Great Plains Sociologist

Volume 20 | Issue 1 Article 2

2009

A Test of Social Disorganization on Juvenile Property and Violent Crime Rates by Zip Codes Within Two Nonmetropolitan Counties

Mario T. Hesse
St. Cloud State University

Susan M. Hilal
Metropolitan State University

A Test of Social Disorganization on Juvenile Property and Violent Crime Rates by Zip Codes Within Two Nonmetropolitan Counties

Mario L. Hesse* Susan M. Hilal

Abstract This study tests the effects of social disorganization on juvenile crimes rates by zip code within two nonmetropolitan counties. It does so by examining the relationships between the selected social disorganization indicators of nontraditional family, residential mobility, and socioeconomic status (poverty) and violent and property crime among juveniles through the use of ANOVA testing. Secondary data obtained from the South Dakota Department of Corrections on adjudicated juveniles and their associated crime and residential location, as well as data from the United States Census Bureau is used and analyzed to test three main hypotheses. Findings indicate that areas characterized by poverty and residential mobility are associated with violent and property crime committed by juveniles. A discussion and implication section is provided.

INTRODUCTION

Empirical findings on geographical and social aspects of crime and delinquency remain an important part of criminological research. Unfortunately, previous studies have been limited in an important way. A large portion of research using variables associated with social disorganization theory utilize samples from large urban areas (i.e., metropolitans areas), while excluding nonmetropolitan areas—that is, rural areas and smaller cities and towns. The process of defining what is "rural" is a difficult task. Bouffard and Muftie (2006) note that even government entities have differing definitions of rural and urban communities; thus, definitions

* Mario L. Hesse, Ph.D., St. Cloud State University, Department of Criminal Justice Studies, 720 Fourth Avenue South, Stewart Hall 246, St. Cloud, MN 56301; e-mail: mlhesse@stcloudstate.edu
Susan M. Hilal, Ph.D., Metropolitan State University, School of Law Enforcement and Criminal Justice, 1450 Energy Park Drive, Suite 100A, St. Paul, MN 55108; e-mail: susan.hilal@metrostate.edu

do not always consider features specific to individual understandings of rural and urban. For the purpose of this article, the authors contend that South Dakota is primarily a rural state, even if this does not necessarily fit a distinct government definition of rural; therefore, nonmetropolitan and rural are used synonymously.

Nonmetropolitan areas are not without their share of crime and delinquency; therefore, it is remiss to focus only on metropolitan areas in studying the link between social disorganization indicators on crime and delinquency. While nonmetropolitan areas may not experience the same frequency of crime as "big cities," these areas can and do experience criminal and delinquent activity. South Dakota, relative to any other state, experiences fewer crimes, crime is still present. According to official Federal Bureau of Investigation statistics, South Dakota, in 2000, had a total crime index of 2,320 per 100,000 people (49th), with 167 being violent and the remaining property crime (47th and 50th, respectively). In comparing South Dakota crime index rates with those of Iowa, a comparable populous state in the Midwest, Iowa reported a crime index of 4,249 per 100,000 (22nd), 566 for violent crime rates reported (10th) and a 3,683 property crime rate of 3,682 (23rd).

The purpose of this research is to address relationships that may exist between the selected social disorganization indicators of nontraditional family, residential mobility, and poverty on violent and property crimes rates committed by juveniles within two nonmetropolitan counties in South Dakota. The organization of this paper will address a review of literature pertaining to the theory of social disorganization, the design of the research study to test the relationships of the three indicators of social disorganization on property and violent crime committed by juveniles, an analysis of hypothesis testing through the use of ANOVA, and a concluding discussion.

LITERATURE REVIEW

Given the legacy of social disorganization theory, the following section is a review of the relevant theoretical literature, beginning with an overview of the theory, followed by a review of some of the empirical studies of social disorganization conducted in nonmetropolitan areas, and a more thorough review of the three indicators of social disorganization used in the present study.

Social structural theories of crime and delinquency are varied, but center on the main themes of social structure and institutions to maintain that social structure. Social structure refers to the order of society (i.e., the relationships between individuals, groups, organizations, etc.) and how that order influences one's daily activities. The institutions that help maintain social structure include the family, religion, school, government, and the media. Social structural theories address crime and delinquency as an effect on individuals. These theories are less concerned with why youth become delinquent than with why certain ecological areas, that is, the distribution of crime and delinquency within a geographical area experience high delinquency rates.

Social disorganization theory emerged as a result of environmental and social conditions that materialized at the turn of the twentieth century in Chicago (Shaw and McKay 1931, 1936, 1942), which included high rates of juvenile delinquency, and various social problems within the city. Early sociologists, including Thomas and Znaniecki (1918) and Parks and Burgess (1924, 1925), set out to account for the high levels of deviant and criminal behavior. Their conclusion was that juvenile delinquency and crime is caused by the nature of the environment in which people live (e.g., immigration levels, poverty, etc.), which leads to higher crime and delinquency rates.

Social disorganization reemerged in the mid-1980s as one of the major theoretical perspectives in the study of crime. Originally, the theory primarily focused on a neighborhood's distribution of crime and delinquency, hypothesizing that rates of crime were due to variation in the capacity of neighborhoods to constrain its residents from violating norms. Ecological lines of investigation in criminology focused principally on, but not limited to residential mobility, nontraditional families, and socioeconomic status as indicators for social disorganization (Blau and Blau 1982; Bouffard and Muftic 2006; Kubrin and Weitzer 2003; Osgood and Chambers 2000, 2003; Rountree and Warner 1999; Van Wilsem, Wittebrood, and De Graaf 2006). These principally focused areas are the basis of the current study.

