.29%, respectively) are lower in this analysis than in Lanier and Huff-Corzine (2006). These decreases in poverty and mobility may partially have

influenced why these variables did not have an influence on American Indian homicide victimization. It also suggests that conditions may have improved for American Indians since 1992. Lastly, the population aged 15-29 was similar in this research and in Lanier and Huff Corzine (2006).

Next, it is important to note that an additional independent variable was added to the current study. Whether the county is rural or not was included in this study, but was not used in the previous analysis. Social disorganization theory was originally derived from research in urban environments. However, rural counties still possess many of same attributes that these socially disorganized urban counties possess, such as high levels of poverty and unemployment. Previous research has shown that rural counties have high numbers of homicides because of higher poverty, less access to hospitals, lower educational obtainment, and higher unemployment (Gallup-Black, 2005).

Lastly, in regards to the comparison to Lanier and Huff-Corzine (2006), there were two more important variations. The most notable is the unavailability of the Microcase data, which had to be replaced by the American Community Survey. With not using the exact same data series, the data reporting methods are bound to differ as well as some of the variable operationalizations. The most obvious variable difference was the mobility variable. In the Microcase data, mobility was measured by whether a move occurred over a five-year time span. In the American Community Survey, the move had to have occurred over one year. Next, possibly due to the American Community Survey's reporting methods, fewer counties were available for analysis in this study. Lanier and Huff-Corzine (2006) had 404 counties in their analysis while this study only had 261 counties.

A new variable that was introduced in this analysis was whether the county is rural or not. It was not found to significantly increase American Indian homicide victimizations, however this was the only social disorganization variable to approach significance with a p-value of 0.052. This finding is most likely due to the higher frequency of rural counties in the analysis and the prevalence of American Indians in more rural counties. This does not support hypothesis 5 that more rural counties would have higher rates of American Indian homicide victimization.

The final hypothesis was that homicide would have decreased since Lanier and Huff-Corzine (2006) and this was found to be true. There were about half as many homicides in this analysis as there were in the previous analysis with an average of 0.61 and 1.52 homicides respectively.

Limitations

There are several limitations to this study, namely the unavailability of the Microcase data. This caused the independent variable data to be sourced from elsewhere and prohibited the ability to use data with the same reporting methods. Fewer counties were available for analysis in the American Community Survey data, which may have eliminated useful data from the analysis. Additionally, the mobility measure only looks at the past year rather than over the span of five years used by Lanier and Huff-Corzine (2006).

Conclusion

Some improvements do seem to have been made since 1992, the end of Lanier and Huff-Corzine (2006)'s data time frame. Based on the findings of this study, social disorganization is not applicable to American Indian homicide at the county level. It does seem apparent that the decreases in violent crime that have occurred over the last 20 years has extended to American

Indians, in that the victimization counts were quite a bit lower than they were in Lanier and Huff-Corzine (2006).

This study provides updated findings for American Indian homicide victimization. This is important because little research exists on the subject overall but especially for the last 20 years. The majority of the literature that does exist does not look at incidents past the early 1990's. This study also shows that social disorganization may not be an applicable framework for American Indian homicide victimization anymore. This study also provides an overview of how these variables have changed since 1992. This allows an updated descriptive analysis for American Indians in regards to variables related to social disorganization.

More research is still needed to further our understanding of American Indian homicides. It would be interesting to see an updated overview of American Indian homicides, such as the one by the U.S. Department of Health and Human Services (1996). That study provided a plethora of information of American Indian homicides, but it is now a bit dated. It could also be interesting to see a comparison of American Indian homicides to the homicides of other races, particularly black homicides because these two racial categories have the highest homicide rates and are both typically viewed under the framework of social disorganization theory.

APPENDIX: TABLES

Table 1: Frequency Distribution of American Indian Homicide Victimizations for Selected U.S. Counties, 2006 to 2012

Total Number of AI Homicides	N	%
0	195	74.7
1	32	12.3
2	19	7.3
3	8	3.1
4	3	1.1
5 or more	4	1.6

Note: N=261

Table 2: Means and Standard Deviations for All Variables Within the Model

Variable	Mean	Standard Deviation
American Indian Homicide	0.61	2.43
Ethnic Heterogeneity	0.34	.16
American Indian Poverty	28.54	12.33
Mobility	5.29	4.84
Rural County	0.69	0.46
American Indian female-headed household	20.61	11.93
County Population	96,532.32	241,684.98
Percent aged 15-29	19.91	4.05

Table 3: Results of Zero Inflated Negative Binomial Regression for Selected U.S. Counties Examining the Effect of Social Disorganization on American Indian Homicide Victimization, 2006 to 2012

Variable	Model	
	Coefficient	Standard Error
American Indian female-headed household	-0.002	0.02
Ethnic Heterogeneity	0.004	0.87
American Indian Poverty	-0.02	0.02
Mobility	0.05	0.03
Rural County	0.66	0.34
LN County Population	1.73	7.03
Percent aged 15-29	-0.17***	0.05

Note: N=261. LN= Natural Logarithm. American Indian population (ln) is included in the model as an offset variable.

* p≤.05; ** p≤.01; *** p≤.001

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