Empirical Studies in Nonmetropolitan Areas

Presently, only a handful of studies have addressed structural factors on crime rates in nonmetropolitan areas. The following reviews some of the more recent literature.

Osgood and Chambers (2000) presented an analysis of structural correlates of arrest rates for violence committed among juveniles within 264 substantial nonmetropolitan counties of four states: Florida, Georgia, South Carolina, and Nebraska. The authors found that juvenile rates of violence were associated with rates of residential instability, family disruption, and ethnic heterogeneity. Furthermore, they noted that in their study rates of poverty were not related to violence among juveniles as poverty was negatively related to residential instability.

In 2002, Barnett and Menchkin addressed the relationship between population change and economic status on the effects of violent and property crime in nonmetropolitan areas with varying population changes. Secondary data was utilized from the Federal Bureau of Investigations Uniform Crime Report for both violent and property crime. Among their key findings was that population stability was associated with property crime, the more stable the population the more likely it can control against property crime. As it relates to violent crime,

residential stability was not able to help control for crime. The authors suggest that violent crime is more intimate, and even in stable communities these more intimate crimes occur when poverty is taken into consideration.

Bouffard and Muftie (2006) selected a number of nonmetropolitan counties (221) in four Midwestern states: North Dakota, Minnesota, South Dakota, and Wisconsin to test two broad-based questions within social disorganization: (1) whether social disorganization theory is generalizable to rural as well as urban communities; (2) are the concepts derived from social disorganization theory generalizable across violent offense types (2006:56). In their analyses, the authors found that the structural social disorganization variables (residential instability, nontraditional family, low socioeconomic status, and ethnic heterogeneity) correlate to violence across all offense types with few exceptions.

Roh and Choo (2008) conducted a study of social disorganization in a suburban area. They did so by looking at crime in a different way than previous studies examining social disorganization. They looked at calls by citizens to the police for crime, disturbance, and civil service, regardless of the action taken after the call was generated. They concluded that all three of their indicators of social disorganization (poverty, residential mobility, and racial/ethnic heterogeneity) related to calls for crime. Calls for disturbance were only related to poverty. Lastly, all three indicators were related to calls for civil service.

Indicators of Social Disorganization

While there are many indicators of social disorganization, this study focuses on three: nontraditional families, residential mobility, and socioeconomic status (poverty).

Nontraditional Families

Clear and substantial evidence that broken homes are a major cause of juvenile crime has been in the literature for many years. There are several possible reasons why the absence

of a parent in the home is associated with an adolescent's risk for delinquency, such as lower income (Heimer 1996) or higher residential mobility (Astone and McLanahan 1994).

Research indicates that two parents are better able to care for, supervise, and socialize children, than one parent (Hirschi 1969; McLanahan and Sandefur 1994). Thus, parental absence, in a very broad sense, is likely to reduce the level of social control to which the child is exposed. Findings by Warner and Pierce (1993), substantiated by Kposowa, Breault, and Harrison (1995) reported that non-traditional families, using female-headed households as a variable, positively affected robbery and burglary rates of crime. Chamlin (1989) indicated that a lack of social structure produced by non-traditional families affects the rate in which individuals commit crimes. Findings from Smith and Jarjoura (1988), along with the work of Burton et al. (1995), link divorce, but more importantly, single-parent families, to delinquency, since close supervision is very difficult for a single parent. Young men who see their parents' divorce during their teen years are especially likely to engage in criminal behavior (Mednick, Baker, and Carothers 1990). Sampson (1995) and Sampson and Groves (1989), argued that unshared parenting strains parents' resources of time, money, and energy, which interfere with their ability to supervise their children and communicate with other adults in the neighborhood.

Research in rural areas has found that delinquency rates are higher in communities with greater levels of non-traditional families (Bouffard and Muftie 2006; Osgood and Chambers 2000). A nontraditional family affects crime because a high level of single-parent families in a community weakens informal social controls (Sampson 1995). Informal controls, according to Sampson and Groves (1989), are those controls most likely to affect unsupervised peer groups, one of the leading predictors of higher neighborhood delinquency rates. The presence of many households with absent adults equates to fewer adults available for the day-to-day monitoring of children (Bursik and Grasmick 1992; Sampson 1995).

Residential Mobility

When the population of an area is constantly changing, residents have fewer opportunities to develop strong, personal ties to one another and to participate in community organizations (Bursik 1988). This assumption has been central to research on social disorganization since its inception. Rapid and significant population change is also an important independent variable within rural settings (Freudenberg 1986). Empirical evidence in rural communities has shown that population change has a relationship to crime (Barnett and Menchkin 2002; Osgood and Chambers 2000; Roh and Choo 2008).

Findings on the effects of residential mobility on crime rates are not entirely reliable especially for burglary and homicide rates. Smith and Jarjoura (1988) reported that residential instability increases burglary victimization rates. Other research concludes that residential instability decreases the risk of burglary victimization; this may be because of higher reporting (Martin 2002; Miethe, Hughes, and McDowall 1991). Van Wilsem et al. (2006), in examining neighborhoods defined by zip codes, reported that turnover associated with neighborhood socioeconomic improvement results in higher victimization rates than in stable disadvantaged areas. This suggests that both economically advantaged and disadvantaged neighborhoods are susceptible to the repercussions of community instability. Furthermore, regardless of how a neighborhood is grouped (e.g., block groups, neighborhood clusters, or census tracts), residential mobility appears to increase violent crime rates (Browning, Feinberg, and Dietz 2004; McNulty 2001; Rountree and Warner 1999; Sampson, Raudenbush, and Earls 1997). The evidence suggests that residential mobility is an important consideration in the study of social disorganization, particularly for violent crime.

Socioeconomic Status (Poverty)

The most common single indicator of socioeconomic status used in this area of research has been the percentage of community residents living in poverty, since poverty creates unstable communities. Shaw and McKay argued in their classic 1942 study that economic deprivation encourages crime only because poor neighborhoods tend to be socially unstable, with a high turnover rate of residents from many different ethnic and racial groups. Such communities have only a weak ability to regulate social activities such as child rearing. According to Bursik and Grasmick (1992), this line of reasoning relied heavily on the previous work of Park and Burgess (1924), which looked at the experience of poor immigrants in the early 20th century. They concluded that poor neighborhoods were unstable because newcomers eventually found better jobs and moved to more affluent areas. Thus, the availability of well-paid jobs was a central feature of upward mobility. Sampson and Grove (1989) point to the fact that low socio economic areas have a lower organizational base, which equates to scarce human and financial resources to provide meaningful activities for youth within the communities, which is a main mechanism of informal social control. Massey and Eggers (1989) concluded that the concentration of minorities in poverty-stricken areas that are deteriorated result in high crime rates, poor schools, and excessive mortality.

Furthermore, economic deprivation explains the differences of crime rates within regions of the country. Research by Hsieh and Pugh (1993), who reviewed more than 30 studies assessing relationships between poverty, income inequality, and violent crime, and the works from Hagan and Peterson (1994) and Fowles and Merva (1996), found that a change in income impacts criminal activity positively. Other empirical evidence suggests that there is a significant and positive relationship for burglary (Martin 2002; Rountree and Warner 1999) and assault (Rountree and Warner 1999).

Socioeconomic status (poverty) has long been an ecological correlate of crime and delinquency (Bursik 1984; Byrne and Sampson 1986; Kornhauser 1978). The role of economic status in social disorganization theory is based on patterns of growth in urban areas. In many major urban areas, growth leads to the physical, economic, and social decline of the residential areas closest to the central business district. These areas then become most readily available to the poor and to groups who migrate to the area.

As a result, areas with the lowest average socioeconomic status should also have the greatest residential instability and ethnic diversity, which in turn will create social disorganization (Bursik and Grasmick 1992). Accordingly, Warner and Pierce (1993) found that urban neighborhoods with high rates of poverty also have greater rates of delinquency. The processes that link poverty with population turnover are specific to urban settings, as nonmetropolitan areas can be stable and ethnically homogenous (Osgood and Chamber 2003).

In sum, social disorganization theory suggests that supervision of children by families is an important buffer against high rates of delinquency. At a societal level, a child in a single-parent home may be at higher risk for delinquency because fewer controls are placed over the child due to the absence of an adult in the home.

RESEARCH DESIGN

The current study uses a deductive approach to test three main hypotheses developed from social disorganization theory. The three hypotheses are:

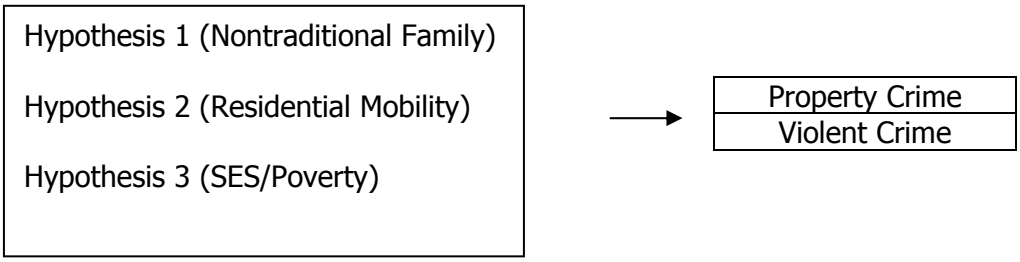
Hypothesis 1 - Rates of crime committed by juveniles are positively associated with nontraditional family percentage (Nontraditional family).

Hypothesis 2 - Rates of crime committed by juveniles are positively associated with a residential instability percentage (Residential mobility).

Hypothesis 3 - Rates of crime committed by juveniles are positively associated with an economic status percentage level (SES/Poverty).

The theoretical model (Diagram 1) illustrates the applicability of social disorganization through empirical generalizations. The model indicates that property and violent crime are influenced by the three independent variables of percentage of nontraditional families, percentage of residential mobility, and percentage of poverty within two counties in South Dakota.

Diagram 1 Social disorganization and juvenile crime rates model



VARIABLES AND OPERATIONALIZATIONS

Independent Variables

Nontraditional family is defined as a single parent with children and is indexed by households, without both parents present, expressed as a proportion of all households found in the 2000 U.S. Census. It was calculated by aggregating the totals for female-headed and male-headed households as reported by the U.S. Census Bureau for 2000.

Residential mobility is defined as the proportion of households occupied by residents in the state (not just the offenders) who have moved to a different home within the same zip code in the last 5 years as reported by the 2000 U.S. Census. It was calculated by the population change in the selected counties and based on the zip codes recorded at time of adjudication.

The researchers used the number of persons moving to a different home within the same zip code for the primary year 1995.

Socioeconomic status (Poverty) is defined as the proportion of juveniles living below the South Dakota State poverty level as opposed to living above the poverty level for the year 2000. It was calculated by the proportion of juveniles as a whole in the state (not just offenders) living below the selected state's poverty level, obtained from the U.S. Census Bureau. Based on 2000 U.S. Census statistics, the poverty level for the state of South Dakota was used.[1] Table 1 represents the percentages (collectively) of juveniles in relation to the total population of variables presented (percentages based on years 1995-2000 via the U.S. Census Bureau).[2]

Table 1 Percentages of selected variables

Geographical Areas (zip codes)	% of movement to different house in same zip code within the last 5 years	% of juveniles not living in same house with both parents	% of juveniles living in poverty
East 1	49	14	38
East 2	60	19.5	30
East 3	45	9.5	29
East 4	59	12.4	27
East 5	45	39.5	35
East 6	61	7.1	32
East 7	53	10.3	45
West 1	57	21	38
West 2	47	9.2	28
West 3	46	15.1	45
West 4	89	7.3	46

[1] The U.S. Census Bureau publishes a table of "poverty thresholds." Poverty thresholds identify wage levels below which a family or household is considered "poor." The table most readily available from the Census Bureau allows for 48 possible income levels, from $7,990 for a single person family unit over 65 years of age, to $32,208 for a family of nine or more, including only one adult. "Poverty" and "poor" are synonymous in this study. Finally, family units comprised on 3 individuals with an annual income of $14,150 is defined as "poverty level" for the purposes of this study (Source: U.S. Bureau of the Census, 2000).

[2] Original zip codes, collectively, are indicated in parenthesis: East 1 (57103), East 2 (57104), East 3 (57105), East 4 (57106), East 5 (57107), East6 (57108), East 7 (57110), West 1 (57701), West 2 (57702), West 3 (57703), and West 4 (57706). The recoding zip code procedure is explained within the sampling section.

Dependent Variable

Crime is defined in accordance with the definitions provided by the Federal Bureau of Investigation. Specifically, the selected offenses are forcible rape, robbery, aggravated assault, burglary, larceny-theft, motor vehicle theft, and arson, which are serious crimes by nature and/or volume. Murder/manslaughter is not used as a crime variable in this study as in a majority of cases involving juveniles who commit murder, a high proportion of these juveniles are certified as adults, thus no longer under the jurisdiction of the juvenile court system.

Crimes were aggregated into property (burglary, larceny-theft, arson, and auto theft) and violent offenses (rape, robbery, and aggravated assault) as indicated by the UCR, and labeled "property" and "violent." Due to the limited frequency of the various juvenile crimes indicated, after coding and removal of unnecessary data, crimes that were similar in nature were recoded to get the greatest number for each of the seven index crimes used.

Sampling

A data set of all adjudicated juveniles (N=1,066) from two counties in South Dakota during the time period 1996-2003 were obtained from the Department of Corrections. For the purposes of this research, the researchers defined adjudication as the court finding that the juvenile in question committed the offense(s) and were charged and classified as a juvenile according to the South Dakota Department of Corrections definition of someone under l8 years old. The counties were chosen because they contained the highest numbers of juvenile crime rates compared to the other represented counties in the original data set. Additionally, these counties include the same demographic percentage compared to their overall county population for areas like family status, gender, heterogeneity, poverty levels, and residential instability (United States Census Bureau 2000).

To create the data set for analysis, the researchers needed to recode a number of the

crime counts. The initial juvenile crime count included 1,580 entries. Due to the limited frequency of the various crimes indicated, after coding and removal of non-applicable data (non-index crimes), similar crimes were recoded into one of the seven index crimes. Juveniles who had duplicate entries that were not one of the seven index crimes were deleted, including those with probation violations and those in need of protection services. Crimes of similar nature were recoded to obtain the greatest number for each of the seven index crimes and then recoded into the latter mentioned two categories. Firstly, all crimes involving "assault-type" offenses were recoded into *ASLT*. Secondly, all crimes that were sexual in nature were recoded as *SEXCRIME*. All crimes involving robbery were recoded as *ROBBERY*. All crimes involving arson offenses were recoded as *ARSON.* And, finally, all crimes involving burglary, theft and motor vehicle theft were recoded as *BURG*, *THEFT*, and *MVTHEFT*, respectively (see Appendix A). These crimes were aggregated into property and violent offenses as indicated by the UCR, and labeled "property" and "violent." This left a final juvenile crime count of 722 (See Appendix B for aggregated crimes for each of the two counties, collectively).

After recoding the crime counts, and because this analysis is conducted at a zip code level, juvenile crime not committed in one of the zip codes was deleted. These areas were recoded as East 1, East 2, East 3, East4, East 5, East 6, East 7, West 1, West 2, West 3, and West 4.

Since the original data contained limited juvenile data (e.g., crime, age, etc.), and not the necessary social disorganization variables needed for this study (i.e., poverty/SES, residential instability, or nontraditional family status), the researchers turned to secondary data provided by the US Census Bureau for the year 2000. Specifically, the researchers used percentage information within the zip codes (recoding and renaming of zip codes is discussed in the Analysis of Data section.

The most accurate data for the period of this study was available via the U.S Census Bureau compiled in 2000. Therefore, SES/poverty was calculated by the proportion of juveniles living below the selected state's poverty level in the year 2000. Based on 2000 U.S. Census statistics, the poverty level for the state was used for both metro counties ($17,463). Next, the researchers used the total number of persons moving to a different home within the same zip code in order to index residential instability. And, lastly, nontraditional family status was indexed by households, without both parents present, expressed as a proportion of all households found in the 2000 U.S. Census.

ANALYSIS OF DATA

The analysis of data is presented in two parts. The first part describes the sample by providing the means and standard deviations for the three independent variables as well as the percentages of the sample with selected indicators of social disorganization (the independent variables) by region. The second part provides the results of the hypothesis testing through the use of Analysis of Variance (ANOVA). ANOVA was used as opposed to *t* tests because of the multiple groups within each independent variable (lower, middle, and upper class poverty levels) as opposed to only two groups (rich and poor).

Characteristics of the Sample

Table 2 represents the means and standard deviations for three selected variables, representing the counties in which the juveniles reside and crimes adjudicated. Table 1 includes percentage of juveniles under the age of 18 and not living at home with both parents (NTBOTH), percentage of residents moving to a different home within the same zip code for the previous 5 years (MOBILITY), and percentage of juveniles living in poverty (POVERTY). As illustrated, slightly more than a third of juveniles (34.8%) resided in poverty in the two counties sampled. A majority of residents (55.1%) had moved to a different home within the same zip

code within the five years examined (1995-2000). Approximately 1 in 5 juveniles (17.6%) were living within one-parent households.

Table 2 Means and standard deviations for age of juvenile and selected variables

Variables	μ	SD
% family household w/children under 18 without both parents living at home (NTBOTH)	17.57	5.066
% of residents moving to a different house within the same zip code (MOBILITY)	55.08	5.044
% of juveniles living in poverty (POVERTY)	34.84	5.155

Table 3 provides the percentages of the sample that have the selected characteristics by the 11 regions that had been recoded by zip code. As illustrated, the percentages are varied across all three indicators of social disorganization. The percentage range for residential mobility was from 45%-89%. The areas with the most mobility were West 4 (89%), East 6 (61%) and East 2 (60%). In looking at the indicator for nontraditional family, East 5 had slightly less than half (46%) of juveniles living without both parents. The next area, with about half the percentage of East 5, was West 1 at 21% of juveniles living without both parents. The last indicator, poverty, shows a range of between 28% and 46%, with West 4 having the

greatest percentage of juveniles living in poverty, followed by West 3 and East 7, both at 45%. There is not one region that represents the lowest or highest percentages across all three indicators of social disorganization. However, relatively speaking, West 2 has lower percentages for all three indicators compared to the other 10 regions.[3]

Table 3 Percentage of sample with indicators of social disorganization by region

Region	% of movement to different house in same zip code within the last 5 years (μ 55.54%)	% of juveniles not living in same house with both parents (μ 14.99%)	% of juveniles living in poverty (μ 35.72%)
East 1	49	14	38
East 2	60	19.5	30
East 3	45	9.5	29
East 4	59	12.4	27
East 5	45	39.5	35
East 6	61	7.1	32
East 7	53	10.3	45
West 1	57	21	38
West 2	47	9.2	28
West 3	46	15.1	45
West 4	89	7.3	46

Hypothesis Testing

In order to test the hypotheses, ANOVA was used on the three selected indicators of social disorganization. Results of ANOVA testing are presented in Table 4 and are analyzed in relationship to each hypothesis.

[3] The averaged percentage of the three variables (resident mobility, living without both parents, and poverty) yielded a mean of 55.54% (611/11), 14.99% (164.9/11), and 35.72% (393/11), respectively. Specifically, 55.54% of the residents living in the eleven metro areas, collectively, have moved to a different home within the same zip code within the last 5 years. Moreover, 15% (14.99%) of households are headed both parents, and 36% (35.72%) of juveniles are living in poverty.

Hypothesis 1 - Rates of crime committed by juveniles are positively associated with nontraditional family percentage (nontraditional family). This difference among the means *is not* significant when using family status as an indicator in the study at the .05 level ($F = 1.597$, $df = 1, 720$); therefore, differences in nontraditional family status does not result in increased juvenile rates of crime (both serious and property).

Hypothesis 2 - Rates of crime committed by juveniles are positively associated with residential instability percentage (residential mobility). The findings of this study *support* the hypothesis that juvenile crime rates increase with social mobility. In other words, as population turnover increases, juvenile rates of crime increase. Statistical analysis show significance at the .05 level ($F = 6.092$, $df = 1, 720$).

Table 4 ANOVA summary table for juvenile crime frequency by social factors

Variables	Source	Sum of Squares	*df*	Means Square	F	Sig.	η^2
% family household w/children under 18 w/o both parents living at home	Between Groups Within Groups Total	40.945 18463.810 18504.755	1 720 721	40.945 25.644	1.597	.207	.002
% of residents moving to a different house	Between Groups Within Groups Total	153.902 18188.909 18342.810	1 720 721	153.902 25.263	6.092	*.014 **	.008
% of juveniles living in poverty	Between Groups Within Groups Total	268.838 18891.876 19160.715	1 720 721	268.838 26.239	10.246	*.001 **	.014

$* p < .05$

Hypothesis 3 - Rates of crime committed by juveniles are positively associated with economic status percentage level (poverty/SES). Just as poverty creates unstable communities,

this factor also contributes to juvenile crime rate increases, collectively. This hypothesis *is supported* as statistical test indicate significance at the .05 level ($F = 10.246$, $df = 1, 720$).[4]

DISCUSSION

This study tested three hypotheses deduced from social disorganization theory to address the effects of social disorganization indicators on juvenile crime rates in rural areas. Findings indicate that two contributing factors, poverty and residential mobility, are associated with juvenile crime. Specifically, the relationship between poverty and crime rates showed that crime rates increase in rural areas among juveniles as socioeconomic status decreases in defined metropolitan areas within a rural state. This finding holds true to one of main the theoretical premises of social disorganization theory as well as supported by numerous other empirical findings (Bouffard and Muftic 2006; Kubrin and Weitzer 2003).

Although nontraditional family was not found to be statistically significant in this study, the results of this variable, based on other research, does appear to have a significant impact on determining the level of crime in a rural community. Specifically, Sampson (1985) and Sampson and Groves (1989) argued that unshared parenting strains the resources of each parent, which interferes with their ability to supervise their children. As hypothesized by social disorganization, crime patterns arise from the burden of single parenting. What is more, household social structure has an important bearing on poverty.

The percentage of single-parent households in South Dakota increased from 9.23% in 2000 to 12.72% in 2005. Families without both parents living in the house must rely on one

[4]To protect against Type I error inflation, the Bonferroni adjustment was used (.05/3 ≈ .017 ≈ .02 (significant); .05/2 ≈ .025 ≈ .03 (significant); and .05/1 = .05 (non-significant), respectively). Eta-squared (η^2), (% of NTBOTH, MOBILITY, and POVERTY, respectively) values are 40.9 / 18504.7 = .002 (< .5% of the % explains the variance in juvenile crime); 153.9 / 18342.8 = .008 (< 5% of the % explains the variance in juvenile crime); and 268.8 / 19160.7 = .014 (> 1% of the % explains the variance in juvenile crime). As noted by Miethe (2007:229) with large sample sizes (N > 1,000), relatively small η^2 values ($\eta^2 < 2\%$) may yield significant F-ratios (i.e., % of residents moving to a different house within the same geographic area). Finally, F (1,720) = 6.09; p = .014 (significant); F (1, 720) = 1.59; p = .207 (non-significant); and F (1, 720) = 10.24; p = .001 (significant).

income, which a good portion goes towards childcare, thus leaving less money for other activities (Brooks, Saileza, and Hess 2008). The authors of this research believe that a more refined survey instrument would bear this as a statistically significant factor. As one would expect using social disorganization theory, further analysis would suggest that communities with higher numbers of juveniles living in single-parent households are more prone to acts of delinquency.

Regardless of geographical location, poverty and residential mobility are associated with crime rates (Bouffard and Muftic 2006; Kurbin and Weitzer 2003; Shaw and McKay 1942; Silver 2000) and in general, the U.S. is characterized by residential mobility. People do not stay in one place. While there are advantages to moving, there are also some disadvantages, which have consequences for all residents in a community.

Osgood and Chambers (2003) purported that an area with a lower than average socioeconomic status will have, among other factors, the greatest residential instability, which in turn will create social disorganization. Areas, metropolitan or nonmetropolitan, that experience higher percentages of residential mobility, also experience higher rates of serious crime committed by juveniles (Martin 2002). Perhaps this is because poorer residents move more frequently.

CONCLUSION AND LIMITATIONS

This study has extended research on nonmetropolitan communities and crime. Secondary data analysis from similar geographic locations can be useful for testing and expanding the research on social disorganization because these areas present a vast array of variables. Specifically, the findings from this study suggest that nonmetropolitan communities may provide the setting for the direct impact poverty and mobility have on area disorganization;

therefore, social disorganization and other related social structural approaches are suitable starting points for developing crime-specific theories to nonmetropolitan settings.

As with any research undertaking, this study was not without limitations. The first limitation of this research is generalizability. The researchers only conducted this study within one state, South Dakota; therefore, no generalization can be made about the percentage of nontraditional family, poverty, residential mobility, and crime rates to states other than South Dakota.

A second limitation is missing data. Nontraditional family and residential mobility within the same zip code was not available in the data set. These percentages were obtained from the U. S. Census Bureau. Although census information may be more accurate than information received on adjudicated juveniles (false reporting and collection errors), the absence of these two variables in the same data set is important to note as Nontraditional family may have been found significant.

A final limitation was the use of zip codes rather than a self-identified neighborhood. If this research had allowed for the use of a neighborhood area in the traditional sense of the definition, a stronger relationship to delinquency may have been found. Nevertheless, the fact that an area as large as a zip code still reported two statistically significant relationships lends clear support that a social disorganization explanation is applicable to a rural state.

Despite these limitations further explanation on social disorganization and county crime rates may promote further research, and add to the works of this theory. Therefore, an additional insight into this relationship is warranted, specifically in the areas of "urban only crime" rates in nonmetropolitan areas. Results from this research provide support for some of the basic tenets of social disorganization theory. An examination of other indicators of social disorganization, like racial/ethnic heterogeneity and rapid population growth may be warranted.

Perhaps an application of Roh and Choo (2008) methodology of studying crime through calls for service might also be prudent to apply in a nonmetropolitan setting. One can conclude from this study that the use of social disorganization theory can be used to understand criminological phenomenon in these two rural communities in South Dakota.

REFERENCES

Astone, Nan Marie and Sara S. McLanahan. 1994. "Family Structure, Residential Mobility and Educational Attainment." *Demography* 31:575-584.

Barnett, Cynthia and F. Carson Menchken. 2002. "Social Disorganization Theory and the Contextual Nature of Crime in Nonmetropolitian Communities." *Rural Sociology* 67:373-393.

Blau, Judith and Peter Blau. 1982. "The Cost of Inequality: Metropolitan Structure and Violent Crime." *American Sociological Review* 47:114-29.

Bouffard, Leana Allen and Lisa R. Muftic. 2006. "The 'Rural Mystique': Social Disorganization and Violence beyond Urban Communities." *Western Criminology Review* 7:56-66.

Brooks, Trevor, Saileza Khatiwada, and Donna Hess. 2008. "South Dakota's Child Poverty Change." *Rural Life Census Data Center, South Dakota State University* 2:1-5. Retrieved February 2009 (http://agbiopubs.sdstate.edu/articles/RS2-08).

Browning, Christopher R., Seth L. Feinberg, and Robert D. Dietz. 2004. "The Paradox of Social Organization: Networks, Collective Efficacy, and Violent Crime in Urban Neighborhoods." *Social Forces* 83:503-534.

Bureau of Labor Statistics, United States Department of Labor. (February, 2009). "Local Area Unemployment Statistics: Federal Statistical Area Designations Based on Census 2000." Retrieved February 2009 (http://www.stats.bls.gov/lau/lausmsa.htm).

Bursik, Robert J. 1984. "Urban Dynamics and Ecological Studies of Delinquency." *Social Forces* 63:392-413.

------. 1988. "Social Disorganization and Theories of Crime and Delinquency." *Criminology* 26:519-551.

Bursik, Robert J. and Harold G. Grasmick. 1992. "Longitudinal Neighborhood Profiles of Delinquency: The Decomposition of Change." *Journal of Quantitative Criminology* 8: 247-264.

Burton, Velmer S., David T. Evans, Shesha R. Kethineni, Francis T. Cullen, Gregory R. Dunaway, and Gary L. Payne. 1995. "The Impact of Parental Controls on Delinquency." *Journal of Criminal Justice* 23:111-126.

Byrne, James and Robert J. Sampson. 1986. "Key Issues in the Social Ecology of Crime." Pp. 1-22 in *The Social Ecology of Crime,* edited by J. Byrne and R. Sampson. New York: Springer-Verlag.

Chamlin, Mitchell B. 1989. "A Macron Social Analysis of the Change in Robbery and Homicide Rates: Controlling for Static and Dynamic Effects." *Sociological Focus* 22:275-286.

Freudenberg, William R. 1986. "The Density of Acquaintanceship: An Overlooked Variable in Community Research." *American Journal of Sociology* 92:27-63.

Fowles, Richard and Mary Merva. 1996. "Wage Inequality and Criminal Activity." *Criminology* 34:163-82.

Hagan, John and Ruth D. Peterson. 1994. *Inequality and Crime*. Stanford: Stanford University Press.

Heimer, Karen. 1996. "Gender, Interaction, and Delinquency: Testing a Theory of Differential Social Control." *Social Psychology Quarterly* 59:39-61.

Hirschi, Travis. 1969. *Causes of Delinquency.* Berkeley and Los Angeles: University of California Press.

Hsieh, Ching-Chi and M.D. Pugh. 1993. "Poverty, Income Inequality, and Violent Crime: A Meta-analysis of Recent Aggregate Data Studies." *Criminal Justice Review* 18:182-202.

Kornhauser, Ruth R. 1978. *Social Sources of Delinquency*. Chicago: University of Chicago Press.

Kposowa, Augustine J., Kevin D. Breault, and Beatrice M. Harrison. 1995. "Reassessing the Structural Covariates of Violent and Property Crimes in the USA: A County Level Analysis." *British Journal of Sociology* 46:79-105.

Kubrin, Charis E. and Ronald Weitzer. 2003. "New Directions in Social Disorganization Theory." *Journal of Research in Crime and Delinquency* 40:374-402.

Martin, David. 2002. "Spatial Patterns in Residential Burglary." *Journal of Contemporary Criminal Justice* 18:132-146.

Massey, Douglas and Mitchell Eggers. 1989. "Hypersegregation in U.S. Metropolitan Areas: Black and Hispanic Segregation Along Five Dimensions." *Demography* 3:373-91

McLanahan, Sara S. and Gary D. Sandefur. 1994. *Growing Up with a Single Parent: What Hurts? What Helps?* Cambridge, MA: Harvard University Press.

McNulty, Thomas L. 2001. "Assessing the Race-Violence Relationship at the Macro Level: The Assumption of Racial Invariance and the Problem of Restricted Distributions." *Criminology* 39:467-490.

Mednick, Birgitte R., Robert L. Baker and Linn E. Carothers. 1990. "Patterns of Family Instability and Crime: The Association of Timing of the Family's Disruption with Subsequent Adolescent and Young Adult Criminality." *Journal of Youth and Adolescence* 19:201-220.

Miethe, Terance D., Michael Hughes, and David McDowall. 1991. "Social Change and Crime Rates: An Evaluation of Alternative Theoretical Approaches." *Social Forces* 70:165-185.

Office of Management and Budget. 2003. "Metropolitan Statistical Areas Micropolitan Statistical

Areas Combined Statistical Areas New England City and Town Areas Combined New England City and Town Areas 2003 (OMB Bulletin No. 03-04). *Statistical and Science Policy Branch Office of Information and Regulatory Affairs Office of Management and Budget*, Retrieved February 2009 (http://www.whitehouse.gov/omb/bulletins/b03-04_attach.pdf).

Osgood, D. Wayne and Jeff M. Chambers. 2000. "Social Disorganization Outside the Metropolis: An Analysis of Rural Youth Violence." *Criminology* 38:81-115.

-----. 2003. "Community Correlates of Rural Youth Violence." U.S. Department of Justice. Office of Justice Programs. Office of Juvenile Justice and Delinquency Programs.

Park, Robert E., Ernest W. Burgess. 1924. *Introduction to the Science of Sociology.* University of Chicago Press, Chicago.

Park, Robert E., Ernest W. Burgess, and Roderick D. McKenzie. 1925. *The City.* Chicago, University of Chicago Press.

Roh, Sunghoon and Tae Choo. 2008. "Looking Inside Zone V: Testing Social Disorganization Theory in a Suburban Area." *Western Criminological Review* 9:1-16.

Rountree, Pamela W. and Barbara D. Warner. 1999. "Social Ties and Crime: Is the Relationship Gendered?" *Criminology* 37: 789-813.

Sampson, Robert J. 1985. "Neighborhood and Crime: The Structural Determinants of Personal Victimization. *Journal of Research in Crime and Delinquency* 22:7-40.

Sampson, Robert. J. 1995. "The Community." Pp. 193-216 in *Crime*, edited by J. Q. Wilson and J. Petersilia. San Francisco: ICS Press Institute for Contemporary Studies.

Sampson, Robert J. and W. Byron Groves. 1989. "Community Structure and Crime: Testing Social Disorganization Theory." *The American Journal of Sociology* 94:774-802.

Sampson, Robert J., Stephen W. Raudenbush, and Felton Earls. 1997. "Neighborhoods and

Violent Crime: A Multilevel Study of Collective Efficacy." *Science* 277:918-924.

Shaw, Clifford R. and Henry D. McKay. 1931. "Social Factors in Juvenile Delinquency. Vol. II of Report on the Causes of Crime." National Commission on Law Observance and Enforcement, Report No. 13. Washington, D.C.: U.S. Government Printing Office.

-----. 1936. *Are Broken Homes a Causative Factor in Juvenile Delinquency?* The Institute for Juvenile Research and Behavior Research Fund, Chicago. No. 187.

-----. 1942. *Juvenile Delinquency in Urban Areas.* Chicago: University of Chicago Press.

Silver, Eric. 2000. "Extending Social Disorganization Theory: A Multilevel Approach to the Study of Violence Among Persons with Mental Illnesses." *Criminology* 38:1043-1074.

Smith, Douglas A. and Roger Jarjoura. 1988. "Social Structure and Criminal Victimization." *Journal of Research in Crime and Delinquency* 25:27-52.

Thomas, William I. and Florian Znaniecki. 1918. *The Polish Peasant in Europe and America: Monograph of an Immigrant Group.* Vols.1 and 2. Chicago: University of Chicago Press.

U.S. Census Bureau. 2000. American FactFinder. Retrieved September 2008 (http://factfinder.census.gov/home/saff/main.html?_lang=en).

Van Wilsem, Johan, Karin Wittebrood, and Nan Dirk De Graaf. 2006. "Socioeconomic Dynamics of Neighborhoods and the Risk of Crime Victimization: A Multilevel Study of Improving, Declining, and Stable Areas in the Netherlands." *Social Problems* 53:226-247.

Warner, Barbara D. and Glenn L. Pierce. 1993. "Reexamining Social Disorganization Theory Using Calls to the Police as a Measure of Crime." *Criminology* 31:493-517.

Appendix A Recoded juvenile adjudicated crime

ASLT
* Assault
*Aggravated Assault
*Simple Assault
*Simple Assault (1st or 2nd Offense)
*Simple Assault
(3rd or Subsequent within 5 Years)

ARSON
*Arson1
*Arson2
*Arson 2nd- without known occupant
*Arson 3rd- unoccupied structure

THEFT
*Shoplifting
*Theft - Grand > $500
*Grand Theft over $200
*Grand Theft over $500
*Petty Theft
*Petty Theft 1st-$100 or greater
*Theft from building
*Petty Theft Petty Theft 1= Class 1

MVTHEFT
*Stolen Vehicle
*Unauthorized use of

ROBBERY
*Robbery 1st Degree
*Robbery-other
*Robbery 2nd Degree

BURG
*Burglary- 1st degree
*Burglary 1st- occupied
*Burglary- 2nd degree
*Burglary- 3rd degree
*Burglary- 4th degree
*Burglary- Other
*Burglary 2nd-occupied
day/night
*Burglary 3rd -Unoccupied

SEXCRIME
*Consensual sex
*Incest
*Rape 1st- victim under 10
*Rape 1st Degree
*Rape 2nd Degree
*Rape 3rd Degree-Statutory
*Rape victim less than 10
*Sex Contact with incapacitated consent
*Sex contact w child under 16
*Sexual Contact under 10
*Sex Offense
*Sex. Contact w/under 16 > 3 Years Age Difference

Appendix B Frequency distribution of crimes (recoded and Part 1 Index) for all zip codes

Crime For Adjudicated Juvenile	*Frequency*	*Percent*
ARSON	6	.8
ASLT	157	21.7
BURG	162	22.4
MVTHEFT	32	4.4
ROBBERY	11	1.5
SEXCRIME	52	7.2
THEFT	302	41.8
Total	722	100
Recoded Crime		
Violent	223	30.9
Property	499	69.1
Total	**722**	100